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BEFORE THE NEW MEXICO STATE ENGINEER

IN THE MATTER OF THE APPLICATION BY TULLA RESOURCES GROUP PTY LTD AND SANTA TERESA CAPITAL, LLC FOR A PERMIT TO CHANGE POINTS OF DIVERSION AND PLACE AND PURPOSE OF USE UNDER THE WATER-USE LEASING ACT, NMSA 1978, §§ 72-6-1 TO -7 WITHIN THE LOWER RIO GRANDE UNDERGROUND WATER BASIN IN THE STATE OF NEW MEXICO

Hearing No. 21-025 OSE
File No. LRG-3150-E into LRG-17825

REPORT AND RECOMMENDATION

THIS MATTER came before Sandra L. Skogen, the State Engineer's appointed Hearing Examiner, upon an evidentiary hearing held on August 7-10, 13-16, and 21-23, 2023, via videoconference originating from Santa Fe, New Mexico (Evidentiary Hearing). The parties appeared as follows: Tanya L. Scott, Esq. and Charles T. DuMars, Esq. represented Tulla Resources Group PTY LTD and Santa Teresa Capital, LLC; Samantha R. Barncastle, Esq. represented Elephant Butte Irrigation District; Seth R. Fullerton, Esq. represented Santa Teresa Land, LLC, Paseo del Norte, LLC, and Westpark I, LLC; Tessa T. Davidson, Esq. represented Turner Ranch Properties, LP; Charles de Saillan, Esq. and Mara Yarbrough, Esq. represented Hillsboro Pitchfork Ranch, LLC, Percha-Animas Watershed Association, Gila Resources Information Project, and the Rio Grande Chapter of the Sierra Club; John W. Utton, Esq. represented Camino Real Regional Utility Authority; Christopher D. Shaw, Esq. and Nicholas R. Rossi, Esq. represented the New Mexico Interstate Stream Commission; and L. Christopher Lindeen, Esq. and Gordon Lazar, Esq. represented the Water Rights Division.

The parties submitted Proposed Findings of Fact and Conclusions of Law and Post-Hearing Briefs on January 12, 2024, and Response Briefs on February 23, 2024.

I. FINDINGS OF FACT

A. BACKGROUND

i. Application

1. Tulla Resources Group PTY LTD (Tulla Resources) entered into a lease agreement with Santa Teresa Capital, LLC (Santa Teresa Capital) for the lease of 2,400 acre-feet per annum (afa) for the temporary transfer to the Copper Flat Mine (herein so called, and sometimes referred to herein as the Mine) for five years from the start of commercial production at the Mine, with an option to extend the lease for up to 25 years and with an option for Tulla Resources or its designee to purchase the water rights (Santa Teresa Lease Agreement). The option to purchase the water right is exercisable within the defined term or any renewal term, and at any time after the third anniversary of the effective date of March 15, 2019.
2. On August 16, 2019, Tulla Resources and Santa Teresa Capital (Applicants) filed with the Office of the State Engineer (OSE) Application No. LRG-3150-E into LRG-17825, OSE File No. LRG-17825, for Permit to Change Points of Diversion and Place and Purpose of Use of Groundwater (Application) within the Lower Rio Grande Underground Water Basin in the State of New Mexico under the Water-Use Leasing Act, NMSA 1978, Sections 72-6-1 through 72-6-7 (1967, as amended through 2019) (WULA).
3. The Application contemplates a WULA lease[1] of 2,400 afa historically diverted for irrigation, municipal, industrial, commercial, and recreation purposes within 32,020.56 acres of land

[1] For the sake of clarity, the leasing arrangement proposed under the Application is referred to as the lease to differentiate it from the Santa Teresa Lease upon which it is based.

owned by various entities, as stated in the declarations and amended declarations and as shown on maps on file under OSE File No. LRG-3150-E et. al.

4. As set forth in the Application, the lease is set for a duration of ten years between the Applicants beginning June 1, 2019, and ending June 1, 2029, for mining, milling, reclamation, dust control, wash water, and domestic use associated with the Copper Flat Mine within 2,190 acres of land owned by New Mexico Copper Corporation (NMCC) and federal public land managed by the United States Bureau of Land Management (BLM).
5. The Application, as published,[2] proposes to lease the water rights associated with the following move-from wells that are located on land owned by various entities:

Well	Location
LRG-3150	X=1,520,564 Y=308,005 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 46.3"N, 106° 38' 9.6"W (WGS84)
LRG-7279	X=1,500,545 Y=287,453 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 47' 22.19"N, 106° 42' 0.69"W (WGS84)
LRG-3150-S-2	X= 1,507,032 Y=307,777 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 43.6"N, 106° 40' 46.5"W (WGS84)

[2] Point of diversion locations are identified on OSE applications using one of three methodologies: NM State Plane (NAD83), UTM (NAD83), or Latitude/Longitude (WGS84). The Application used the UTM (NAD83) methodology to identify the location of the move-from wells. The published notices, in contrast, used both of the other methodologies. This facilitated a comparison with the well locations in the existing Permit (hereinafter defined), which used the NM State Plane (NAD83) methodology. There were slight discrepancies between the location descriptions used in the Permit and in the published notices.

LRG-3150-S-3	X= 1,514,249 Y=311,101 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 16.8"N, 106° 39' 22.9"W (WGS84)
LRG-3150-S-4	X= 1,501,699 Y=310,883 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 14.1"N, 106° 41' 48.4"W (WGS84)
LRG-3150-S-6	X= 1,518,442 Y=312,662 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 32.4"N, 106° 38' 34.4"W (WGS84)
LRG-3150-S-11	X= 1,514,159 Y=319,950 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 52' 44.3"N, 106° 39' 24.4"W (WGS84)
LRG-3150-S-12	X=1,511,311 Y=310,191 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 7.6"N, 106° 39' 57.0"W (WGS84)
LRG-3150-S-14	X=1,514,946 Y=315,933 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 52' 4.6"N, 106° 39' 15.1"W (WGS84)
LRG-3150-S-15	X= 1,523,398 Y=305,833 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 24.9"N, 106° 37' 36.6"W (WGS84)
LRG-3150-S-16	X= 1,516,019 Y=305,536 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 21.7"N, 106° 39' 2.2"W (WGS84)
LRG-3150-S-17	X= 1,503,445 Y=299,788 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 49' 24.4"N, 106° 41' 27.7"W (WGS84)
LRG-3150-S-19	X=1,517,196 Y=308,638 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 52.5"N, 106° 38' 48.7"W (WGS84)
LRG-3150-S-20	X= 1,525,201 Y=304,493 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 11.7"N, 106° 37' 15.7"W (WGS84)
LRG-3150-S-22	X=1,527,513 Y=303,912 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 6.1"N, 106° 36' 48.9"W (WGS84)
LRG-3150-S-24	X=1,501,621 Y= 316,013 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 52' 4.9"N, 106° 41'49.6 "W (WGS84)
LRG-3150-S-25	X=1,499,400 Y=317,247 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 52' 17.0"N, 106 ° 42'15.4 "W (WGS84)

LRG-3150-S-26	X= 1,506,097 Y=312,481 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 30.1"N, 106° 40' 57.5"W (WGS84)
LRG-3150-S-27	X=1,512,245 Y=314,095 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 46.3"N, 106° 39' 46.3"W (WGS84)
LRG-3150-S-31	X=1,520,649 Y=305,144 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 18.0"N, 106° 38' 8.5"W (WGS84)
LRG-3150-S-32	X=1,510,962 Y=310,604 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 11.7"N, 106° 40' 1.0"W (WGS84)
LRG-3150 POD 36	X=1,502,663 Y=302,726 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 49' 53.4"N, 106° 41' 36.9"W (WGS84)
LRG-3150 POD 41	X=1,505,736 Y=286,985 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 47' 17.8"N, 106° 41' 0.5"W (WGS84)
LRG-3150 POD 42	X=1,502,917 Y=307,622 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 50' 41.9"N, 106° 41' 34.2"W (WGS84)
LRG-3150 POD 45	X=1,505,001 Y=309,929 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 4.8"N, 106° 41' 10.1"W (WGS84)
LRG-3150 POD 46	X=1,497,033 Y=313,914 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 43.9"N, 106° 42' 42.7"W (WGS84)
LRG-3150 POD 49	X=1,497,298 Y=311,224 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 31° 51' 17.3"N, 106° 42' 39.5"W (WGS84)

6. The Application, as published,[3] also proposes to commence the diversion of 2,400 afa of groundwater at the following move-to wells located on federal public land managed by the BLM.

[3] The move-to well locations were identified in the Application using the Latitude/Longitude (WGS84) methodology while they were identified in the published notices using the UTM (NAD83) as well as the Latitude/Longitude (WGS84) methodology used in the Application. There were slight discrepancies between the location descriptions used in the Application and in the published notices, and the point of diversion (POD) numbers had slightly different nomenclature.

Well	Location
LRG-4652	X=1,291,335 Y=718,314 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 32° 58' 10.14"N, 107° 23' 17.64"W (WGS84)
LRG-4652-S	X=1,292,054 Y=716,041 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 32° 57' 47.73"N, 107° 23' 8.91"W (WGS84)
LRG-4652-S-2	X=1,288,755 Y=718,032 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 32° 58' 7.07"N, 107° 23' 47.88"W (WGS84)
LRG-4652-S-3	X=1,289,990 Y=716,449 NAD 1983 State Plane New Mexico Central FIPS 3002 Feet Latitude/Longitude: 32° 57' 51.54"N, 107° 23' 33.18"W (WGS84)

7. The move-to wells are also located within Sections 25, 26, 27, 34, 35, and 36, Township 15 South, Range 7 West, NMPM. Wells LRG-4652, LRG-4652-S, LRG-4652-S-2, and LRG-4652-S-3 are located northeast of Hillsboro, NM and may be found approximately 0.27 mile southeast, 0.70 mile southeast, 0.39 mile southwest, and 0.55 mile south of the intersection of Alto Road, also known as County Road B028, and State Highway 152, respectively. Wells LRG-7279 and LRG-3150, et al., will be retained for other rights.
8. On February 20, 2020, Water Rights Division (WRD) received an Affidavit of Publication confirming that legal notice of the Application was published for three consecutive weeks in the *Sierra County Sentinel* on December 20, 2019, December 27, 2019, and January 3, 2020.

9. On January 8, 2020, WRD received an Affidavit of Publication reflecting that legal notice of the Application was published for three consecutive weeks in the *Las Cruces Sun News* on December 21, 2019, December 28, 2019, and January 4, 2020.
10. On February 20, 2020, WRD received an Affidavit of Publication confirming that legal notice of the Application was published for three consecutive weeks in the *Las Cruces Bulletin* on December 27, 2019, January 3, 2020, and January 10, 2020.
11. Applicants' request for preliminary approval of the Application under WULA was not granted by OSE.

ii. History of Copper Flat Mine

12. The Copper Flat Mine project underlying the Application was developed by Quintana Minerals in 1980, and construction was finished in 1982.
13. The Mine is located west of the Rio Grande.
14. The Mine briefly operated for three or four months before it was shut down by Quintana Minerals in the middle of 1982.
15. NMCC acquired the Copper Flat Mine property in 2009.
16. NMCC is a wholly- owned subsidiary of THEMAC Resources.
17. Applicant Tulla Resources is financing the project to reopen NMCC's Copper Flat Mine property and owns a majority interest in THEMAC Resources.
18. In re-opening the Mine, NMCC intends to use the same basic footprint as the Mine utilized in 1982.
19. The move-to wells (also referred to herein as the production wells), which are located eight miles to the east of the Mine site, were used during the brief production period, after which the surface equipment was removed.

20. Jeff Smith, the Chief Operating Officer of THEMAC Resources, testified that "[NMCC has] several right-of-way permits through the BLM, one of which covers the . . . main production wells . . .". [4]

21. NMCC has inspected and tested the wells, which will require maintenance and cleaning before resumption of use at the Mine.

22. In addition, NMCC will re-use the original Copper Flat Mine water transmission pipeline and the original high-voltage power line.

23. Pre-production removal of the overburden to expose the orebody was done in 1981. There exist two or three benches in the area that can serve to provide ore to the concentrator.

24. The original tailings storage facility used by Quintana Minerals will be re-used after it is brought up to current standards and expanded to accommodate additional material.

25. The BLM conducted an environmental review of the Mine project pursuant to the National Environmental Policy Act (NEPA), which culminated in the issuance of a Final Environmental Impact Statement (FEIS) in August 2019. (This process is referred to herein as either the NEPA process or the FEIS process.)

26. In connection with the FEIS, the BLM issued a Record of Decision reflecting its decision and requirements (Record of Decision).

27. The BLM evaluated the plan proposed by NMCC (Proposed Action), two operational alternatives, and a no action alternative. The BLM ultimately approved Alternative 2 (herein so called), which entails 12 years of mining at a rate of 30,000 tons per day.

[4] However, the documentation offered by NMCC consists of a fully-executed right-of-way grant with a termination date of December 31, 2021, and a partially-executed (by NMCC) right-of-way grant with a termination date of December 31, 2023. Because the existence of a current right-of-way was not contested, the Hearing Examiner finds, based solely on Mr. Smith's testimony, that a BLM grant of right-of-way to the move-to-wells currently exists.

28. The Record of Decision on the FEIS recognizes and defers to the authority of the State Engineer over the measurement, appropriation, and distribution of the public waters of New Mexico.

29. BLM also concluded in its FEIS that NMCC's appropriation of water for the Copper Flat Mine project is subject to the OSE's determination that any diversion would not impair existing water rights, is not contrary to conservation of water within the state, and is not detrimental to the public welfare of the state.

30. In addition to the diversions requested in the Application, NMCC plans to divert an additional 861 afa of water under existing water rights associated with Wells LRG-4652, LRG-4652-S, LRG-4652-S-2, and RG-4652-S-3 for purposes of the Copper Flat Mine project.

31. A separate adjudication determined that 861.84 afa associated with the four production wells located at the defunct Copper Flat Mine open pit site, Well Nos. LRG-4652, LRG-4652-S, LRG-4652-S-2, and RG-4652-S-3, was put to beneficial use for mining and mineral processing.

iii. Procedural Background

32. The Application was protested by seventy-two (72) initial protestants. Fifty-seven (57) of those protestants were dismissed pursuant to the Hearing Examiner's *Order Dismissing Protests for Failure to Provide a Current Mailing Address and/or Submit a Hearing Fee* issued on July 2, 2021.

33. The number of protestants was eventually reduced to the protestants present at the Evidentiary Hearing following the Hearing Examiner's *Order Granting Motion to Dismiss Individual Protestants and Dona Ana Mutual Domestic Water Consumers Association* issued on

September 6, 2022. However, many of the former individual protestants participated in the hearing through the Percha-Animas Watershed Association.

34. The remaining protestants are as follows: Elephant Butte Irrigation District; Turner Ranch Properties, LP; Santa Teresa Land, LLC; Paseo Del Norte, LL; Westpark I, LLC; Hillsboro Pitchfork Ranch, LLC; Gila Resources Information Project; Percha-Animas Watershed Association; the Rio Grande Chapter of the Sierra Club; Camino Real Regional Utility Authority; and the New Mexico Interstate Stream Commission.

35. The Elephant Butte Irrigation District (EBID) is a political subdivision of the State of New Mexico with the statutory responsibility of operating and maintaining the New Mexico portion of the Rio Grande Project.

36. Santa Teresa Land, LLC, Paseo del Norte, LLC, and Westpark I, LLC (collectively, STL Parties) are protestants in the proceeding and participated in the Evidentiary Hearing.

37. Turner Ranch Properties (Turner) owns the Ladder Ranch, which is engaged in agricultural irrigation; bison, big game, and bird hunting; ecotourism; and conservation of native species, education, and research. Ladder Ranch's southern boundary is the northern boundary of the former mine site on the Copper Flat property.

38. The Hillsboro Pitchfork Ranch, LLC (Hillsboro), is a limited liability corporation and a working cattle ranch. The ranch is located near the town of Hillsboro, and it borders the Copper Flat Mine site immediately to the east.

39. The Percha-Animas Watershed Association (PAWA) is an unincorporated association of persons organized for the purpose of protecting the watersheds of Percha Creek and Las Animas Creek in Sierra County, New Mexico.

40. The Gila Resources Information Project (GRIP) is a non-profit organization established to "protect and nurture human communities by safeguarding the natural resources that sustain us all; and to safeguard natural resources by facilitating informed public participation in resource use decisions."

41. The Rio Grande Chapter of the Sierra Club (Sierra Club) is the state chapter of a national non-profit environmental organization, established "to practice and promote the responsible use of the Earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out those objectives." (Hillsboro, PAWA, GRIP, and the Sierra Club are collectively referred to as the Hillsboro Protestants).

42. The Camino Real Regional Utility Authority (CRRUA) is a regional utility formed via a joint partnership agreement between the City of Sunland Park and Dona Ana County to supply water and wastewater services to the border area as well as Santa Teresa Industrial Park, Santa Teresa communities, and the City of Sunland Park. CRRUA and Applicant Santa Teresa Capital, LLC claim joint ownership of substantial water rights under OSE File No. LRG-3150-F.

43. The New Mexico Interstate Stream Commission (NMISC) is an agency of the State of New Mexico charged with administration of all interstate water compacts for New Mexico, and with protecting, conserving, and developing the waters and streams of the State.

44. Numerous orders were issued by the Hearing Examiner prior to the commencement of the Evidentiary Hearing, including those listed below.

45. On December 20, 2022, the Hearing Examiner issued an *Order Denying Elephant Butte Irrigation District's Motion for Summary Judgment on Issues of Availability of Water and*

Impairment, which held that (a) the Application is for a permit to change points of diversion and place and purpose of use under WULA and is not an application for a new appropriation; (b) the Supreme Court of New Mexico does not recognize *per se* impairment; and the impairment standard under WULA requires a comparative determination: *i.e.* that the proposed use and location of use "will not impair any existing right to a greater degree than such right is, or would be, impaired by the continued use and location of use by the owner." NMSA 1978, § 72-6-5(A)(1) (2003).

46. On December 20, 2022, the Hearing Examiner issued an *Order Denying Motion for Summary Judgment that Dismisses Protestants for Lack of Standing*, holding that as a matter of law, any person, firm, or corporation or other entity objecting to the granting of an application under WULA will be contrary to the conservation of water within the state or detrimental to the public welfare of the state and showing that the objector will be substantially and specifically affected by the granting of the application shall have standing to file objections or protests.

47. On December 20, 2022, the Hearing Examiner issued an *Order Partially Granting Motion for Sanctions*, ordering Applicants to cease any and all *ex parte* communications with the State Engineer.

48. On December 20, 2022, the Hearing Examiner issued an *Order Partially Granting Protestant Turner Ranch Properties' Motion for Partial Summary Judgment Regarding the Scope of the Application*, which held that: (a) any permit issued under the Application as submitted and published shall be limited to a period ending on June 1, 2029; and (b) no evidence or testimony shall be presented and no determination shall be made in this matter regarding whether specific water rights, including without limitation, those held by Jicarilla Apache Nation, would impact the issue of impairment or can or should be used for offset purposes. In addition, this order

denied Turner's request for partial summary judgment regarding the validity and amount of the proposed move-from water rights.

49. On March 6, 2023, the Hearing Examiner issued an *Order Denying Applicants' Objections to Witnesses and Motion to Strike*, which held that, subject to objections timely made at the evidentiary hearing: (a) PAWA may, through its identified fact witnesses, present testimony and evidence regarding the issue of impairment of its members' existing water rights; and (b) the Hillsboro Protestants may, through their identified fact witnesses, present testimony and evidence regarding the interests of the respective organizations that they represent; provided, however, that as non-parties, these witnesses should not be allowed to testify as to their personal interests, except to the extent that these personal interests align with the interests of the respective organizations that they represent.

50. On March 6, 2023, the Hearing Examiner issued an *Order Granting Applicants' Objections to Protestant Elephant Butte Irrigation District's Notice of Filing Additional Exhibits for Hearing on the Merits*. This order excluded the "Consent Decree Supporting the Rio Grande Compact" (together with two appendices) and any testimony regarding same from the evidentiary hearing in this matter. Such exclusion was without prejudice to a motion to take administrative notice of any approved decree as a final ruling of the United States Supreme Court.

51. On March 6, 2023, the Hearing Examiner issued an *Order Partially Granting Applicants' Motion in Limine, Motion to Strike, and Objections to Testimony*. This order denied Applicants' motion to exclude portions of the expert reports and related testimony of witnesses James R. Kuipers, P.E, Jim Riesterer, P.G., and Mustafa D. Chudnoff, concerning use of water for full mining operations. This order also denied Applicants' motion to exclude portions of

the expert reports and related testimony of Mr. Chudnoff concerning the water impacts of excavating the open pit mining operation. The order granted Applicants' motion to prohibit Turner and Hillsboro Protestants from introducing any portion of any exhibit or offering any testimony of Mr. Chudnoff expressing an opinion on climate change or on the biological needs of flora near the Copper Flat Mine because Mr. Chudnoff was not disclosed as an expert on these topics nor were these topics included in the description of his anticipated testimony in Turner's and the Hillsboro Protestants' witness disclosures.

52. On March 6, 2023, the Hearing Examiner issued an *Order Partially Granting Motion to Strike Rebuttal Report of James Riesterer*, which granted Applicants' motion to strike any portion of any exhibit or any testimony by Mr. Riesterer expressing an opinion on the subject of public welfare of the state because Mr. Riesterer was not disclosed as an expert on that subject in the STL Protestants' witness disclosure. The order denied Applicants' motion to strike portions of Mr. Riesterer's expert report as improper rebuttal evidence, without prejudice to a renewed motion after certain of Applicants' exhibits are admitted into evidence.

53. On March 6, 2023, the Hearing Examiner issued an *Order Partially Granting EBID's Motion in Limine Regarding Exclusion of Expert Testimony*, which held that: (a) Applicants' witness Paul Saavedra shall be recognized as an expert in water rights administration with specific expertise to provide opinion testimony on the issues of public welfare of the state and conservation of water within the state; and (b) Applicants' witness Steve Finch shall not testify on public welfare of the state or conservation of water within the state because Mr. Finch was not disclosed as an expert on these topics nor were these topics included in the description of his anticipated testimony in Applicants' witness disclosure.

54. On May 25, 2023, the Hearing Examiner issued an *Order on Reconsideration of Order on Climate Change*, which confirmed that Turner's and Hillsboro Protestants' witness disclosures failed to disclose Mr. Chudnoff's anticipated testimony on the subject of climate change and further held that Mr. Chudnoff is not qualified to provide opinion testimony on climate change.

55. On July 24, 2023, the Hearing Examiner issued an *Order Granting Turner Ranch Properties' Motion to Request the Hearing Examiner to Take Administrative Notice of the Third Interim Report of the Special Master Recommending Entry of the Consent Decree in TX v. NM, No. 141 Orig.* Pursuant to this order, the Hearing Examiner took administrative notice of the Third Interim Report of the Special Master filed with the United States Supreme Court on July 3, 2023 (Third Interim Report). In the Third Interim Report, the Special Master recommended that the Court grant the motion filed by the states of Colorado, New Mexico, and Texas to enter the proposed consent decree entered into among such states (Consent Decree) as full settlement of the states' claims and dismissal of the original action. The Consent Decree is an addendum to the Third Interim Report and is thereby made a part thereof. Accordingly, the Hearing Examiner has taken administrative notice of the Consent Decree as well. In addition, the Hearing Examiner rescinded the blanket exclusion, set forth in an order dated March 6, 2023, of any testimony regarding the Consent Decree.

B. NATURE AND EXTENT OF THE LEASED WATER RIGHTS

56. The water rights associated with LRG-3150-E are under a permit issued on March 28, 2013, for the diversion and consumptive use of 2,596.47 afa for irrigation, municipal, industrial, commercial, and recreational purposes within 32,020.56 acres of land located in the southern New Mexico on the west side of the Rio Grande in the general area of Sunland Park (Permit).

57. The Permit authorizes 28 points of diversion.

58. The Permit lists the following priority dates: September 13, 1971, for 2,500 afa; December 31, 1970, for 27.34 afa; and June 15, 1966, for 69.13 afa.

59. The Application and the Notice identify 27 wells as the move-from points of diversion. They exclude LRG-3150-S28, which is among the 28 wells listed in the Permit.

60. Applicants' expert in water rights administration, Paul Saavedra, states in his expert report (Saavedra Report) that LRG-3150-S28 was replaced by LRG-3150-POD 45. However, both wells are listed in the Permit, which accounts for the discrepancy in the number of move-from wells between the Application, the Notice, and the Saavedra Report, on the one hand, and the Permit on the other hand.

61. However, an unresolved discrepancy remains between the wells identified in the Permit and the wells identified in the Application and the Notice. The Permit includes LRG-3150-S13 (which was not included in the Application or the Notice) but does not include LRG-3150 POD 49 (which was included in the Application and the Notice). Although the Saavedra Report states that LRG-3150 POD 49 replaced LRG-3150-S13, the record does not contain a permit authorizing LRG-3150 POD 49.[5] Notably, WRD's water rights administration expert Cheryl Thacker included neither LRG-3150-S13 nor LRG-3150 POD 49 among the move-from wells, which total 26 wells, listed in her expert report.[6] Nonetheless, neither WRD nor

[5] NMCC Exhibit 10 (consisting of 511 pages) was disclosed as the water rights file for LRG-3150-E.

[6] Applicants' witness Gilbert Mesa testified that LRG-3150 POD 49 "used to be called S-13" and was among the wells that have been used to serve the water right under LRG-3150-E. However, this well was not used to substantiate beneficial use of the water right, which was based on water pumped in 2011. See discussion below.

any other party has expressly argued that the move-from wells differ from those stated in the Application and the Notice.

62. The Notice states that the move-from wells "will be retained for other rights."

63. The Permit does not require offsets for pumping at the listed points of diversion.

64. Applicant Santa Teresa Capital is the sole owner of the water rights for 2,400 afa of groundwater under LRG-3150-E. The remaining 196.47 afa were transferred to IHR Holdings, LLC and are accounted for under OSE File No. LRG-3150-EA.

65. OSE has not required the water pumped under LRG-3150-E to be metered separately by purpose of use.

66. Verde Realty Operating Partnership, L.P. (Verde Realty), a former owner of the water rights, filed with the OSE a proof of beneficial use of the water rights on January 5, 2012 (PBU), declaring that a diversion amount of 2,596.47 acre-feet and a consumptive use amount of 2,596.47 acre-feet of water was applied to beneficial use from January 1, 2011, through December 31, 2011.

67. The PBU describes the water use as primarily for a commercial turf farm and as construction water for various projects in the area.

68. The PBU states that meter readings support a total 2011 pumping amount of 2,569.73 acre-feet, which is 99% of the total right, and requests OSE to issue a license for the full amount of the right, or 2,596.47afa.

69. The OSE has not issued the requested license. However, on March 28, 2013, the OSE approved an application for permit to change the location of a well and issued the Permit for the full 2,596.47 afa without any further requirement to file a proof of beneficial use.

70. Gilbert Mesa, former Vice President of Development for Verde Realty, testified on behalf of Applicants to substantiate the beneficial use of water on the move-from property.

71. Mr. Mesa stated that the water under LRG-3150 has been used for only two purposes--turf irrigation and construction projects involving large amounts of earth work.

72. According to Mr. Mesa, in 2010, 1,665.74 acre-feet were pumped solely to irrigate 411 acres of turf, which constitutes the diversion and use of approximately 4.05 acre-feet per acre. This testimony was supported by a 2005 aerial photograph that Mr. Mesa described as depicting turf circles totaling approximately 411 acres at the move-from location. Mr. Mesa stated that no water was pumped for construction purposes in 2010.

73. Mr. Mesa testified that water use for turf irrigation in 2011 would have been very similar to water use for turf irrigation in 2010, because the same amount of land was irrigated in both years. He also testified that use of water for construction began in 2011. He then determined the amount of water used for construction by subtracting the 1,665.74 acre-feet attributable to turf irrigation from the total 2011 pumping amount of 2,569.75[7] acre-feet, resulting in 904.01 acre-feet.

74. The Hearing Examiner finds Mr. Mesa's testimony to be credible.

Accordingly, the Hearing Examiner finds that in 2011, the subject year of the PBU, 1,665.74 afa was used for turf irrigation and 904.01 afa was used for construction, resulting in a total of 2,569.75 afa.

[7] There is a slight discrepancy between 2,569.73, the 2011 total pumping amount reflected in the PBU, and 2,569.75, the 2011 total pumping amount reflected in a spreadsheet prepared by Mr. Mesa.

C. WHETHER THE PROPOSED USE AND LOCATION OF USE IS A BENEFICIAL USE

75. Water is utilized at various stages of mining and milling activities and is a critical component of a copper mining operation.

76. Mineral development requires mining at the location of the mineral deposit.

77. In addition to completing the BLM's NEPA review process, NMCC has also obtained air quality permits from the New Mexico Environment Department (NMED) as well as a groundwater discharge permit that will expire in December 2025.

78. NMCC must fulfill various additional regulatory requirements before it can begin operations at the Mine, including obtaining the necessary water rights and related permits,[8] a mining permit, a dam safety permit,[9] a renewed groundwater discharge permit, and financial assurance in the form of a reclamation bond. These matters are pending.[10]

79. In addition, Mr. Smith testified that the acquisition of project financing and the creation of a project development plan and detailed engineering plans are still pending and need to be complete before construction of the project can start.

[8] See Section I.D.iii.c and Section I.D.iv.g below regarding permits authorizing the use of water rights to offset depletions caused by the Application.

[9] The permit to be issued by OSE's Dam Safety bureau is sometimes referred to in the record as the "tailings dam permit." For clarity and consistency, this permit is referred to herein as the "dam safety permit."

[10] See Section I.C.v below regarding the potential need for a mine dewatering permit.

80. The Feasibility Study Update prepared by THEMAC Resources and issued on April 9, 2020, frames the matter as NMCC needing to complete various items "before *making the decision* to proceed with construction of the project."[11] (emphasis added)

81. Mr. Smith confirmed that the decision to proceed with the construction of the project has not been determined yet.

82. According to Mr. Smith, it will take two years to build the crusher and the mill required for the Mine project.

i. Water Rights

83. BLM's Record of Decision states that "[t]he [OSE] will ultimately determine the availability of adequate water rights and all operations must be conducted in a manner consistent with the requirements of the OSE."

84. It further states that "[t]he approval of this project is conditional on the proponent acquiring the necessary water rights to operate the mine," and "[s]urface disturbance will not be allowed until sufficient water rights are acquired."

85. Similarly, Applicants' witness, Mr. Smith, stated that NMCC's settlement with the New Mexico Mining and Minerals Division (MMD or the Division) requires NMCC to secure 6,095 afa of water rights before operation of the Mine can begin.

86. Mr. Smith made clear that NMCC cannot "turn a shovel of dirt" until it has acquired the totality of these water rights.

[11] These items are acquisition of water rights, financial assurance, project financing, obtaining the mine permit and dam safety permit, and developing a project development plan and detailed engineering.

87. Mr. Smith acknowledged that the Application would not provide the amount of water necessary to operate the mine, but it would be "about 53 percent."[12] Acknowledging further that the 2,400 afa that is the subject of the Application is for a maximum of ten years, Mr. Smith sees the Application as "one step in the process," and that he is "operating on the assumption" that NMCC will get more water rights and file another application.

88. Mr. Smith testified that no other sources of water are under contract or a letter of intent for the remaining water necessary for operation.

89. NMCC has not filed any applications with the OSE for the remaining necessary water.

90. James Kuipers, Turner's and the Hillsboro Protestants' expert,[13] opined that the amount of water required by MMD and the BLM creates "a real question as to the overall project viability."

91. Mr. Chudnoff testified it is "highly unlikely" that NMCC will be able to obtain the additional water rights necessary in time to put the water to beneficial use by 2029.[14]

ii. Mining Permit

92. NMCC submitted a final application for a mining permit for the Copper Flat Mine to the MMD in 2018, the Division found the application to be "technically approvable" in June 2018, and the Division held a hearing on the application in November 2018.

93. The MMD has not issued a proposed mining permit.

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[12] The total applied for, 2,400 afa, plus then-existing rights in the amount of 861 afa, equals 3,261 afa, which (looking solely at the afa requirements and not the duration of the rights) is 53.5% of the 6,095 afa total needed.

[13] Mr. Kuipers testified as an expert in hard-rock mine engineering, mining and minerals, management, regulatory permitting of mines, and mine closure and reclamation.

[14] As discussed in Section I.C.vii, the lease ends on June 1, 2029.

94. On June 5, 2020, the MMD and NMCC entered into settlement agreement, incorporated into a Director's Order, stating that the Division will not issue a permit for the mine until, among other requirements,[15] NMCC demonstrates that it has the water necessary to operate and reclaim the mine.

95. Specifically, the settlement agreement provides that the MMD will not issue a mining permit until NMCC demonstrates:

> that it has secured the approximately 6,095 acre feet per year of water from the production wells and the open pit necessary (in the absence of an alternative water recovery plan that may be hereafter submitted and approved)[16] to operate and reclaim the Copper Flat Mine, as proposed in the [permit application] either through resolution in NMCC's favor of the determinations of water rights currently pending in State of New Mexico ex rel. Office of State Engineer v. EBID et al., Case No. A-1-CA-37258, or by securing the necessary amount of valid water rights . . . or lease of water rights for a term sufficient to cover the period of operation and complete reclamation of the Copper Flat Mine.[17]

96. The proposed period of mine operation is 12 years, and Mr. Smith testified that the proposed period of reclamation is 14 years.

97. Mr. Smith explained that the 12-year plan is based on the copper reserve, but the plan could be extended if additional resources could be brought into the reserve. He stated that the mining operations could easily last 20 years or a bit more.

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[15] These include submitting a supplemental financial assurance proposal. See 19.10.6.605(F) NMAC. Although there is an apparently incorrect cross-reference in the settlement agreement, it appears that NMCC may, as an alternative to providing the supplemental financial assurance, demonstrate the adequacy of other water rights leased or held by NMCC for specified offset purposes. (See Section I.D.iii.c for a discussion of offsets for depletions to the Rio Grande and Caballo Reservoir.)

[16] It is unclear what an "alternate water recovery plan" would encompass, but in the settlement agreement, MMD reserved the discretion to treat it as a modification of the application that requires technical review.

[17] In the absence of the permit application, the full extent of water that MMD would consider necessary for reclamation purposes is unknown.

98. Mr. Smith further testified that rapid refill of the mining pit would occur during the first year after mining operations cease, and NMCC plans to use 2,800 acre-feet of water from the production wells for this purpose.[18]

99. In addition, the settlement agreement provides that NMCC must also demonstrate that it has obtained or is likely to obtain the approval of OSE of any transfer of water rights to the production wells or open pit.

100. NMCC must also demonstrate that it has obtained or is likely to obtain a dam safety permit from OSE for the tailings storage facility.

101. The settlement agreement further provides that if the above-referenced OSE permits or approvals are not obtained before the issuance of the mining permit, they must be obtained before mining activities can begin.

102. The settlement agreement also provides that the MMD, in its discretion, may require a second public hearing on the application.

iii. Dam Safety Permit

103. The Feasibility Study Update shows the status of the "New Dam Permit" to be issued by "NMOSE Dam Safety Bureau" as "Initiate with TSF detail design," thus indicating that the design has not yet been completed.

104. Mr. Kuipers testified that tailings storage facilities throughout the world are typically designed in accordance with global industry standards. In his experience, the process of complying with these standards, including review by an independent technical review board, could cause a delay of at least several years.

[18] The settlement agreement refers to "approximately 2,200" acre-feet needed for this purpose.

105. It was Mr. Kuipers' understanding that the design process had not been initiated as of the Evidentiary Hearing.

106. As of Evidentiary Hearing, NMCC had not initiated the application process with the OSE.

iv. Groundwater Discharge Permit

107. The groundwater discharge permit for the Copper Flat Mine, issued December 21, 2018, has a term of seven years and expires in December 2025.

108. Although the groundwater discharge permit can be renewed, the renewal can be contested, "just the same as the original permit."

109. The NMED Secretary's decision on a groundwater discharge permit renewal can be appealed to the Water Quality Control Commission.

110. The Water Quality Control Commission's decision on groundwater discharge permit renewal can be appealed to the courts.

111. Mr. Smith testified that the appeals of initial groundwater discharge permit for the Copper Flat Mine resulted in a one to two-year delay.

v. Mine Dewatering

112. According to the FEIS, a 5.2-acre lake occurs in the existing pit, and in September 2013, the depth of the pit lake was 39 feet. The FEIS concluded that "[d]ewatering of the pit lake would be necessary prior to mining and would be necessary throughout the life of the mine to facilitate mining operations." The FEIS then provides details regarding the method, volume, and timing of the dewatering as well as proposed use of the water pumped from the pit.

113. However, the FEIS does not list a mine dewatering permit among the permits that NMCC must acquire before commencing operations. It is also not listed in the Feasibility Study Update.

114. Mr. Kuipers testified that he was not surprised by its absence because he had not encountered this requirement in the "25 plus" years that he has been working on these issues in New Mexico.

115. Neither the need for nor the intent of NMCC to file an application for a mine dewatering permit is adequately developed in the record. There is also no evidence regarding the timing of obtaining such a permit.

vi. Financial Assurance

116. Under the Water Quality Act, NMCC must post financial assurance to ensure proper reclamation and closure of the mine. Financial assurance must be approved by NMED.

117. NMED initially issued the groundwater discharge permit without any specific requirements for financial assurance. However, on appeal, the Water Quality Control Commission added a condition to the permit providing: "The Applicant shall not cause any disturbance associated with new mining under [the discharge permit] unless and until all agencies involved in negotiations on the Applicant's financial assurance have approved final and complete financial assurance (including, but not limited to, the type of financial assurance, the discount rate and the escalation rate) to adequately cover all aspects of closure and remediation (if needed) for the entire period needed."

118. As of the Evidentiary Hearing, NMCC did not have financial assurance in place.

vii. Term of Lease

119. In the Application, Applicants requested a permit term running from June 1, 2019, to June 1, 2029.

120. The public notice of the Application stated that the permit would be "for a duration of ten years under a leasing plan between the applicants beginning June 1, 2019, and ending June 1, 2029."

121. The Hearing Examiner, ruling on a partial summary judgment motion, found that the Application is "self-limiting," and that "the term of the requested permit cannot exceed June 1, 2029." The order contemplated that the Application could be amended, but in that event, notice would need to republished to reflect the amended termination date.

122. Mr. Smith testified that the typical time period for opening a new copper mine in the U.S. is "10 plus years." With the permitting, planning, and engineering, "it's a lot of work to bring one of these online."

123. Mr. Smith acknowledged during his testimony that the permit at issue in this matter was important to NMCC in terms of attracting investment in the mine, even if the water sought to be appropriated cannot be put to use for some time.

124. NMCC is advertising to potential investors that "project de-risking" is nearly complete, and that it has acquired four out of five "major" permits, with the fifth permit at an "advanced stage."

125. Mr. Smith acknowledged that "project de-risking" refers to the risk that the mine will not acquire the necessary permits to begin operation.

126. The Hearing Examiner finds that it is unlikely that NMCC will meet all prerequisites to the commencement of Mine operations prior to the expiration of the lease. Less than 46 months remain before the expiration of the lease on June 1, 2029. Although this time frame might be sufficient for the completion of the prerequisites if they were pursued concurrently, the record

shows that at least some of the prerequisites either must or will occur in a prescribed sequence, each with its own time frame.

127. Critically, NMCC must meet various prerequisites before MMD will issue the mining permit. The mining permit is among various requirements that must be met before NMCC will decide to proceed with construction. Finally, construction and any other previously-unfulfilled requirements must be completed before operations can commence.

128. The remaining prerequisites to obtaining the mining permit are significant and time-consuming: (a) NMCC must identify and secure additional water rights, which, when combined with water rights in hand, must total 6,095 afa for the period of Mine operations, and whatever (presumably lesser) amount is needed for reclamation; (b) NMCC must demonstrate to MMD that the water rights meet the requirements of the settlement; (c) NMCC demonstrate to MMD that it has obtained or is likely to obtain approval by OSE of any transfer of water rights to the production wells or the open pit, which would at least require NMCC to have filed an appropriate application with the OSE and made some progress within the OSE administrative process; (d) NMCC must demonstrate to MMD that it has obtained or is likely to obtain a dam safety permit from the OSE, which would at least require NMCC to have developed the detailed plans needed for the application, filed the application with the OSE, and made some progress within the OSE administrative process; and (e) a second evidentiary hearing may be required before the mining permit is issued.

129. Obtaining the mining permit is one of the items that NMCC has identified as necessary before it makes the decision to proceed with construction, as is the acquisition of water

rights.[19] Obtaining the dam safety permit is another item listed as necessary before NMCC makes the decision to proceed with construction; accordingly, if this permit was not finalized prior to the issuance of the mining permit, it would need to be completed. The other items, according to the Feasibility Study Update, are obtaining financial assurance and project financing and developing a project development plan and detailed engineering.

130. If NMCC decides to proceed, NMCC will begin the two-year process of constructing the project. All other requirements not previously completed, including obtaining the necessary OSE water rights permits for mining operations together with permits for any required surface water rights for use as offsets, [20] and obtaining a renewed groundwater discharge permit from NMED must be finalized before operations can begin.

D. WHETHER THE PROPOSED USE AND LOCATION OF USE WOULD IMPAIR ANY EXISTING WATER RIGHT TO A GREATER DEGREE THAN THE CONTINUED USE AND LOCATION OF USE BY SANTA TERESA CAPITAL

i. General Geography and Hydrogeology

131. The Application's move-from location is near Santa Teresa, NM and within the Mesilla Valley Administrative Area (MVAA).

132. The move-to location near the Copper Flat Mine is 90 miles directly northwest of the move-from location and approximately 110 miles upstream.

[19] It is unclear whether NMCC considers the acquisition of required OSE permits to be part of this requirement.

[20] See Section I.D.iii below regarding depletions of and required offsets to Caballo Reservoir and the Rio Grande. Section I.D.iii also addresses the existence of the JAN Lease. See Section I.D.iv regarding depletions to Las Animas Creek, Seco Creek, and Percha Creek and the need for tributary offsets.

133. Stated another way, the move-to point of diversion is near the top of the Lower Rio Grande stream system, while the move-from point of diversion is near the bottom of the Lower Rio Grande stream system.

134. Dr. Gilbert Barth, NMISC's expert in groundwater hydrology, testified that the geology of the move-to well location is a piedmont slope with the Black Mountains to the west and the Rio Grande to the east. As a result of erosion, materials moved off the Black Mountains to form layers that dip to the east. Water largely flows through these layers from west to east.

135. The move-to wells are located within a geological feature known as the Palomas Graben, the nature and extent of which is disputed by the parties' hydrological experts.

136. A 1981 study by Wilson et al. identified two north-trending geomorphic lineaments approximately 1.5 miles apart and located approximately five miles west of the Rio Grande. These lineaments have been interpreted as either graben-bounding faults or a buried ancestral channel (or paleochannel) of the Rio Grande. The most recent geologic map, which was prepared by geologist Daniel Koning in 2015, does not represent these lineaments as a graben-bounding faults but rather as a series of segmented north-striking faults that have experienced both west-down and east-down normal displacement.

137. The move-to wells are completed into the Santa Fe Group aquifer of the Palomas Basin in the Lower Rio Grande Underground Water Basin.

138. The move-to wells were drilled to a depth of approximately 960 feet.

139. Dr. Barth estimated that the Santa Fe Group aquifer is "a couple thousand feet thick."

140. Overlying the Santa Fe Group aquifer is the alluvium or so-called shallow aquifer. Dr. Barth testified that a recognized study from Wilson et al. and data from the monitoring wells associated with the Mine project indicate that the alluvium in the area north of the move-to

wells is perched above a clay layer. Another area of clay is down gradient, or to the east of the production wells, and it serves as a confining unit that provides pressure for artesian wells in that area.

ii. Hydrologic Modeling

141. Applicants' hydrologic modeling expert, Mike Jones,[21] used a model developed by John Shomaker and Associates in 2014 (JSAI 2014 Model) for his analysis of the effects of the proposed transfer at the move-to location. This model was relied upon by the BLM in reaching its ROD and FEIS.

142. For the purposes of analyzing the impacts of the proposed production wells to the Santa Fe Group aquifer, nearby wells, Las Animas Creek, and the Rio Grande, Mr. Chudnoff's consulting company developed a multi-layer, superposition groundwater flow model (MDCC Model).[22] However, this model was heavily criticized by Mr. Jones, Dr. Zemlick, and Dr. Barth for various reasons, including its failure to include substantial available data, inadequate documentation, lack of peer-review and calibration, and mistakes and inconsistencies. Both Mr. Jones and Dr. Zemlick considered the Chudnoff model to be inappropriate for assessing the hydrological effects of the Application.

143. Dr. Katie Zemlick, OSE's expert in hydrology and hydrologic modeling, used a modified, superposition version of the JSAI 2014 Model (the OSE Superposition Model) developed by Eric Keyes for her analysis of the effects at the move-to location. She explained that OSE

[21] Mr. Jones testified as an expert in hydrologic modeling of groundwater and surface water flow systems.

[22] Mr. Chudnoff used the JSAI 2014 Model to calculate the effects on springs and nearby wells located on Hillsboro Pitchfork Ranch and Ladder Ranch caused by the excavation of the open pit and the resulting lowering of the water table. As discussed in Section II.D, the Hearing Examiner makes no findings regarding these claimed effects.

commonly uses superposition models "to make a reasonably conservative assessment of potential hydrologic impacts due to proposed actions."

144. Dr. Barth did not develop his own model to analyze the Application but offered a critique of other models. He criticized Applicants' model as needing further refinement and testing. In particular, he opined that the model is insufficient to address the impacts on Rio Grande Project water supply. [23] Nonetheless, he stated that he preferred the Applicants' model over Mr. Chudnoff's model due to his assessment of the latter's conflicts and inconsistencies. With regard to WRD's model, Dr. Barth admitted that he had not "dissected" it, and he only had a vague understanding that it was a modified, superposition version of Applicants' model.

iii. Impacts on the Rio Grande and Caballo Reservoir

145. One of the differences between Applicants' and WRD's hydrologic analyses is the treatment of the so-called "graben effect." Dr. Barth, in his critique of the JSAI 2014 Model, testified that the model represents the Palomas Graben as a high hydraulic conductivity feature that enables water to flow inward from the north and south ends, which are represented as general head boundaries. This flow would be an exception to the general west-to-east flow that he described for the region. In Dr. Barth's opinion, the modeling of the Palomas Graben is a simplification of the physical system and is unsubstantiated in its extent.

146. Mr. Jones testified that there is "a water flow induced from the north of the model boundary that doesn't come directly from the Rio Grande, and so there's some question about exactly how to handle it." He testified that he used the Glover-Balmer equation to determine an attenuated Rio Grande effect, while the OSE took the more "conservative"

[23] See Section I.F.iv for a discussion of the need to identify the real-time impacts on the Rio Grande Project water supply.

approach of treating all the effects as effects on the Rio Grande. He admitted that "there's no obvious answer to what's right here."

147. Dr. Zemlick confirmed that WRD treated depletions to the general head boundaries associated with the Palomas Graben as depletions to the Rio Grande. Another difference between Applicants' and WRD's hydrologic analyses is WRD's attribution, in the absence of a pumping schedule, of all move-to diversions to the move-to well closest to the river. This approach considers the potential maximum effects of the pumping. Using this approach, she testified that the anticipated maximum impacts from the proposed pumping associated with the Application[24] on the main stem of the Rio Grande and Caballo Reservoir would be 1,026 afa.

a. General Impacts

148. Mr. Jones determined that the Rio Grande streamflow effect at the move-to location will reach a maximum decrease of about 1,000 afa soon after the 10-year transfer period ends. He allocated approximately 600 afa of this decrease "above Caballo" and approximately 400 afa "below Caballo."

149. Dr. Barth agrees that there will be effects on Caballo Reservoir from pumping 2,400 afa from the production wells.

150. Mr. Jones also calculated the net Rio Grande streamflow effect by subtracting the total increase in the streamflow at the move-from wells from the decrease in streamflow at the move-to wells. For the move-from portion of the analysis, he used the OSE Lower Rio Grande

[24] In accordance with WRD practice, Dr. Zemlick did not analyze the full project amount of 6,100 afa, noting that a cumulative analysis would be performed in connection with a future application for the additional water needed for the project.

superposition model (OSE LRG Model). He predicted a net increase in Rio Grande streamflow for the period of transfer, then a temporary decrease in Rio Grande streamflow peaking in year 12 followed by a reduction to zero about 20 years after the transfer period.

151. Mr. Saavedra testified that turning off the wells at the move-from location and turning on the wells at the move-to location "cancel each other out essentially. So, you've taken care of the impairment issue on the Rio Grande."

152. Both Dr. Zemlick and Dr. Barth disagreed with this analysis.

153. Although Dr. Zemlick also included a net effect calculation in her expert report,[25] she testified that the cessation of pumping at the move-from location would produce effects at the move-from location only.

154. Dr. Barth stated that "in terms of wet water in the river . . . the move-from accretions cannot change what's happening up in Caballo."

155. Due to the considerable distance between the move-to and move from points of diversion, the depletions that occur upstream as a result of the transfer cannot be offset by the accretions that occur downstream as a result of turning off the move-from wells during the transfer.

156. This is because water may not be available to intervening water rights owners between the move-from and move-to locations due to the additional upstream depletions. [26]

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[25] Dr. Zemlick calculated a maximum net depletion to the Rio Grande of 615 afa in the tenth year of pumping the move-to wells. She also found that increased depletions to the river relative to a no-change scenario would result for an additional 27 years after the ten-year lease. For her analysis, she attributed cessation of pumping to the move-from well farthest from the river. Like Mr. Jones, Dr. Zemlick used the OSE LRG Model to calculate the move-from effects. Unlike Mr. Jones, however, she accounted for residual depletions that would continue to occur after the move-to wells cease pumping.

[26] Mr. Saavedra opined that impairment issues in the 90 miles between Caballo Reservoir and the move-from location would be taken care of by the proposed Consent Decree; however, he admitted that in the absence of the Consent Decree, the remedy would be to obtain "water above Caballo" for offset, thus requiring a new application. Following the Evidentiary Hearing, the United States Supreme Court rejected the Consent Decree. See discussion in Section I.F.iv below.

157. Therefore, the Lower Rio Grande cannot be viewed as a unified, cohesive, hydrologic unit, or in common vernacular, "a bathtub."

b. Impacts to Rio Grande Project Water Supply

158. The Rio Grande Project is a United States Bureau of Reclamation Project that straddles the New Mexico/Texas state line and is the primary source of water for agriculture in the Lower Rio Grande. It was authorized by Congress in 1905.

159. The Rio Grande Project also delivers water to the country of Mexico under an international agreement signed in 1906 (1906 Convention) and in accordance with project operations procedures.

160. The Rio Grande Project is served by two major water storage reservoirs known as Elephant Butte Reservoir and Caballo Reservoir. The United States Bureau of Reclamation owns and operates both reservoirs.

161. Since 1938, Rio Grande Project water supply has been released from the Caballo Reservoir.

162. The Rio Grande Project serves 90,640 authorized irrigated agriculture acres within EBID, and 69,010 authorized acres in El Paso County Water Improvement District No. 1. In other words, 57% of the Rio Grande Project acreage is in New Mexico and 43% is in Texas.

163. There is no dispute that the Application, if granted, would cause depletions to the Rio Grande both above and below Caballo Dam.

164. Depletions to the Rio Grande above Caballo Dam that are not offset would reduce Rio Grande Project water supply.

165. No party provided modeling of the real-time impacts on such supply.

166. Under the 1906 Convention, the United States shall deliver to Mexico a total of 60,000 afa, except in the case of "extraordinary drought or serious accident to the irrigation system in the

United States." Under those circumstances, the amount of water delivered to Mexico is "diminished in the same proportion as the water delivered to lands under said irrigation system in the United States."

167. EBID's hydrology expert,[27] Dr. J. Phil King, testified that the "extraordinary drought" clause has been in effect "most of the last decade."

168. Depletions to the Rio Grande above Caballo Dam that are not offset would reduce water allocation to Mexico during periods of extraordinary drought or serious accident to the irrigation system in the United States.

c. Offsets

169. NMCC pledged to provide offsets to mitigate any impacts on the main stem of the Rio Grande.

170. Ms. Thacker testified that she is aware of 15 permits at most on the Lower Rio Grande that require offsets, and that none of those offset requirements have been met.

171. Ms. Thacker stated that this is because acquisition of surface water offsets on the Lower Rio Grande would require cooperation from EBID, and there is no mechanism in place at this time for coordination with EBID to take place. EBID's status as a protestant in this matter makes it even more doubtful that NMCC can secure the necessary cooperation from EBID for offsets on the main stem of the Rio Grande.

172. As part of the BLM proceeding, NMCC committed to fully offset depletions to the Rio Grande resulting from its mining operations. Specifically, NMCC committed to using and

[27] Dr. King testified as an expert in riparian and irrigation system hydrology, water resources management, and Rio Grande Project organization, operations, and accounting.

extending the JAN Lease (hereinafter defined), securing another lease of equally effectual water; or securing and permanently retiring water rights that physically affect the river today.

173. The Jicarilla Apache Nation and NMCC executed a lease effective as of May 12, 2015 (JAN Lease).[28]

174. The surface water to be leased pursuant to the JAN Lease is San Juan/Chama Project surface water.

175. The JAN Lease is not part of the Application or the Notice.

176. NMCC has not submitted an application to the OSE for approval of the use of water pursuant to the JAN Lease.

177. NMCC has not submitted an application to the OSE for approval of the use of any other water for offsets.

178. Prior to the Evidentiary Hearing, the Hearing Examiner ruled that no evidence or testimony shall be presented and no determination shall be made in this matter whether specific water rights, including without limitation, Jicarilla Apache Nation's water, would impact the issue of impairment or can or should be used for offset purposes. As support for this ruling, the Hearing Examiner found that the use of water as an offset requires an application and publication of notice before such a determination can be made.

179. At the Evidentiary Hearing, the Hearing Examiner allowed testimony regarding use of the JAN Lease for wildlife mitigation purposes.

[28] The JAN Lease refers to NMCC as "New Mexico Copper Corporation, Inc."

d. Summary

180. The Hearing Examiner finds that the Application will cause depletions to the Rio Grande and Caballo Reservoir that will reduce Rio Grande Project water supply; that the maximum decrease will be 1,026 afa; that the record does not support a finding on the real-time effects on such supply; that the predominant impact of these depletions is experienced upstream of the move-from location, and such impact upstream of the-move from location is not and would not be experienced as a result of the continued use and location of use of the subject water rights by the current owner; that accretions resulting from the discontinuation of pumping the move-from wells and do not offset the depletions caused by the commencement of pumping the move-to wells; and that it would be unlikely for NMCC to obtain water rights *in the Lower Rio Grande* to use as offsets for these depletions. [29]

181. The Hearing Examiner makes no finding regarding the suitability of the JAN Lease for use as offsets to the Rio Grande and Caballo Reservoir depletions caused by the Application.

iv. Impacts on Tributaries

182. The only analysis in Mr. Jones' expert report regarding the Application's impact on tributaries was finding "a small (maximum 15-ac-ft/yr) component of reduced riparian evapotranspiration along Animas Creek." At the Evidentiary Hearing, Mr. Jones testified that this figure also includes Percha Creek.

183. Mr. Jones' expert report presents this data as part of the impact on the Rio Grande as opposed to streamflow depletions to Las Animas Creek or Percha Creek.

[29] See Section I.F.iv regarding the need for real-time or daily offsets to mitigate the effects of depletions on the timing of storage restrictions under the Rio Grande Compact.

184. Dr. Zemlick testified that the anticipated maximum depletions from the proposed pumping associated with the Application on the tributaries are: 300 afa on Las Animas Creek; 20 afa on Percha Creek; and 2 afa on Seco Creek.

a. Hydrological Models

185. Dr. Zemlick testified that the JSAI 2014 Model assumes there is no surface water on Las Animas Creek and is therefore incapable of showing surface water depletions to the creek.

186. Mr. Jones acknowledged that the JSAI 2014 Model does not present the data as streamflow depletions.

187. There are perennial, intermittent, and ephemeral reaches of Las Animas Creek.

188. The JSAI 2014 Model analyzes the ephemeral reaches as losses to riparian areas.

189. Mr. Jones explained that this approach was taken because Las Animas Creek is not perennial throughout.

190. According to a 2013 technical memorandum prepared by Mr. Jones on December 5, 2013 (Technical Memorandum), "[l]ocations of perennial and intermittent reaches are not simulated in the model."

191. The Technical Memorandum states:

> Seasonal boundary conditions (monthly runoff inputs) would be required to distinguish between perennial and intermittent reaches within the model. These were not used, for simplicity of computing effects, and because information does not exist to represent the surface flow component of the shallow groundwater-surface water runoff from storm events, seasonal runoff from snowmelt, diversion of surface flows, discharge from flowing wells, pumping of shallow wells and consumption by riparian and irrigated vegetation.
>
> The model therefore treats the shallow system along Animas Creek as a single system, computing changes in flow to the system and changes in discharge ([evapotranspiration], baseflow, wells) from it.

192. Mr. Jones admitted that he has modeled predicted stream flows for non-perennial stream systems in the past, but he was not asked to do so here.

193. Unlike the JSAI 2014 Model, the OSE Superposition Model assumes that there is surface water in the creek and that the creek is hydrologically connected to the pumping wells.

194. On direct examination, Mr. Jones stated that he had reviewed the OSE Superposition Model and that he had no issues with the model other than an issue that occurred when OSE incorporated its database of water rights in the area.[30]

195. On rebuttal, Mr. Jones changed his position and testified that the JSAI 2014 Model is "not the best model to assess the impacts [on the tributaries], but the superposition models are totally inappropriate for assessing the impacts because the tributary—the main tributary we're talking about, the tributaries are not perennial."

b. Streamflow in Las Animas Creek

196. Mr. Jones testified that Las Animas Creek is perennial in certain areas. He relied on a map showing perennial reaches of Las Animas Creek based on a survey conducted by Intera "showing what Intera measured to be flowing that day."

197. The map shows "flowing reaches June 2011" for both Las Animas Creek and Perchas Creek.

[30] Mr. Jones incorporated 46 drain cells in Applicants' model to represent flowing wells. According to Mr. Jones, when OSE developed the superposition model, they incorporated their full database of water rights in the area and treated all wells (including flowing wells) as wells with pumps and assumed the wells were pumping at the maximum permitted rate. The "only mistake" OSE made, according to Mr. Jones, was failing to delete the original 46 drain cells. Mr. Jones stated that the effect is "not huge," but it results in an overcalculation of depletion (by approximately 100 afa at peak) and an undercalculation of drawdown. Mr. Jones did not specify the extent of the undercalculation, and he admitted that he did not rerun his well impairment analysis using this information. As discussed in Section I.D.iii.c below, Mr. Jones characterized the OSE model as more accurate than Applicants' model for the purpose of assessing impacts on wells of other ownership.

198. The flowing reaches of Las Animas Creek depicted on the map are north of the production well field.

199. Mr. Chudnoff reported that on a three-day field visit in 2021, excepting an 800-foot reach on Ladder Ranch, Las Animas Creek was found to be flowing at multiple locations between its confluence with Cave Creek and the Lower Animas Ditch diversion, a distance of approximately 13 miles.

200. Craig Cathey, WRD's expert in water rights administration, also testified about the presence of surface water flows in Las Animas Creek. Mr. Cathey has evaluated numerous water rights applications on Las Animas Creek, supervised the drilling of several artesian wells on the lower reaches of the creek, and ensured compliance with the Lower Rio Grande Water Master District metering order along the creek.

201. Mr. Cathey testified that he has "been up there [on Las Animas Creek] quite a lot over my career with [OSE]."

202. Mr. Cathey stated that, in his experience, Las Animas Creek is "usually flowing" except for "the far lower reaches."

203. Mr. Cathey also explained that a gage installed by the OSE and described as the "Lower Las Animas Creek Gage" on the OSE website measures surface water deliveries to the Lower Las Animas Creek ditch irrigation system and is not a measurement tool for Las Animas Creek.

204. Mr. Chudnoff's expert report noted that this ditch diverts from the south bank of the Las Animas Creek at the downstream end of the intermittent reach. In his report, he noted that per OSE reports, the ditch diverted an average of 1.32 cubic feet per second over 112 days between May 12, 2020, and October 31, 2020.

205. Mr. Cathey testified that there have been numerous hardware failures at this station resulting in "long spells where the station was down and out of service." He also referred to the gage as a "dirty gage" because it pulls in a lot of debris.

206. According to Mr. Cathey, these problems could explain why OSE reports from this station show "months of zeros."

c. FEIS Analysis

207. The FEIS concluded that "there is no direct hydrologic connection between the shallow underlying perched aquifer that sustains the surface flow and the deep aquifer that would be pumped for mine operations."

208. OSE participated in part of the FEIS process.[31] However, "during preparation of responses to public and agency comments on the [draft] EIS, OSE was unable to fully cooperate with the BLM because issues regarding NMCC's water rights were in litigation. As a result, the BLM could not rely on OSE to contribute their expertise to the determination of impacts to groundwater or surface water supplies for the Proposed Action and alternatives."

209. Because OSE was unable to fully participate in the EIS process, "BLM propose[d] to impose terms and conditions on their approval of the [Mining Plan of Operations] to address these impacts; see Section 3.6.3 of the FEIS."

210. Section 3.6.3 of the FEIS makes clear that "NMCC's appropriation of water is thus subject to the OSE's conclusion that any water appropriation by NMCC would not impair existing

[31] Applicants produced an unsigned letter dated January 12, 2018, from Eric Keyes of the OSE to David J. Ennis of the Mining Act reclamation Program stating that "[a]t present, [the JSAI 2014 Model] is the best available tool in the determination of mine Impacts." It also states, "In any kind of modeling as new information comes available, the modeling can change." Dr. Zemlick testified that the OSE Superposition Model was developed to address Mr. Keyes' concerns about the JSAI 2014 Model.

water rights, is not contrary to conservation of water within the State, and is not detrimental to the public welfare of the State."

211. Concerns were also raised by other cooperating agencies during the FEIS process regarding many of these issues. Specifically, as part of the FEIS process, Matt Wunder, Chief of the New Mexico Department of Game and Fish's Ecological and Environmental Planning Division, stated that "The department remains dubious that the [JSAI] report's findings of limited hydrologic connection between the [Santa Fe Group] and the alluvial groundwater system provide sufficient security and mitigation to preclude impacts to wildlife and wildlife habitats from drawdown of groundwater levels."

212. Dr. Zemlick opined that the FEIS is not applicable to water rights administration.

d. Riparian System

213. Dr. Zemlick and Dr. Barth both stated that the riparian system along Las Animas Creek is hydrologically connected to the Santa Fe Group—the formation from which the production wells would draw water.

214. Dr. Barth also noted that Percha Creek may receive discharge from the Santa Fe Group.

215. Dr. Barth described the geologic work from Daniel Koning concluding that there is a fault upstream of the riparian zone that pushes water upward from the Santa Fe Group into the Las Animas Creek alluvium. Downstream of the fault, a layer of clay underlies the alluvium portion of the Las Animas Creek stream bed and limits interaction with the Santa Fe Group.

216. Dr. Barth stated that Koning's report, which is the most recent geologic work in this area, "builds on" the U.S. Geological Survey Report cited in the FEIS as Wilson, et al.

217. Dr. Barth testified that pumping in the Santa Fe Group could decrease the propensity for water to move up into the Las Animas Creek alluvium.

218. Dr. Zemlick stated that there appears to be enough welling from the Santa Fe Group underneath the riparian system to be a source of water that allows the system to persist.[32]

219. Max Yeh, the Executive Director of PAWA, testified that he walks along Las Animas Creek and photographs the landscape and wildlife there. He stated that the trees along the creek include Arizona sycamore, Arizona walnut, and cottonwood trees. He described a photograph taken in the early fall showing yellowish cottonwoods and dark brown Arizona sycamores.

220. Dr. Zemlick stated that a riparian ecosystem is definitionally adjacent to surface water flows.

221. Dr. Zemlick also stated that a riparian system of the type observed along Las Animas Creek would not be able to persist for hundreds of years if feeding solely from an isolated, perched water source.

e. Surface Water Rights

222. Cheryl Thacker, WRD's expert in water rights administration, testified that there are existing surface water rights on Las Animas Creek for irrigation of at least 62 acres of land, not including land which is also irrigated using supplemental groundwater.

223. Dustin Long, manager of the Ladder Ranch, also stated that Ladder Ranch alone has 22 acres which may be irrigated using only surface water from Las Animas Creek and 150 acres which may be irrigated with a combination of surface and groundwater.

[32] Dr. Zemlick did not cite Koning's work in her expert reports and appeared not to base her opinion directly on Koning's work.

f. Mesilla Valley Administrative Area Guidelines

224. Under the Application, the move-from wells are within the MVAA, while the move-to wells and tributaries are outside the MVAA.

225. However, WRD evaluated the surface water effects of the transfer under the Mesilla Valley Administrative Area Guidelines (MVAA Guidelines) due to the geographic, geologic, and hydrologic similarities between the move-from and move-to locations.

226. The MVAA Guidelines make clear that every application will be evaluated on a case-by-case basis and judged on the unique facts of the application.

227. Ms. Thacker testified that the MVAA Guidelines are merely a guide rather than a binding rule, and that using the guidelines from one basin for a nearby basin may be appropriate for water rights administration.

228. The MVAA Guidelines state that the Rio Grande stream system is fully allocated and existing rights may not be impaired by proposed appropriations.

229. Under the MVAA Guidelines, a surface water depletion of less than 0.10 acre-foot in any year due to a proposed appropriation will be deemed acceptable and no offset of this impact will be required during that year.

230. The MVAA Guidelines further state that surface water depletions that impact the surface waters beyond acceptable depletions must be completely offset if the depletion is 3% or more of the total amount of water diverted and consumed. This threshold for offsets was established "[b]ecause of the uncertainty of hydrogeologic characteristics."

231. Dr. Zemlick calculated total tributary depletions of 322 afa (300 afa for Las Animas Creek, 20 afa for Percha Creek, and 2 afa for Seco Creek), which collectively represent 13.4% of the 2,400 afa proposed for transfer.

232. Ms. Thacker acknowledged that in isolation, the depletion amounts for Percha Creek and Seco Creek do not meet the 3% threshold for required offsets under the MVAA Guidelines.

g. Offsets

233. Applicants acknowledge that the Application will require offsets and represent that NMCC is committed to acquiring any necessary offsets.

234. Ms. Thacker testified that it was virtually impossible for NMCC to acquire these offsets on the tributaries, particularly on Las Animas Creek.

235. Max Yeh, executive director of the Percha Animas Watershed Association, testified that he is unaware of any PAWA members who are willing to consider selling water rights to NMCC.

236. Daniel Lorimer, who sits on the Executive Committee of the Southern Group of the Rio Grande Chapter of the Sierra Club, testified that he is unwilling to sell his water rights and is unaware of any member of the Rio Grande Chapter of the Sierra Club who are considering selling their water rights to NMCC.

237. Robert Cunningham and Kathy McKinney, owners of the Hillsboro Pitchfork Ranch, testified that Hillsboro Pitchfork Ranch would not sell any water rights to NMCC.

238. Mr. Long testified that Turner would not be willing to sell any of its water rights to NMCC for offset purposes.

239. Ms. Thacker noted that it is impractical for NMCC to acquire the necessary offsets on Las Animas Creek and the other tributaries because "it would require that the mine purchase surface water rights and clearly the surface water rights owners, the vast majority of the protestants, are the owners of those surface water rights. So that's virtually impossible to secure those."

240. Under the MVAA Guidelines, if offset requirements are not achievable, the application will be denied.

h. Use of Supplemental Wells

241. The Las Animas Creek Hydrographic Survey Report establishes that 89% of the lands included in the survey are irrigated by wells alone or some combination of wells and surface water.

242. Based on the Las Animas Creek Hydrographic Survey Report, only 8% of the acreage under the Lower Las Animas Ditch is irrigated only by surface water

243. The existence of supplemental wells demonstrates that the flows on Las Animas Creek are insufficient to meet demand.

244. When surface water is unavailable on Las Animas Creek, persons with permitted supplemental wells have the option of using their wells to irrigate their land.

245. Conversely, persons with water rights to divert from Las Animas Creek who do not have permitted supplemental wells must rely solely upon the creek to exercise their water rights.

i. Summary

246. The Hearing Examiner finds that: Las Animas Creek has intermittent and ephemeral reaches and has an inadequate supply to serve the water rights sourced from it; on the other hand, the creek, as a whole, cannot accurately be characterized as a dry creek bed; the existence of (a) perennial reaches, (b) a riparian system along a portion of its reaches, and (c) water rights sourced, sometimes exclusively, from the creek, support a finding that Las Animas Creek has significant, relatively consistent surface water flows; the riparian system along Las Animas Creek is hydrologically connected to the Santa Fe Group; the OSE Superposition Model addresses the effects of the Application to surface water in a more

reasonable, conservative manner than the JSAI 2014 Model; based on the more accurate modeling, the Application would cause depletions to the tributary surface flows in the amounts of 300 afa on Las Animas Creek, 20 afa on Percha Creek, and 2 afa on Seco Creek; these impacts are not and would not be experienced as a result of the continued use and location of use of the subject water rights by the current owner; and it is unlikely that NMCC would be able to obtain water rights on the tributaries that would offset the depletions caused by the Application.

v. Wells of Other Ownership

a. Morrison Guidelines

247. Applicants analyzed the impact of the Application on wells of other ownership by using the Morrison Guidelines, which are OSE's guidelines for the assessment of drawdown.

248. The Morrison Guidelines state that, due to uncertainty and data limitations, guidelines for assessing drawdown estimates for impairment determinations should include a reasonable level of conservatism and should be applied on a case-by-case basis.

249. The Morrison Guidelines provide a *de minimis* drawdown allowance over 40 years based on the average saturated thickness of the applicable aquifer. The applicable 40-year drawdown allowances are 1.0 foot for an average aquifer thickness of 0 to 50 feet; 2.0 feet for an average aquifer thickness of greater than 50 to 200 feet; and 4.0 feet for an average aquifer thickness of over 200 feet.

250. This allowance is used to identify the wells (in addition to wells owned by protestants, regardless of their location) for which total drawdown impacts should be analyzed. Stated technically, wells within the radius of the contour interval that corresponds to the drawdown allowance should be analyzed for total drawdown.

251. The Morrison Guidelines state that "[i]f data are insufficient to determine the current thickness [of the aquifer,] the thickness may be based on the average water columns obtained from well logs."

252. The Morrison Guidelines provide a drawdown allowance for temporary use of groundwater for greater than five years up to ten years equal to 65% of the 40-year allowance.

b. Saturated Thickness of Aquifer

253. The average saturated thickness of the Santa Fe Group aquifer in the vicinity of the move-to wells is in excess of 200 feet, to which the Morrison Guidelines assign a *de minimis* 40-year drawdown allowance of 4.0 feet and a *de minimis* five-to-ten year drawdown allowance of 2.6 feet.

254. The average saturated thickness of the shallow aquifer or alluvium was in dispute.

255. Dr. Barth testified that depth of the shallow aquifer as described in various publications is in the 20 to 60 foot range. Similarly, the FEIS states that "[i]n the area near the project well field, the valley of Las Animas Creek is locally underlain by alluvial materials in the range of 20-60 feet thick."

256. In contrast, Mr. Jones' expert report states that the depth of the shallow aquifer along Animas Creek ranges from 60 to 120 feet. Mr. Jones testified that by "depth" he was referring to the total formation thickness, not the range of saturated thickness. [33]

257. Mr. Jones' expert report also states that wells under 75 feet deep in areas along Las Animas and Percha Creeks were assumed to be completed in the shallow aquifer.

[33] Mr. Chudnoff explained that the saturated thickness of an aquifer, which is the portion that contains water, is less than the overall thickness of the aquifer.

258. Mr. Jones testified that all wells under 75 feet in depth were removed from the drawdown analysis because model results indicated a drawdown of less than 2.6 feet.

259. At the Evidentiary Hearing, Mr. Jones admitted that he used some "guesswork" when attributing wells to certain depths in the model layer representing the shallow alluvium and that the location of clay layers underlying Las Animas Creek is not clear.

260. Mr. Jones also admitted that he incorrectly calculated the Morrison Guidelines' five-to-ten year drawdown allowance to find no well of other ownership was critically impacted by the Application. He stated that the five-to-ten year drawdown allowance for wells drilled in an aquifer with an average saturated thickness of 60 to 120 feet would be 1.3 feet. Instead, he calculated the five-to-ten year drawdown allowance as 2.6 feet, which is applicable to aquifers with an average saturated thickness greater than 200 feet. As a result, his analysis of critical wells excluded all wells that experienced a predicted drawdown of less than 2.6 feet.

261. Mr. Chudnoff testified that Applicants' error was even greater based on Mr. Chudnoff's conclusion that the average saturated thickness of the alluvial aquifer is 50 feet or less; therefore, the appropriate drawdown allowance in wells of other ownership resulting from pumping the production wells for 10 years would be .65 feet under the Morrison Guidelines. Accordingly, Mr. Chudnoff opined that Applicant would need to re-examine all the wells with a predicted drawdown that exceeds .65 feet.

262. Mr. Chudnoff based his conclusion regarding the average saturated thickness of the alluvial aquifer on a number of sources, including Shomaker's modeling of the alluvial aquifer as a 50-foot thick aquifer; Davie and Spiegel's conclusion the thickest point of the aquifer was 50 feet; and Minton's well analysis showing a saturated thickness of 30 to 40 feet.

263. In addition, he based his conclusion on well logs from the monitoring wells located north of the move-to wells. As an example, he explained that the depth at which the driller hit clay when drilling well M-11—approximately 33 feet—represented the limit of the alluvial aquifer. Mr. Chudnoff then subtracted the depth to water of seven feet to determine a saturated thickness of less than 30 feet.

264. The Morrison Guidelines base drawdown allowances on the *average* saturated thickness of the applicable aquifer. The preponderance of the evidence supports a saturated thickness that ranges between 20 and 60 feet; accordingly, the Hearing Examiner finds that for the purposes of the Morrison Guidelines, the *average* saturated thickness of the shallow aquifer is less than 50 feet.

c. Applicants' Endorsement of WRD's Analysis

265. Under the Morrison Guidelines, total drawdown is estimated by calculating the sum of drawdown due to the proposed diversion, drawdown due to the exercise of existing water rights, and self-induced dynamic drawdown.

266. Dr. Zemlick calculated the drawdown due to the proposed diversion based on ten years of pumping the production wells at 2,400 afaand found that 49 wells of other ownership would exceed the drawdown allowance of 2.6 feet.

267. For these wells, Dr. Zemlick also calculated the drawdown due to the exercise of existing water rights by using "the full exercise of existing water rights in the area." In this regard, she testified that the OSE Superposition Model includes wells of other ownership within the active model area, including flowing wells, whereas the JSAI 2014 Model includes flowing wells and wells owned by Applicants but not wells of other ownership.

268. Mr. Jones' expert report states that Applicants determined drawdown due to the exercise of existing water rights from historical levels measured in LRG-4652 (one of the move-to wells) and from model-simulated drawdown due to pumping the existing NMCC water rights of 862 afa from the move-to wells.

269. Dr. Zemlick's rebuttal report reflects that she also calculated the dynamic drawdown for the 49 wells she analyzed and then combined the three drawdown measures to determine the total drawdown for each well.

270. The Morrison Guidelines further provide that if the total drawdown exceeds either the economical drawdown constraint or the physical drawdown constraint, the well is predicted to have less than a 40-year life and is classified as a critical well.

271. Dr. Zemlick testified that, following the Morrison Guidelines, two wells would exceed a drawdown constraint and thus become "critical."

272. However, Dr. Zemlick testified that neither of the two critical wells was reasonably completed. A well is deemed reasonably completed if drilled at a reasonable depth in comparison to the water column of other wells in the surrounding area.

273. Dr. Zemlick therefore opined that the owners of these wells could drill a new and deeper well that would effectively capture their water right.

274. In addition, one of these wells was over 70 years old.

275. The Morrison Guidelines by their own terms attempt to preserve water for wells that are 40 years or less in age.

276. Mr. Jones acknowledged that WRD's analysis of effects on wells of other ownership is more accurate than that of the Applicants:

I would take OSE's. They had more data going into it. They have a database of the existing water rights . . . and so they . . . replace[d] our more crude treatment of flowing wells. They actually built in the entire basin and everybody's rights. And so . . . [their] use of the Morrison guidelines is . . . more updated than ours.

277. Like Mr. Jones' analysis, Dr. Zemlick's analysis of impacts to wells of other ownership used a drawdown allowance of 2.6 feet.[34] Dr. Zemlick testified that analysis under the Morrison Guidelines depends on "the type of aquifer the proposed well is pumping from and, specifically, its saturated thickness at the time." Her testimony did not specifically address whether the saturated thickness of the aquifer into which wells of other ownership are completed should be considered.[35]

d. Replacement of Impaired Wells

278. Mr. Smith testified that if wells were deemed to be impaired by the pumping of the move-to wells, NMCC would be prepared to replace the impaired wells. He further stated his understanding that a plan of replacement would require an application.

279. Ms. Thacker testified that the Application is not an application filed under the Mine Dewatering Act.

[34] For her expert report, Dr. Zemlick applied the MVAA Guidelines' drawdown allowance, which is an average of 1.0 foot per year, finding that the allowance was not exceeded. She effectively abandoned that analysis in her rebuttal report, in which she applied the Morrison Guidelines to updated well information.

[35] Dr. Zemlick acknowledged that she reran the drawdown allowance during the Evidentiary Hearing in light of expert testimony "that the drawdown allowance applied to wells in layer one of the model had not been conservative enough as—as is represented in our guidelines." However, WRD withdrew its Motion Seeking Leave to Disclose Additional Exhibit due to its discovery that declared rights subject to litigation were mistakenly included in the analysis. Accordingly, Dr. Zemlick's supplemental analysis is not in the evidentiary record.

iv. Climate Change

280. No expert witness was disclosed and qualified as an expert witness on climate change.

281. Dr. Zemlick stated in her rebuttal report that the OSE "does understand and acknowledge that climate change will have impacts on the availability of water resources in the state."

282. A 2006 report issued by the Office of the State Engineer (OSE Report)[36] states: "Water is so critical to the New Mexico's quality of life and vitality that any impacts to our water resources reverberate across the social, economic and environmental fabric of the State. The anticipated impact of climate change is particularly important since New Mexico is highly dependent on climate-sensitive natural resources (e.g. snowpack, streamflow, forests) and on natural resource-based economic activities (e.g. agriculture, recreation and tourism)."

283. The OSE report further states: "New Mexico's water future will be determined by water demand and availability of our water resources. Climate change will likely have a significant impact on both."

E. WHETHER THE PROPOSED USE AND LOCATION OF USE WOULD BE CONTRARY TO THE CONSERVATION OF WATER WITHIN THE STATE

284. Mr. Saavedra testified that he defines conservation as "using water as efficiently as possible."

285. He continued that, "they're using—trying to use their water as efficiently as possible and that's how I made my determination for conservation of water."

286. Mr. Saavedra's expert report contains only one reference to conservation, stating as follows:

[36] N.M. Office of the State Eng'r, *The Impact of Climate Change on New Mexico's Water Supply and Ability to Manage Water Resources* (July 2006).

The approval of the application is not contrary to the conservation of water, because NMCC is aware of practical water use in New Mexico and dedicated to using water for copper mining without waste of the water resource. The permittee will use water with the highest and best technology available to ensure conservation of water to the maximum practical extent, including, but not limited to OSE approved meters, and timely meter reports.

287. Mr. Saavedra determined that NMCC is "doing everything they can to use their water rights wisely."

288. Mr. Smith provided more detail regarding NMCC's plans for water use and conservation at the Copper Flat site. He stated that the proposed mining facility will conserve water in multiple ways, including recycling pumped water collected from a tailings impoundment[37] for re-use in processing.

289. Mr. Smith stated that the main use of water at the mine site will be to form a slurry, which allows for the separation of copper and other minerals from the surrounding rock.

290. Operation of the Copper Flat Mine will produce some 125 million tons of waste tailings, in the form of a liquid slurry, from its milling operations. The tailings will "contain a considerable amount of water" when they are produced. The tailings slurry will be pumped through a pipeline to the tailings impoundment located on the mine site.

291. Mr. Smith stated that water from the tailings impoundment would be reused to form new slurries. Overall, NMCC plans to recycle 70% of the water it uses, and 90% of that amount is from tailings.

[37] In the FEIS, this impoundment is referred to as the tailings storage facility or TSF. At the hearing, Mr. Smith agreed that it is actually a disposal facility. For consistency, the facility is referred to herein as the tailings impoundment or tailings dam.

292. Mr. Smith also stated that NMCC intends to prevent waste by spraying a surfactant on roads to minimize the amount of water needed for dust control, placing all pipelines in lined ditches, and having alarm systems that will alert NMCC to water leaks.

293. Mr. Kuipers disagreed with the assertion that NMCC is doing everything possible to minimize its use of water.

294. Mr. Kuipers opined that NMCC's proposed management of its mine tailings would not be using water as efficiently as possible because other available technologies, such as filtered tailings, are less water-intensive.

295. He noted that the BLM identified filtered tailings as a preferred alternative for the Rosemont Copper Mine in Arizona because it was a "water saving measure." He did not offer a numerical quantification of the savings, stating only that "the amount of water you may save may not be huge" but it would be "a significant amount."

296. Mr. Kuipers' opinion regarding filtered tailings was not further developed in testimony, nor was it included in his expert report.

297. In its review of the Copper Flat Mine, the BLM considered and rejected the filtered tailings process described by Mr. Kuipers, also known as dry stacking. As the BLM observed in the FEIS Executive Summary:

> Dry stack tailings was eliminated as an alternative because it would incur increased operating costs, *it requires additional water consumption for dust suppression*, and using this alternative means that a failure in the filter plant would require the entire plant to shut down because there is no alternative for tailings disposition. Additionally, the dry stack tailing disposal method is not considered reasonable because its implementation is economically infeasible (reducing the internal rate of return below 15 percent).

(emphasis added).

298. This conclusion of the BLM was not effectively rebutted.

299. Mr. Kuipers also addressed Applicants' proposal for closure of the open pit by rapid refill. This will require 2,800 acre-feet of water to submerge the pit walls and inhibit the oxidation of sulfide minerals.

300. After mining ceases, the pit lake that will form will remain in perpetuity, draw in approximately 36 afa of groundwater, and consume approximately 93 – 100 afa due to evaporation.

301. According to Mr. Kuipers, a better method of closing the pit would be to backfill the pit with waste rock or other material, which would prevent continuing evaporation. Again, this opinion was not further developed in testimony, nor was it included in his expert report.

302. As with the tailings storage process preferred by Mr. Kuipers, the BLM considered and rejected Mr. Kuipers' recommended process for open pit reclamation, determining that, among other things, backfilling the pit was not economically viable due to the costs associated with moving existing mined material, excavating additional backfill material, and backfilling the new excavation:

> Because the majority of the material removed from the pit is processed and sent to the TSF [i.e. 113 million tons out of approximately 158 million tons mined], additional material would have to be mined to provide backfill material at the end of mining. Assuming a reasonable swell factor, the volume of additional material needed for backfill (material in addition to the non-ore material mined from the pit), excavating for backfill would likely create a pit approximately 50 percent the size of the planned open pit; after producing the backfill the new excavation would also require reclamation. Moving 45 million tons of existing mined material [i.e. 158 million tons minus the 113 million tons sent to the TSF] would easily add approximately $50 million to project costs. Producing an additional 50 million tons for backfill to completely fill the pit could easily add at least another $100 million costs due to added mining, administrative, and reclamation costs.

303. This conclusion of the BLM was not effectively rebutted.

F. WHETHER THE PROPOSED USE AND LOCATION OF USE WOULD BE DETRIMENTAL TO THE PUBLIC WELFARE OF THE STATE

i. Economic Benefits

304. Copper is needed for the manufacture of solar panels, wind turbines, electric vehicles, houses, and appliances.

305. Mr. Kuipers testified that there will be an increase in copper demand, and there is a question as to the ability to meet that increased demand.

306. NMCC has calculated that the Mine will directly employ 280 to 300 employees during the initial years, which number will increase over time.

307. NMCC has calculated that there will be 500 to 600 persons employed during peak construction.

308. Mr. Smith testified that an economic analysis from New Mexico State University's Arrowhead Center has concluded that tax revenues to state and local governments from the Mine will be $150 million.

309. The FEIS concluded that the economic benefits of the Copper Flat Mine for the Proposed Action[38] would be $15,417,792 for the permitting phase; $24,320,590 for the construction phase; and $1,137,624,082 for the operations phase of the project.

310. For Alternative 2, which was the plan approved by the BLM, the FEIS stated that total employment would be 5,218 direct, indirect, and induced jobs; $413,982,638 in labor income, and $1,802,567,171 in economic activity.

[38] The Proposed Action differed from the approved Alternative 2 in various respects, including a longer mining period (16 years) and a lower mining rate (17,500 tons per day).

311. If the Copper Flat Mine project is carried out according to the FEIS, it would generate substantial state and local economic benefits.

ii. Wildlife Considerations

312. No expert witness was disclosed and qualified as an expert witness on biological needs of wildlife in the vicinity of the Mine.

313. The BLM examined the effects of the Mine on native threatened or endangered species. Among other things, the BLM determined that the proposed action would not adversely affect the yellow-billed cuckoo, a threatened species, or the Southwestern willow flycatcher, an endangered species; however, these determinations relied upon the full offset of depletions to the Rio Grande and Caballo Reservoir.

iii. Recreation

314. Witnesses Mr. Yeh, Ms. Siwik, Mr. Berman, and Mr. Lorimier testified about their use of Las Animas Creek, Percha Creek, the Rio Grande, and the adjacent riparian areas for hiking, birding, canoeing, photography, and other recreational activities and their concerns that the Mine project's impact on surface waters would diminish the public's ability to use and enjoy these resources for recreation.

iv. Rio Grande Compact

315. The Rio Grande Compact (Compact) is a water sharing agreement among the states of Colorado, New Mexico, and Texas for management of the Rio Grande. It was signed in 1938 and ratified by the United States Congress in 1939.

316. Under the Compact, Colorado's delivery obligation to New Mexico is based on flows in the headwaters of the Rio Grande and in the Conejos River. Colorado must deliver a portion of that flow to the Lobatos gage, which is located at the Colorado-New Mexico state line.

317. Under the Compact, New Mexico's delivery obligation to Texas is based on the flow past Otowi Gage, which is located on the Rio Grande main stem just north of Santa Fe. A portion of the flow that passes Otowi Gage is required to be delivered to Elephant Butte Reservoir.[39]

318. Elephant Butte Reservoir is located approximately 105 miles north of Texas-New Mexico border.

319. Caballo Reservoir is located downstream of Elephant Butte Reservoir and approximately six miles east of the move-to location.

320. As discussed in Section I.D.iii above, groundwater pumping at the Mine site will deplete water from Caballo Reservoir.

321. Page Pegram, NMISC's Rio Grande Basin Manager and engineer advisor to New Mexio regarding the Rio Grande Compact (Compact), testified about the impact of depletions to Caballo Reservoir on operations under the Compact.

322. Depletion of water from Caballo Reservoir has implications under the Compact

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324. both upstream and downstream of Elephant Butte Dam.

325. Depletion of water from Caballo Reservoir may alter or delay the timing of entering into or emerging from storage restrictions under the Compact for certain upstream reservoirs.

326. If the total amount of water in both Elephant Butte Reservoir and Caballo Reservoir that is available for release for downstream demands falls below 400,000 acre-feet, the Compact places restrictions on storage in upstream reservoirs in New Mexico.

[39] The Compact originally required New Mexico to deliver water in the Rio Grande at San Marcial, but in 1949, the Compact commissioners passed a unanimous resolution to abandon the San Marcial gaging station and to require New Mexico to deliver water in the Rio Grande into Elephant Butte Reservoir.

327. The storage restrictions under the Compact apply to El Vado Reservoir and Abiquiu Reservoir on the Rio Chama, and to McClure Reservoir and Nichols Reservoir on the Santa Fe River (Upstream Reservoirs).

328. For nearly three years starting in June 2020, upstream storage was prohibited per the Compact's storage restrictions. The upstream storage restriction was lifted on April 16, 2023.

329. During April 2023, the spring snowmelt flowing on the Rio Chama peaked at 5,000 cubic feet per second. That flow amount is the equivalent of 10,000 acre-feet per day of storage volume. Therefore, a one-day delay in emerging from the Compact's storage restrictions can result in a loss of 10,000 acre-feet of water storage in the Upstream Reservoirs.

330. Depletions to Caballo Reservoir that are not offset could waste opportunities for New Mexico to store significant amounts of water in the Upstream Reservoirs.

331. Storage moderates the peaks and valleys of the flow of surface water and enables water use during low flow periods, such as between spring runoff and monsoon events. Control over the timing of water delivery results in more effective irrigation.

332. During a storage restriction, water that would otherwise be stored must be allowed to continue to flow downstream.

333. The ability to store water is important for water users to forecast and manage their use of water throughout the year.

334. According to Ms. Pegram, if depletions from the mine site pumping were offset on an annual basis, the impact of the timing of the Compact's storage restrictions would not be mitigated. To mitigate this impact, depletions offsets would need to happen on a real time or daily basis or ahead of the actual impact.

335. However, as discussed in Section I.D.iii.b above, no party, including the Applicants, provided modeling of the real-time impacts on such supply. As such, Applicants have failed to meet their burden of proof that they can calculate the real-time offsets needed.

336. Depletion of water from Caballo Reservoir means there is less surface water in the Rio Grande Project supply for downstream users, including users in New Mexico, Texas, and Mexico, to use.

337. The depletion of water from Caballo Reservoir caused by the Application would occur between Elephant Butte Reservoir, the point at which New Mexico is required to deliver water to Texas under the Compact, and the Texas state line.

338. The Compact is the subject of *Texas v. New Mexico and Colorado*, No. 141, Orig., which has been pending before the United States Supreme Court since 2013. In this case, Texas alleges that, while New Mexico is in compliance with its delivery obligation to Elephant Butte Reservoir, groundwater depletions permitted by OSE between Elephant Butte Dam and the Texas state line are intercepting Rio Grande water bound for Texas, thereby violating the Compact. The compacting states filed a joint motion to enter a proposed Consent Decree as full settlement of the states' claims and dismissal of the original action. The United States, which was allowed to intervene in the case, was not a party to the Consent Decree and opposed the motion. The appointed Special Master recommended that the Court grant the joint motion. However, following the Evidentiary Hearing in this case, the Court denied the motion, holding that the Consent Decree would improperly dispose of the United States' claims. *Texas v. New Mexico,* 602 U.S. 943, 144 S. Ct. 1756 (2024). Accordingly, the Hearing Examiner makes no findings as to the impact of the Consent Decree on the ability of the State of New Mexico to comply with the Compact.

II. CONCLUSIONS OF LAW

A. GENERAL

1. The State Engineer has jurisdiction over this matter pursuant to Articles 2, 5, 6, and 12 of Chapter 72, NMSA 1978.
2. The State Engineer has broad statutory authority to generally supervise and administer the public's water in accordance with law including the "authority to take reasonable and appropriate action to protect and administer the water laws of New Mexico." *State ex rel. Reynolds v. Aamodt*, 1990-NMSC-099, ¶ 10, 111 N.M. 4; *see also* NMSA 1978 § 72-2-1 (1982) (granting the State Engineer "general supervision of waters of the state and of the measurement, appropriation, [and] distribution thereof").
3. The burden of proof in a proceeding on a pending application is on the applicant. 19.25.2.25 NMAC. The standard of proof is preponderance of the evidence. *Id.*
4. To lease water under WULA, a lessee is required "to apply to the state engineer requesting approval for the use and location of use to which such water will be put." § 72-6-4.
5. The State Engineer shall approve an application to lease water "if the applicant has reasonably shown that his proposed use and location of use is a beneficial use and: (1) will not impair any existing right to a greater degree than such right is, or would be, impaired by the continued use and location of use by the owner; and (2) will not be contrary to the conservation of water within the state or detrimental to the public welfare of the state." § 72-6-5(A).

B. NATURE AND EXTENT OF LEASED WATER RIGHTS

6. The water rights under LRG-3150-E at the move-from location, as reflected in the Permit, are valid water rights.[40]

7. Applicants did not meet their burden of proof that the water rights under LRG-3150-E are authorized to be diverted at well LRG-3150-POD 49.

C. WHETHER THE PROPOSED USE AND LOCATION OF USE IS A BENEFICIAL USE

8. Under WULA, Applicants are required to have reasonably shown that the proposed use and location of use of leased water is a beneficial use. § 72-6-5 (A).

9. "Beneficial use shall be the basis, the measure and the limit of the right to the use of water." N.M. Const. Art. XV § 3.

10. Beneficial use has been defined as "the use of such water as may be necessary for some useful and beneficial purpose in connection with the land from which it is taken." *State ex rel Erickson v. McLean,* 1957-NMSC-012, ¶ 29, 62 N.M. 264. This "concept requires *actual use* for some purpose that is socially accepted as beneficial." *Carangelo v. Albuquerque-Bernalillo Cnty. Water Util. Auth.*, 2014-NMCA-032, ¶ 37, 320 P3.d 492, quoting *State ex rel. Martinez v. McDermett*, 1995–NMCA–060, ¶ 10, 120 N.M. 327 (emphasis added).

[40] The adjudication court in the Lower Rio Grande Stream System Adjudication entered its Final Judgment in Stream System Issue No. 101 (SSI No. 101 Final Judgment) on August 22, 2011, The SSI No. 101 Final Judgment establishes the irrigation water requirements for all crops grown in the Lower Rio Grande. It provides: "[f]or future transfers to non-irrigation purposes of use, a [Consumptive Irrigation Requirement] of 2.6 [afa] shall apply to all irrigated acreage in the Lower Rio Grande." Because the Hearing Examiner recommends the denial of the Application, it is not necessary to address various protestants' contention that only a portion of this multi-purpose water right is transferable due to the applicability of this limitation.

11. The principle of beneficial use is based on "imperative necessity," and "aims fundamentally at definiteness and certainty." *State ex rel. Martinez v. City of Las Vegas,* 2004-NMSC-009, ¶ 34, 135 N.M. 375 (citations omitted).

12. Any person intending to construct or operate a dam must submit to OSE detailed plans for approval before construction or operation of the dam. NMSA 1978, § 72-5-32(B) (2009).

13. OSE has adopted detailed regulations on dam design specifications. 19.25.12 NMAC.

14. The legal diversion and use of water for mining, milling, reclamation, and dust control at the Copper Flat Mine would be a beneficial use.

15. However, NMCC has not met its burden of proof that it can obtain the necessary water rights, permits,[41] and other prerequisites to the commencement of Mine operations during the term of the lease.

16. NMCC has not met its burden of proof that it can excrcise the water rights at issue to apply water to actual beneficial use during the term of the lease. Therefore, granting the Application would be contrary to WULA and fundamental concepts of New Mexico water law.

D. WHETHER THE PROPOSED USE AND LOCATION OF USE WOULD IMPAIR ANY EXISTING WATER RIGHT TO A GREATER DEGREE THAN THE CONTINUED USE AND LOCATION OF USE BY SANTA TERESA CAPITAL

17. Under WULA, Applicants are required to have reasonably shown that the proposed use and location of use of leased water will not impair any existing right to a greater degree

[41] The Mine Dewatering Act (NMSA 1978, §§ 72-12A-1 to 72-12A-13 (1980)) states that "No person shall engage in mine dewatering in a declared underground basin without a valid, existing mine dewatering permit issued by the state engineer in accordance with the provisions of the Mine Dewatering Act and the rules and regulations that may be promulgated by him in pursuance hereof." § 72-12A-6. NMCC has not applied for such a permit. Due to the lack of evidence in the record, the Hearing Examiner makes no finding or conclusion regarding NMCC's intent or the need to apply for a mine dewatering permit or the timing of obtaining same.

than such right is, or would be, impaired by the continued use and location of use by the owner. § 72-6-5 (A)(1).

18. Although the Hearing Examiner previously decided that hydrology issues beyond the scope of the 2,400 afa applied for in the Application, specifically the total project need of 6,095 afa and the effects of excavating the open pit, were admissible, after reviewing the evidence and testimony in the record, the Hearing Examiner determined that it was not necessary to consider these issues and limited her findings to the amount of water applied for. The effects of additional water usage and the excavation of the open pit would be more appropriately addressed in future applications specifically implicating those issues.
19. The record contains substantial expert opinion testimony attesting to the conservative nature of certain hydrologic analyses used to determine impairment to existing water rights.
20. The Hearing Examiner concludes that, in this case, it is reasonable: to treat depletions to the general head boundaries associated with the Palomas Graben as depletions to the Rio Grande; in the absence of a pumping schedule, to attribute all move-to diversions to the move-from well closest to the Rio Grande; to apply the MVAA Guidelines to the move-to location; to consider the depletion impacts on the tributaries collectively relative to the total afa proposed for transfer; to apply the Morrison Guidelines to assess drawdown estimates for impairment determinations; and to evaluate drawdown impacts to wells of other ownership based on the saturated thickness of the aquifer into which the wells of other ownership are completed.
21. The approaches described in the previous paragraph form the basis of the Hearing Examiner's findings of fact and conclusions of law regarding impairment.

22. The question of impairment of existing rights is one which must generally be decided upon the facts in each case. *Mathers v. Texaco, Inc.*, 1966-NMSC-226, ¶ 16, 77 N.M 239, 421 P.2d 771.

23. Granting the Application would be contrary to WULA because the proposed use and location of use will impair existing surface water rights to a greater degree than such rights are, or would be, impaired by the continued use and location of use of water by Santa Teresa Capital.

24. Applicants' groundwater impairment analysis did not incorporate water rights data associated with wells of other ownership in determining drawdown due to the exercise of existing water rights, which is a key component of calculating total drawdown under the Morrison Guidelines. In contrast, WRD's analysis of drawdown due to the exercise of existing water rights was based on its database of existing water rights in the vicinity. Due to this difference, Applicants admitted that WRD's overall groundwater impairment analysis was more accurate. However, Applicants also admitted a flaw in both analyses. When determining the impairment of wells that are constructed into the shallow aquifer, both Applicants and WRD used the drawdown allowance for the thicker Santa Fe Group aquifer, into which the move-to wells are constructed, thereby removing all wells with a predicted drawdown of less than 2.6 feet from further impairment analysis.

25. In determining whether the pumping proposed in the Application would impair wells constructed in the shallow alluvial aquifer, the Morrison Guidelines require use of the drawdown allowance for that aquifer, thereby removing all wells with a predicted drawdown of less than 0.65 feet from further impairment analysis.

26. The Hearing Examiner concludes that Applicants, who have the burden of proof, cannot cure the actual defects in their groundwater impairment analysis by relying on analysis that they deem to be flawed for other reasons.

27. Applicants have failed to reasonably show that the proposed use and location of use will not impair any existing groundwater right to a greater degree than such right is, or would be, impaired by the continued use and location of use of water by Santa Teresa Capital.

28. The State Engineer has broad authority to manage water rights applications. "The general purpose of the water code's grant of broad powers to the State Engineer, especially regarding water rights applications, is to employ his or her expertise in hydrology and to manage those applications through an exclusive and comprehensive administrative process that maximizes resources through its efficiency, while seeking to protect the rights and interests of water rights applicants." *Lion's Gate v. D'Antonio,* 2009-NMSC-057, ¶ 24, 147 N.M. 523.

29. As part of her broad authority, the State Engineer may approve an application subject to conditions. *City of Albuquerque v. Reynolds,* 1962-NMSC-173, ¶¶ 32, 34, 71 N.M. 428 (upholding the State Engineer's authority to issue a permit requiring retirement of surface water rights to protect prior appropriators.) "The power to impose suitable conditions is inherent in the broader power to prohibit . . . ." *Id.* ¶ 32.

30. However, the State Engineer has no obligation to grant a permit with conditions of approval that are unlikely to be met. "We are not persuaded to impose a duty on the Office of the State Engineer to mold its response to an application to fit the law. To impose such a duty would conflict with our well established law stating that it is the burden of the applicant to show that the application should be granted." *Herrington v. State ex rel. Office of State*

Eng'r, 2004-NMCA-062, ¶ 26, 135 N.M. 585, 592, 92 P.3d 31, 38 (refusing to require the State Engineer to modify the requested well depth to meet the source requirements under the Templeton doctrine), *rev'd on other grounds sub nom. Herrington v. State of N.M. ex rel. Off. of State Eng'r,* 2006-NMSC-014, 139 N.M. 368, 133 P.3d 258.

31. Under the unique facts of this Application, the State Engineer should exercise her discretion and deny the Application on the basis of impairment rather than grant the Application with conditions requiring offsets on the Rio Grande and the tributaries that cannot reasonably be satisfied within the term of the lease.

32. Further, for the reasons stated below, the State Engineer should deny the Application on the basis of impairment rather than grant the Application with a condition requiring Applicants to file a plan of replacement under the Mine Dewatering Act, NMSA 1978, Sections 72-12A -1 to -13 (1980).

33. First, the Mine Dewatering Act is inapplicable to the Application. Simply stated, Applicants did not seek a permit for mine dewatering. The Mine Dewatering Act defines mine dewatering as "the diversion and discharge of ground water developed by mining activities by means of depressurizing wells, mine shaft pumping or by other means necessary to displace water from an area of mining operations or proposed mining operations, but does not include in situ leaching." § 72-12A-3(B). Rather, the Application is for the diversion and beneficial use of water for mining, milling, reclamation, dust control, wash water, and domestic use.

34. Second, the Mine Dewatering Act contemplates the implementation of a plan of replacement only to address impairment caused by mine dewatering, not to address

impairment caused by the diversion and beneficial use of water. The Mine Dewatering Act states that:

> If the State Engineer finds that the *mine dewatering* would impair existing water rights, [she] shall notify the applicant of the impaired right or rights. The Applicant may appeal such determination or proceed to file a plan of replacement. If appeal results in a judicial determination of impairment, the applicant may thereafter proceed to file a plan of replacement.

§ 72-12A-7(D) (emphasis added).

35. Because the Mine Dewatering Act is not applicable to the Application and does not contemplate the implementation of a plan of replacement for non-dewatering purposes, a permit condition for Applicants to file a plan of replacement under the Mine Dewatering Act is not appropriate.

E. WHETHER THE PROPOSED USE AND LOCATION OF USE WOULD BE CONTRARY TO THE CONSERVATION OF WATER WITHIN THE STATE

36. "The state of New Mexico recognizes the importance of . . . conservation of water in administering its public waters." NMSA 1978, § 72-5-5.1 (1985).

37. Under WULA, Applicants are required to have reasonably shown that the proposed use and location of use of leased water will not be contrary to the conservation of water within the state. § 72-6-5(A)(2).

38. Recently, the New Mexico Court of Appeals stated that "assessment of conservation is of necessity a matter best dealt with on a case-by-case basis, applying the various features of the concept of conservation as needed under the set of facts presented in each case." *Aquifer Science, LLC v. Verhines,* 2023-NMCA-020, ¶ 44, *cert. denied* (Jan. 30, 2023).

39. The court did make clear, however, that evidence beyond that of beneficial use and avoidance of waste may be considered by the State Engineer and the district courts when evaluating conservation. *Id.* ¶¶ 37-43.

40. This matter is unusual in that many aspects of the proposed mining operation have already undergone a significant regulatory review. Although the BLM analysis does not supplant the conservation analysis to be conducted by the State Engineer, unrebutted operational and economic conclusions of the BLM may be considered as part of the State Engineer's conservation analysis.

41. Due to inadequate development in the record of the relative conservation benefits of dry stacking over the Applicant's proposed method of tailings storage, there is no factual basis for concluding that Applicants' tailings storage process is contrary to conservation of water within the state.

42. Due to inadequate development in the record of the relative conservation benefits of hard material backfilling of the pit, there is no factual basis for concluding that Applicants' rapid refill process is contrary to conservation of water within the state.

43. Based on Applicants' plan to recycle 70% of the water it uses (90% of which is from tailings), use surfactant on roads, put pipelines in lined ditches, and deploy alarm systems to alert them of water leaks, Applicants have reasonably shown that the proposed mining operation is consistent with minimal use of water and prevention of waste of water.

44. The proposed use and location of use of the leased water will not be contrary to the conservation of water within the state within the meaning of Section 72-6-5(A)(2).

F. WHETHER THE PROPOSED USE AND LOCATION OF USE WOULD BE DETRIMENTAL TO THE PUBLIC WELFARE OF THE STATE

45. "The state of New Mexico recognizes the importance of public welfare. . . in administering its public waters." § 72-5-5.1.

46. Under WULA, Applicants are required to have reasonably shown that the proposed use and location of use of leased water will not be detrimental to the public welfare of the state. § 72-6-5(A)(2).

47. The Compact Clause of the United States Constitution permits states to enter into agreements among themselves with the consent of Congress. Art. I, §10, cl. 3.

48. Once Congress gives its consent, "a compact between States—like any other federal statute—becomes the law of the land." *Texas v. New Mexico*, 583 U.S 407 at 412, 138 S. Ct. 954 (2018).

49. The Compact is codified in New Mexico as NMSA 1978, Section 72-15-23 (1939).

50. Compliance with the Compact is in the public welfare of the state.

51. Approval of the Application would adversely affect New Mexico's Compact obligations and benefits, which would be detrimental to the public welfare of the state.

52. On balance, the proposed use and location of use of the leased water will be detrimental to the public welfare of the state within the meaning of Section 72-6-5(A)(2).

III. CONCLUSION

53. The Application should be denied.

THEREFORE, IT IS ORDERED that the Application be **denied.**

DONE this 15th day of August, 2025

Sandra L. Skogen
Hearing Examiner

I ACCEPT AND ADOPT THIS REPORT AND RECOMMENDATION AS THE ORDER OF THE STATE ENGINEER THIS 19 DAY OF August, 2025.

ELIZABETH K. ANDERSON, P.E.
NEW MEXICO STATE ENGINEER

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PROFESSIONAL ENGINEER

PARTIES ENTITLED TO NOTICE

Hearing No. 21-025
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Last Revised 11/26/24

CERTIFICATE OF MAILING

I certify that a copy of the foregoing Report and Recommendation was mailed electronically to all parties and also mailed via certified mail to the above-listed Applicant and Protestants on the 20th day of August, 2025.

/s/ Irma E. Corral
Irma E. Corral, Law Clerk
Hearing Unit Administrator