

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION**

**APPLICATIONS OF GOODNIGHT MIDSTREAM
PERMIAN, LLC FOR APPROVAL OF
SALTWATER DISPOSAL WELLS LEA
COUNTY, NEW MEXICO.**

CASE NOS. 23614-23617

**APPLICATION OF GOODNIGHT MIDSTREAM
PERMIAN LLC TO AMEND ORDER NO. R-
22026/SWD-2403 TO INCREASE THE
APPROVED INJECTION RATE IN ITS ANDRE
DAWSON SWD #1,
LEA COUNTY, NEW MEXICO.**

CASE NO. 23775

**APPLICATIONS OF EMPIRE NEW MEXICO
LLC TO REVOKE INJECTION AUTHORITY,
LEA COUNTY, NEW MEXICO.**

CASE NOS. 24018-24020, 24025

**APPLICATION OF GOODNIGHT MIDSTREAM
PERMIAN, LLC FOR APPROVAL OF A
SALTWATER DISPOSAL WELL, LEA COUNTY,
NEW MEXICO.**

**DIVISION CASE NO. 24123
ORDER NO. R-22869-A**

**GOODNIGHT MIDSTREAM PERMIAN, LLC'S RESPONSE IN OPPOSITION TO
EMPIRE'S APPLICATION FOR REHEARING**

Goodnight Midstream Permian, LLC ("GNM" or "Goodnight") submits this Response in Opposition to Empire's Application¹ for Rehearing ("Response"), filed pursuant to the Director's Order issued on October 3, 2025. For the reasons stated below, and in Goodnight's Application for Rehearing ("Goodnight's Application") filed on October 2, 2025, Empire's Application for Rehearing ("Empire's Application") should be refused in full.

¹ Under the Commission's rules, a request for rehearing on a Commission order is by way of an "application," not a motion. 19.15.4.24 NMAC.

INTRODUCTION

Having failed to establish by a preponderance of the evidence its burden that the purported EMSU ROZ is capable of being produced—let alone produced in paying quantities—or that Goodnight’s disposal is otherwise causing waste or impairing correlative rights anywhere in the EMSU, Empire nevertheless urges the Commission to permanently revoke Goodnight’s injection authority without the necessary data to support it. The fact that Empire makes this request—after having been granted an extra three years to prove its case following the close of the evidentiary record—belies its true motivation and purpose before the Commission. It remains desperate for an economic bailout as the company remains in financial distress.² Empire is transparently using the Commission, and this process, to manufacture claims for damages for use in the parallel civil litigation for preclusive effect. *See Amoco Prod. Co. v. Heimann*, 904 F.2d 1405, 1416 (10th Cir. 1990) (concluding that decisions of the Commission are entitled to preclusive effect in later civil litigation). For the reasons stated below and in Goodnight’s Application, and substantiated in Goodnight’s findings of fact, Empire’s Application should be refused.

ARGUMENT

I. Empire Cannot Establish Waste or Impairment to Correlative Rights Without First Proving Hydrocarbons (1) Can Be Produced (2) in Paying Quantities and Demonstrating Failure to Confine Injection Fluids in the Disposal Zone.

Empire cannot meet its burden to show Goodnight has caused waste or impaired correlative rights because Empire has not shown, and cannot show, that the San Andres in the EMSU is capable

² See June 30, 2025, Form 10-Q (“Given the negative working capital and insufficient expected operating cash flow there is substantial doubt about the Company’s ability to continue as a going concern.” (emphasis added)) at <https://s3.amazonaws.com/sec.irpass.cc/2431/0001072613-25-000553.htm>.

of producing oil or gas in paying quantities and that Goodnight's injection has impaired EMSU operations in the Grayburg.

And because Empire is not merely an applicant but seeks revocation of prior Division orders, which is an extraordinary remedy, it must show changed factual circumstances supported by new evidence, on top of its burden to prove waste and impairment of correlative rights. *See* Goodnight's Closing Brief ("GCB") at 18-19. Specifically, the evidence Empire needs to establish to shut-in or suspend Goodnight's injection with respect to claims its Grayburg operations are impaired is that Goodnight's wells "have exhibited failure to confine injected fluids to the authorized injection zone or zones[.]" 19.15.26.10(E) NMAC (emphasis added). As demonstrated in Goodnight's Application, filed on October 2, 2025, Empire has adduced no evidence that Goodnight's wells have "exhibited failure to confine injected fluids" within the San Andres disposal zone.

The Commission should refuse Empire's Application because Empire failed, and continues to fail, to establish all required proof.

A. Empire's Argument that Injection Tends to Reduce the Total Quantity of Hydrocarbons Ultimately Recovered is Meaningless Without First Proving Hydrocarbons are Capable of Being Produced in Paying Quantities—But Even if Economic, Empire Has Not Proven Disposal Will Cause Waste or Impairment.

Empire urges the Commission to find that Goodnight's disposal tends to reduce the total quantity of hydrocarbons ultimately recovered from the EMSU without having to first substantiate the total quantity of hydrocarbons that will be recovered or even that hydrocarbons are capable of being produced, let alone in paying quantities. Empire's argument is not aligned with the law and not supported by record evidence.

As to Empire's legal argument on waste, it makes no sense to contend, and is contrary to the Oil and Gas Act to hold, that the Commission can determine whether injection tends to reduce hydrocarbon recovery without first determining the total quantity of hydrocarbons that can be

recovered and whether those hydrocarbons can even be recovered at all. Without first knowing the total recovery, it is not possible to determine whether recovery will or may be reduced, resulting in waste. More fundamentally, if hydrocarbons are not proven to be recoverable—in any quantity—there can be no showing that total recovery will or may be reduced and no proof that waste will even occur. Recoverability is a threshold question Empire cannot answer.

And, as Empire readily admits, for consideration of waste to even fall within the Commission's jurisdictional authority, the Commission must find not only that a reservoir is "capable of producing oil or gas," but that the hydrocarbons also must be produced "in paying quantities." See Empire App. at 5 (stating that "As part of its obligation to prevent waste, the Commission has authority "to prevent the drowning by water of any stratum or part thereof capable of producing oil or gas or both oil and gas in paying quantities" (emphasis added) (quoting NMSA 1978, § 70-2-12(B)(4)). But here, the Commission expressly found that Empire's purported ROZ is not proven to be recoverable,³ obviating the need to make an explicit finding on whether it can be produced "in paying quantities." Empire nevertheless argues the Commission can and should decide Goodnight's injection tends to reduce the total quantity of hydrocarbons ultimately recovered without first determining the total quantity that can be recovered and having already determined there is no proof it can even be recovered at all—let alone whether production can be obtained "in paying quantities." Empire's argument mangles the Oil and Gas Act, the Statutory Unitization Act, and governing authorities. It also defies logic.

Empire argues it is not required to make "precise proof of a specific volume" to establish waste,⁴ but completely overlooks the insurmountable problem that it has not first established

³ Order No. R-24004 at III(D) ¶¶ 57-60.

⁴ Empire App. at 5; see *id.*, fn. 13 (citing *Grace v. Oil Conservation Comm'n*, 1975-NMSC-001).

recoverability—let alone “certain amounts” of oil, as required to carry its burden. *See Cont’l Oil Co.*, 1962-NMSC-062, ¶ 28 (requiring proof that there is a “certain amount” of oil in the pool, a “certain amount” of oil within its proposed spacing units, and that “a determined amount” of oil “could be produced and obtained without waste.” (emphasis added)). Under the plain language of the Oil and Gas Act, and consistent with the Commission’s long-standing administrative precedent, oil or gas must be recoverable to constitute waste. *See* GCB at 11. The definition of “underground waste” explicitly limits waste to “the total quantity of crude petroleum oil or natural gas ultimately recovered.” § 70-2-3 (emphasis added). Oil or gas that cannot be recovered is not waste if it cannot be produced. *See* Williams & Meyers, OIL AND GAS LAW, at “W Terms” (defining “waste” as “the loss of oil or gas that could have been recovered and put to use.”).⁵

The Commission has had many opportunities to decide whether an activity will create waste and has repeatedly held that recoverability of hydrocarbons is essential proof. For example, in Case No. 12905, the Commission considered an application for a permit to dispose of produced water in the San Andres and Glorieta formations. *See* Order No. R-11855-B, at ¶ 3. An operator opposed the application, arguing the proposed injection operations would create waste due to “the potential productivity of the San Andres and Glorieta formations.” *Id.* at ¶ 14 (emphasis added). After hearing testimony that the injection formations contained “some hydrocarbons,” the Commission nevertheless granted the application for disposal and permitted the proposed injection operations, in part, because the testimony revealed that the “relative permeability of the rock and the [high] water saturation make it extremely unlikely that any of the hydrocarbons could move to a well bore and be recovered.” *Id.* at ¶ 15. The Commission noted that the party opposing the application “failed to

⁵ The Statutory Unitization Act also incorporates the concept that unavoidable loss that cannot be produced is not waste. Orders providing for unitization must include an allocation of “all the oil and gas that is produced from the unit area and is saved, being the production that is not used in the conduct of operations on the unit area or not unavoidably lost.” NMSA § 70-7-7(C) (emphasis added).

produce any evidence supporting its apparent assertion that either the San Andres or the Glorieta will produce oil or gas,” and concluded, “[i]t thus appears that the Glorieta and San Andres are wet and will not produce commercial quantities of oil or gas in the vicinity of the proposed injection well.” *Id.* at ¶¶ 16-17 (emphasis added). Where an applicant for disposal operations produces evidence that the geological characteristics of a potentially impacted formation make hydrocarbons unrecoverable, or unlikely to be recovered, and the opposing party fails to produce evidence to the contrary, the Commission has granted the application and permitted injection operations. *Id.* at ¶¶ 15-16 and ¶ 27. Thus, oil or gas that is unrecoverable is not considered waste.

Similarly, the Commission does not consider injection to cause “waste” where liquids are disposed into reservoirs not proven to be capable of producing in paying quantities. *See* § 70-2-12(B)(4); *see also* § 70-7-4(C) (expressly incorporating economics in the definition of waste). In Case No. 15059, for instance, the Division determined that its authority to prevent waste does not extend to formations that are not proven to be capable of producing commercial amounts of oil or gas. *See* Order No. R-13889. In considering whether to approve a disposal well over the objection of an oil and gas operator, the Division explained, “under Section 70-2-12(B)(4) NMSA Laws of 1978, the Division is required to prevent the drowning by water any stratum or part thereof capable of producing oil and gas in paying quantities and to prevent the premature and irregular encroachment of water or any other kind of water encroachment, that reduces or tends to reduce the total ultimate recovery of crude petroleum oil or gas from any pool. Under the Oil and Gas Act, the Division’s authority to prevent ‘the drowning by water any stratum’ does not extend into formations that are not the targeted hydrocarbon reservoirs or pools.” *Id.* at ¶ 7 (emphases added). The Division’s analysis and decision to approve the disposal well shows no waste occurs if hydrocarbons are not recoverable in paying quantities from the target reservoir. *Id.* at 6, ¶ 4. Notably, the Division required the operator in that case to notify it of “significant hydrocarbon shows” and stated that its

order would be terminated if “significant hydrocarbon shows” indicate the injection interval is “capable of producing in paying quantities.” *Id.* The Division did not provide its order shall be terminated if the shows indicate a small amount of hydrocarbons. Hydrocarbon volumes must be significant and in paying quantities to implicate waste.⁶ *See also*, GCB at 14-15.

Without proof that the EMSU ROZ is capable of producing oil or gas in paying quantities, Empire is unable to prove waste as a matter of law. But even if Empire could prove its purported EMSU ROZ is capable of producing in paying quantities, it has still failed to prove Goodnight’s injection has or will cause waste or impair correlative rights. As Empire’s engineering witness admitted, ROZ hydrocarbons are immobile and mobilized only through injection of CO₂. West 4/10/25 Tr. 86:3-6; *see also* Birkhead 2/26/25 Tr. 552:13-18. Goodnight’s continued injection will have no adverse impact on Empire’s proposed CO₂ flood operations:⁷ It will not wash out or mobilize the claimed ROZ hydrocarbons and is not pressuring up the reservoir. *See, e.g.*, Davidson 4/21/25 Tr. 256:3-20 (“[T]he fact that it’s an ROZ and the oil is not mobile . . . the injection is not moving the oil anywhere.”); GN FOF 116-123 (disposal is increasing reservoir pressure in the San Andres by only about 0.25 psi per million barrels injected—a de minimis increase).

B. Empire Has Adduced No Evidence that the Purported EMSU ROZ is Capable of Producing Hydrocarbons in Paying Quantities.

Empire makes two arguments in support of its contention it has established the purported EMSU ROZ is capable of producing hydrocarbons in paying quantities—neither has any merit in fact or law.

First, Empire makes the remarkable assertion that by approving Order No. R-7765, unitizing

⁶ This same requirement has been imposed on Goodnight under the terms of its orders. Notably, no “significant hydrocarbon shows” were identified in any of its four wells that are subject to Order No. R-24004.

⁷ *See* Goodnight App. at Pt. IV.C.

the EMSU back in 1984, the Commission “has already recognized that unitized operations in the EMSU will lead to recovery of oil and gas at a profitable level,” and that the Commission has “reaffirmed those prior findings” in Order No. R-24004. *See* Empire App. at 9. But as shown in Goodnight’s Application,⁸ that 1984 determination was limited to the proposed waterflood operations, capital and operation costs associated with waterflood operations, and the projected recovery anticipated from waterflood operations. The EMSU Order never authorized CO2 flood operations in the EMSU or any other type of enhanced oil recovery operation necessary to produce an ROZ⁹—in fact, secondary recovery operations through waterflooding was limited to the Grayburg and Lower Penrose.¹⁰ Nor has the Commission ever made findings necessary to authorize CO2 flood operations in the EMSU. The profitability of Empire’s proposed San Andres CO2 flood—including capital costs—was never presented to the Commission, and still has not been presented, as required. *See* § 70-7-6(A)(2)-(3). And the Commission has never found that a CO2 flood would be profitable, as required.¹¹ This argument is without basis.

Second, Empire contends it proved a CO2 flood “should yield 18% and may be closer to 30% recovery of the ROZ,” citing the testimony of Empire experts Steven Melzer and William West. Empire App. at 10, fn. 40. However, Empire did not provide any direct testimony in its case in chief establishing a basis for an 18% ROZ recovery. The only Empire witness who testified on potential recovery in the EMSU was William West, but he admits he did not include a recovery factor or a basis for one in his testimony or in any of the exhibits filed with the Commission. West

⁸ Goodnight App. at Pt. VI.A & B.

⁹ *See* Order No. R-7765, Finding ¶ 14 (proposing secondary recovery by waterflood), Decretal ¶ 4 (approving secondary recovery only).

¹⁰ Case No. 8399, Hearing Tr. Vol. 2, 224:22-25 (“Q: Now I understand that you will be injecting only into the Grayburg and Penrose and not the San Andres, is that correct? A: That is correct.”).

¹¹ *See* Goodnight App. Pt. VI.

4/10/25 Tr. 126:1-18; 127:11-15 (“I should have put it in there. But it is in the backup data.”); GN FOF 163. Empire thus presented no evidence in support of its direct case on ROZ recoverability and, therefore, failed to meet its evidentiary burden.

The testimony Empire did provide on a potential recovery factor was completely unsubstantiated by data, evidence, or published analyses that would make it applicable to ROZ recovery in the EMSU. West 4/10/25 Tr. 123:15-124:14 (acknowledging his testimony includes no explanation or basis for an assumed 18% recovery factor). The 18% recovery factor Empire assumes in its economic model for the EMSU ROZ is two standard deviations above the mean for oil recovery for CO2 floods in conventional reservoirs. Lake 4/24/25 Tr. 175:10-177; GN Ex. G-6; GN FOF 162. That is an unrealistic and unjustified over-estimate. In contrast, Goodnight’s experts presented analyses and testimony substantiating their opinion that a conservative estimate for ROZ recovery is more like 1%-6%. *See* Knights Sur-Rebuttal GN Ex. E, Fig. 12; Lake 4/24/25 Tr., 177:4-9; 176:22-180:9 (“It is likely that ROZ floods would perform about a third as well” as the 18% recovery factor realized in a conventional reservoir); GN FOF 162. Empire suggests Dr. Lake’s dimensionless curve analysis is “questionable” but does not explain how and cites instead to Dr. Lake’s testimony regarding Empire’s use of a dimensionless curve for CO2 recovery, not oil recovery. *See* Empire App. at 11, fn. 42 (citing testimony of Dr. Lake).

As to Empire’s other witness, Steven Melzer, he expressly testified that, having only reviewed the EMSU-679 and R.R. Bell #4 cores, he could not and did not determine a potential recovery factor for ROZ anywhere in the EMSU—let alone in the San Andres disposal zone. *See* Melzer 4/27/25 Tr. 867:20-868:11; 868:5-18 (he would not be able to determine a recovery factor for the San Andres ROZ based on the EMSU-679 and R.R. Bell #4 cores alone); *id.* Tr. 866:23-867:19 (Melzer reviewed the core reports for the EMSU-679 and R.R. Bell #4 but did not review any other data or information specific to the EMSU).

Empire complains that the Commission rejected its use of the Seminole field as an analogy for ROZ recovery based on Goodnight's testimony for why the two fields are not comparable but provides no evidentiary reason to reconsider that assessment. Empire Rehearing at 11. The fact is that no witness was willing to testify EMSU ROZ recovery is expected to be analogous to Seminole ROZ recovery. *See* Rice FOF 114 (Knights testifying that Seminole is not analogous to EMSU). To the extent Tall Cotton serves as an analogous field, the data from that field confirms a recovery factor for an EMSU ROZ can be expected to be no more than 1%-6%, making the EMSU ROZ far from economic. *See* Knights Sur-Rebuttal GN Ex. E, Fig. 12; Lake 4/24/25 Tr., 177:4-9; 176:22-180:9; GN FOF 162, 165.

Empire failed to present any evidence that its purported EMSU ROZ is capable of producing in paying quantities at hearing and has failed to do so again in its rehearing request.

C. Empire Cannot Show Impairment of Correlative Rights.

Empire asserts Goodnight's injection infringes on Empire's correlative rights throughout the San Andres and Grayburg in the EMSU but has failed to meet any of the necessary elements to establish the necessary proof.

Determining the extent of correlative rights is a threshold issue that precedes the Commission's ability to protect those rights. *See* NMSA, § 70-2-33(H) (defining correlative rights). To "comply with the mandate of the statute," Empire must establish, "so far as can be practicably determined," that there is a "certain amount" of oil in the pool, a "certain amount" of oil within its proposed spacing units, and that "a determined amount" of oil "could be produced and obtained without waste." *Cont'l Oil Co. v. Oil Conservation Comm'n*, 1962-NMSC-062, ¶ 28, 373 P.2d 809 (emphasis added).

The problem for Empire regarding its San Andres ROZ correlative rights claim, as for its waste claim, is that Empire has not proven and cannot prove that the EMSU ROZ is recoverable so

there is no legal or factual need to evaluate any other element under the correlative rights analysis. Empire is unable to show that an ROZ “could be produced” in the EMSU, let alone that a “determined amount” “could be produced,” as required. *Cont’l Oil Co.*, 1962-NMSC-062, ¶ 28.

A similar problem arises with respect to Empire’s claims that its correlative rights are being impaired in the Grayburg. Empire has failed to show under the elements set out in *Continental Oil Co.* certain volumes it alleges could be produced in the Grayburg but are not due to Goodnight’s injection. Empire has not even tried. Empire presented no evidence on the elements necessary to establish impairment of correlative rights and, therefore, failed to meet its evidentiary burden on this claim. Instead, Empire has relied entirely on the argument that Goodnight’s injected fluids are watering out or encroaching on its operations in the EMSU. *See* Empire App. at 5. This contention is without an evidentiary basis.

First, the Commission correctly determined that Empire has failed to prove by a preponderance of the evidence that Goodnight’s injection fluids in the San Andres disposal zone are currently migrating into and in communication with the Grayburg in the EMSU. Order at III(C) ¶¶ 54-56; *see also* 19.15.26.10(E) NMAC. As established in Goodnight’s Application, Empire’s evidence presented at hearing failed to prove any physical basis for communication between Goodnight’s San Andres disposal interval and the overlying reservoir and no direct evidence of communication or failure to confine injection fluids. *See* Goodnight App. at Pt. IV(B) and (D). Nor was Empire able to adduce any indirect evidence of communication to prove communication or failure to confine injection fluids. *See* GN FOF 39-47 (San Andres disposal is a functionally separate, non-productive reservoir from the Grayburg); 48-59 (injection fluids into the San Andres disposal zone remain confined); 60-68 (no evidence of fractures through Goodnight’s confining zone into the disposal interval); 69-86 (Grayburg water production profiles do not show communication); 87-89 (Grayburg oil production shows no indication of communication); 90-95

(Grayburg water chemistry is within historic ranges and shows no indication of communication); 96-107 (Empire's model simulation is fatally flawed, unreliable, and fails to predict simple volumes and pressures).

In contrast, the assertions Empire makes in its Application do not withstand scrutiny. For example, to support its contention Goodnight's injection is washing out and reducing secondary recovery in the Grayburg, Empire cites statements from Dr. Lindsay, Mr. Melzer, Mr. McShane and Mr. West. Empire App. at 5, fn. 15. However, upon review, the supporting evidence Empire cites consists of either bare, unsubstantiated assertions¹² or pure conjecture without supporting analyses or data.¹³ The same is true for Empire's claims asserting Goodnight's injection is "washing out and reducing future tertiary recovery" in the Grayburg and San Andres. Empire App. at 5, fn. 16-17.¹⁴ Empire's heavy reliance on its water "plume" map, Empire Exhibit N-23, is grossly misplaced. It is nothing more than an earlier version (circa 1986) of the waterflood conformance map published by Chevron in 1998 showing the effects of the well-documented Goat Seep edgewater drive and well-established waterflood conformance problems across the EMSU within the Grayburg reservoir—it has nothing to do with alleged "vertical plumes" of water from the San Andres into the Grayburg:

¹² E.g., Empire Ex. B at 8-9 (stating "From my perspective, injection of high salinity produced water into the San Andres reservoir residual oil zone (ROZ) will do three things," without citing or referencing any data or evidence (emphasis added)).

¹³ E.g., Ex. I at 15 (stating "Goodnight's saltwater disposal will cause waste, water out Grayburg oil producers, increase the failure rate of Empire's wells and facilities due to high corrosion, and will result in loss of ultimate oil recovery," without any supporting data on oil/water production, failure rate of wells and facilities, proof of corrosion, or loss of production).

¹⁴ E.g., Empire Ex. I at 12-13 (asserting injection will impair CO2 flood operations due to increased reservoir pressures and capital and operating costs without any supporting data or analyses on pressures or costs); Empire Ex. C at 6 (relying on Melzer's general testimony about impacts from disposal on CO2 floods even though Melzer testified he did not analyze or review any data or information specific to the EMSU other than the EMSU-679 and R.R. Bell #4 core data).

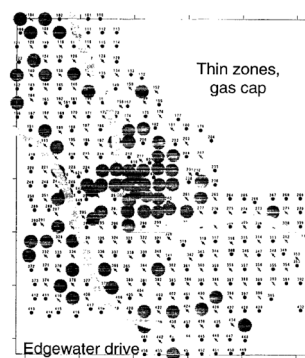
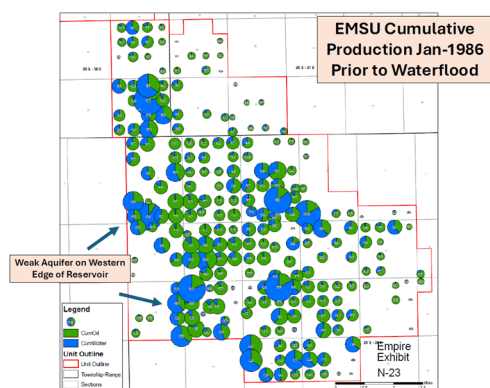


Fig. 7-- Wells that have symptoms of poor reservoir conformance are marked by a large circle.

Compare Empire Exhibit N-23 (above, left) with Goodnight Cross Exhibit 1 at 5 (above, right). See also GN FOF 69-86.

In addition to the water cuts represented in Empire Exhibit N-23 being nothing more than the same edgewater and conformance issues Chevron documented in the late 1990s, Chevron prepared a full-field simulation model for its waterflood operations and in 2000 confirmed to the Division that all water production in the EMSU was accounted for with no evidence of extraneous water influx into the EMSU other than encroachment of Goat Seep edgewater. GN Ex. 50; GN FOF 80. Claims that Empire's producing wells in the EMSU have "extracted more water than expected" are plainly false and unsupported by evidence. Compare Empire App. at 6, fn. 21 with Empire Ex. I-18 (showing injection and production of ~70,000 BWPd in the EMSU) and Empire Ex. I at 2 ("The Eunice Monument South Unit (EMSU) waterflood currently produces approximately 720 BOPd; 70,000 BWPd; 500 MCFPD and injects approximately 70,000 BWPd into the unitized Grayburg / San Andres Reservoir." (emphasis added)); see also GN FOF 72; West 4/11/25 Tr. 48:41-49:13; 51:13-52:4 (unable to identify specific water production data showing impacts and conceding that "it's hard to say what has been coming in . . . You can't tell where it's coming in.").

Second, Empire's claim that Goodnight's disposal is "causing scale and damaging" the San Andres formation is unsupported by reliable testimony or evidence. See Empire App. at 6. Empire presented no expert witness on chemistry—it relies on the testimony of William West who is a

petroleum engineer with no expertise, background, or training in chemistry or chemical analyses. *See* Exhibit I (West Resume). But more fundamentally, Empire did not prepare an analysis to show Goodnight's disposal fluids are incompatible with the San Andres or Grayburg formation fluids. West 4/10/25 Tr. 160:16-17; GN FOF 95. Empire thus presented no direct, reliable evidence to support this assertion. Nor is there indirect evidence.

If Goodnight's disposal operations were causing scale to form within the EMSU, causing the reservoirs to "block off" and "cement up" the ROZ and Grayburg, as alleged, Goodnight's injectivity through its disposal wells would be impaired over time. That is not what the data shows. Instead, after more than four years of high-rate injection and more than 60 million barrels of produced water injected through its four disposal wells, Goodnight's wells show no signs of decreasing injectivity within the San Andres that would be expected if scale were forming, causing the aquifer to "cement up." *See, e.g.*, Goodnight Exs. B-11 & B-12. To the extent scale is a problem in the Grayburg, it has been well documented for decades that San Andres aquifer water is not compatible with Grayburg fluids, causing scale and corrosion in the Grayburg since the start of waterflood operations in the 1980s—yet Empire has knowingly continued injecting non-compatible scale- and corrosion-causing San Andres water across the EMSU since it acquired the field in 2021. *See* GN FOF 109-111. Empire has not established any basis to contend scale or corrosion experienced in the EMSU is from Goodnight's operations and not due to Empire's own injection of incompatible San Andres water into the EMSU. In any event, Empire submitted no evidence of impacts or impairments to its operations or the EMSU formations, including proof of increased operating costs or necessary remedial actions, resulting from alleged changes in water chemistry, scaling, or corrosion due to Goodnight's disposal. GN FOF 115.

Finally, Empire contends Goodnight's disposal "*tends to hinder*" Empire's ability to recover hydrocarbons from the EMSU, based on the assertion that Goodnight's injection is causing higher

pressures in the San Andres, filling up the San Andres pore space, and causing equipment wear and tear.¹⁵ However, none of those assertions are backed up by any evidence or data. Instead, the evidence confirms the opposite. Goodnight's injection is not pressuring up the San Andres, even after hundreds of millions of barrels have been injected over more than 60 years. *See* GN FOF 121-123. Nor is there any evidence of impacts to Empire's production. In fact, Empire's own witness testified that Empire cannot say whether Goodnight's injection is adversely impacting EMSU recovery or operations because Empire "Does not have the type of data that [it] would need to see if it's affected or not." McShane 4/8/25 Tr. at 116:16-117:12 (emphasis added); *see also* GN FOF 115.

CONCLUSION

For the reasons stated below, and in Goodnight's Application for Rehearing filed on October 2, 2025, Empire's Application for Rehearing should be refused in full.

Respectfully submitted,
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¹⁵ Empire App. at 7 (emphasis retained).

CERTIFICATE OF SERVICE

I hereby certify that on October 10, 2025, I served a copy of the foregoing document to the following counsel of record via Electronic Mail to:

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