

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

**IN THE MATTER OF THE HEARING CALLED BY
THE OIL CONSERVATION DIVISION FOR THE
PURPOSE OF CONSIDERING:**

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

**CASE NO. 20555
ORDER NO. R-20855**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on June 14, 2019, at Santa Fe, New Mexico, before Examiner Phillip R. Goetze.

NOW, on this 12th day of September 2019, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and the subject matter.

(2) Goodnight Midstream Permian, LLC ("Applicant" or "Goodnight Midstream") seeks authority to utilize its Nolan Ryan SWD Well No. 1 (API No. 30-025-45349; the "Subject Well"), located 779 feet from the South line and 1995 feet from the East line (Unit O) of Section 13, Township 21 South, Range 36 East, NMPM, Lea County, New Mexico, for disposal of produced water into the San Andres formation through a perforated interval from 4100 feet to 4700 feet below surface.

(3) Goodnight Midstream submitted a Division Form C-108 application (Administrative Application No. pMAM1907048843) on March 3, 2019, for authority to inject into the Subject Well which was protested by the New Mexico State Land Office ("SLO") and Parker Energy Services, Inc.

(4) On May 14, 2019, Goodnight Midstream submitted an application for hearing for approval of the Subject Well for commercial disposal of produced water.

(5) Subsequently, the SLO filed an entry of appearance for this application on May 28, 2019.

(6) Applicant appeared at the hearing through counsel and presented geologic and engineering evidence to the effect that:

- (a) The Applicant seeks to drill the Subject Well to an approximate total depth of 4800 feet below surface. The injection will occur through perforations from approximately 4100 feet to approximately 4700 feet below surface.
- (b) The Subject Well will be constructed with the following two casing strings: a 9 $\frac{5}{8}$ -inch surface casing set at 1350 feet and a 7-inch production casing set from the surface to 4800 feet. Both casings will have cement circulated to the surface.
- (c) The Subject Well will inject fluids through 4 $\frac{1}{2}$ -inch, fiberglass-lined steel tubing attached to a packer set at depth at or within 100 feet of the shallowest perforation.
- (d) The primary sources of produced water will be production from wells completed in the Bone Spring and the Wolfcamp formations.
- (e) The analyses of produced water samples provided by Applicant showed the compatibility of the injection fluids with formation fluids in the proposed disposal interval.
- (f) The Applicant proposes the Subject Well as a commercial operation with a maximum average injection rate of 15000 barrels of water per day (BWPD) using a maximum surface injection pressure of 820 pounds per square inch (psi).
- (g) The depth of the deepest known source of fresh water in the vicinity of the Subject Well was approximately 200 feet below surface and was identified as the Rustler formation.
- (h) Three active fresh-water wells were identified within a one-mile radius of the Subject Well. The Applicant provided water quality analyses for the three wells that showed total dissolved solid (TDS) concentrations less than 400 milligrams per liter (mg/L) in each case.
- (i) Applicant stated the Subject Well is greater than six miles from the Capitan Reef aquifer and that there is no evidence of hydrologic communication between the reef and the proposed injection interval.

- (j) Applicant's engineering witness testified that he has examined the available geological and engineering data and found no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- (k) The results of the one half-mile Area of Review (AOR) around the Subject Well found one active well that penetrated the proposed injection interval. The well, Parker Energy SWD No. 5 (API 30-025-38789), is properly cased and cemented as to protect underground sources of drinking water and not allow migration of injected fluids from the proposed injection interval.
- (l) Applicant identified the San Andres formation for the disposal interval due to the high porosity and the absence of historical hydrocarbon production in the formation within a two-mile radius of the Subject Well.
- (m) Applicant further stated the top of the San Andres formation contains several anhydrite intervals that provide an upper confining layer for the proposed disposal interval while the low porosity rocks of the lower San Andres and upper Glorieta formations provide a lower confining layer.
- (n) Applicant has recently completed disposal wells in the same interval of the San Andres formation as proposed for the Subject Well and found the formation to be pressure depleted owing to large-scale water extraction used to support prior enhanced recovery and drilling operations.
- (o) The Applicant provided evidence of notification of this application to all "affected persons" within a one half-mile radius of the surface location of the Subject Well and with publication in a newspaper of general circulation in the county.
- (7) The SLO appeared through counsel at hearing and did not oppose the granting of this application. The SLO provided a statement into record expressing their concern for the spacing of disposal wells and the potential impacts to adjacent state mineral interests.
- (8) No other party appeared at the hearing, or otherwise opposed the granting of this application.

The Division concludes as follows:

- (9) The application has been duly filed under provisions of Rule 19.15.26.8 NMAC.

(10) Geologic and engineering interpretations submitted by the Applicant identified geologic seals at the top and at the base of the proposed disposal zone that would prevent the vertical migration of injection fluids.

(11) The disposal fluids are compatible with existing formation fluids based on analytical results provided by Applicant.

(12) The application has been duly filed under the provisions of Division Rule 19.15.26.8 NMAC.

(13) Applicant has presented satisfactory evidence that all requirements prescribed in Division Rule 19.15.26.8 NMAC have been met.

(14) Division records indicate Goodnight Midstream (OGRID 372311) as of the date of this order is in compliance with Division Rule 19.15.5.9 NMAC.

(15) Approval of disposal in the Subject Well will enable Applicant to support existing production and future exploration in this area, thereby preventing waste, and will not impair correlative rights.

IT IS THEREFORE ORDERED THAT:

(1) Goodnight Midstream Permian, LLC (the “operator”) is hereby authorized to utilize its Nolan Ryan SWD Well No. 1 (API No. 30-025-45349; the “Subject Well”), located 779 feet from the South line and 1995 feet from the East line (Unit O) of Section 13, Township 21 South, Range 36 East, NMPM, Lea County, New Mexico, for disposal of Underground Injection Control Class II fluids into the San Andres formation.

(2) Disposal shall be through a perforated interval from 4100 feet to 4700 feet below surface comprising the San Andres formation only. Injection is to be through 4½-inch, plastic-lined tubing with a packer set within 100 feet above the top perforation of the permitted interval.

(3) The operator shall take all steps necessary to ensure that the disposed water enters only the permitted disposal interval and is not permitted to escape to other formations or onto the surface.

(4) Well construction and testing shall be in accordance with Division Rule 19.15.16 NMAC and all casing strings shall have cement circulated to surface. If cement does not circulate on any casing string, the operator shall run a cement bond log (CBL) or other log to determine top of cement and shall notify the Division’s District I office with the top of cement on the emergency phone number prior to continuing with any further cement activity with the Subject Well. If cement did not tie back in to next higher casing shoe, the operator shall perform remedial cement job to bring cement, at a minimum, 200 feet above the next higher casing shoe.

(5) After installation of tubing, the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved leak detection device in order to determine leakage in the casing, tubing, or packer. The casing shall be pressure tested from the surface to the packer setting depth to assure casing integrity.

(6) The operator shall run a mudlog over the approved disposal interval for assessment of the hydrocarbon potential and obtain a water sample for analysis of hydrocarbon content as well as general water chemistry (including major cations, major anions, and Total Dissolved Solids (TDS)). Prior to commencing injection, the operator shall supply the results of the water sample and the mudlog to Division's District I office and provide a copy of the same submittal to Engineering Bureau in the Santa Fe office. *If the analysis of the sample is found to contain a TDS concentration of 10000 mg/L or less, the injection authority under this Order shall be suspended ipso facto.*

(7) The Subject Well shall pass an initial mechanical integrity test ("MIT") prior to commencing disposal and prior to resuming disposal each time the well has significant equipment changes including, but not limited to, the packer being unseated, tubing being pulled, or when casing repairs have occurred. The operator shall notify the Division's District I office a minimum of 48 hours in advance of the proposed date and time of the modification of disposal equipment and of any MIT test so that the same may be inspected and witnessed. All MIT procedures and schedules shall follow the requirements in Division Rule 19.15.26.11(A) NMAC.

(8) The operator shall file a Notice of Intent on Division Form C-103 with the Division's District I office prior to any testing of the well or for any activities that shall modify the well construction or operation. The operator shall provide written notice of the date of commencement of disposal to the Division's District I office. The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Division Rules 19.15.26.13 NMAC and 19.15.7.24 NMAC.

(9) If the Subject Well fails a MIT or if there is evidence that the mechanical integrity of said well is impacting correlative rights, the public health, any underground sources of fresh water, or the environment, the Division Director shall require the Subject Well to be shut-in within 24 hours of discovery and the operator shall redirect all disposal waters to another facility. The operator shall take the necessary actions to address the impacts resulting from the mechanical integrity issues in accordance with Division Rule 19.15.26.10 NMAC, and the Subject Well shall be tested pursuant to Rule 19.15.26.11 NMAC prior to returning to injection.

(10) Without limitation on the duties of the operator as provided in Rules 19.15.29 NMAC and 19.15.30 NMAC, or otherwise, the operator shall immediately notify the Division's District I office of any failure of the tubing, casing or packer in the Subject Well, or of any leakage or release of water, oil or gas from or around any produced or plugged and abandoned well in the area, and shall take such measures as may be timely and necessary to correct such failure or leakage.

(11) The wellhead injection pressure on the Subject Well shall be limited to **no more than 820 psi**. The disposal well shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface tubing pressure to the maximum allowable pressure for this well. The Subject Well shall be included in a Supervisory Control and Data Acquisition (SCADA) system for operation as an injection well.

(12) The Director of the Division may authorize an increase in tubing pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the disposed fluid from the approved injection interval. Such proper showing shall be demonstrated by sufficient evidence including but not limited to an acceptable Step-Rate Test.

(13) The injection authority granted under this order is not transferable except upon Division approval. The Division may require the operator to demonstrate mechanical integrity of any injection well that will be transferred prior to approving transfer of authority to inject.

(14) The Division may revoke this injection permit after notice and hearing if the operator is in violation of Division Rule 19.15.5.9 NMAC.

(15) The disposal authority granted herein shall terminate one (1) year after the effective date of this order if the operator has not commenced injection operations into the Subject Well. The Division, upon written request by the operator prior to the termination date, may grant an extension thereof for good cause.

(16) One (1) year after disposal into the Subject Well has ceased, the well will be considered abandoned and the authority to dispose will terminate *ipso facto* as provided in Division Rule 19.15.26.12(C) NMAC.

(17) Compliance with this order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health and safety and the environment.

(18) Jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order; whereupon the Division may, after notice and hearing or prior to notice and hearing in event of an emergency, terminate the disposal authority granted herein.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in blue ink, appearing to read "ASandoval", written over the printed name.

ADRIENNE SANDOVAL
Director