RAILROAD COMMISSION OF TEXAS
HEARINGS DIVISION

OIL AND GAS DOCKET NO. 08-0326846

APPLICATION OF BLACKBEARD OPERATING, LLC (073056) FOR BLANKET RULE 10 AUTHORITY, MER ALLOWABLE, INCREASED NET GOR, AND CANCELLATION OF OVERPRODUCTION FOR UNLIMITED OIL AND GAS ALLOWABLE ASSIGNMENTS IN THE SAND HILLS (CLEAR FORK) AND SAND HILLS (TUBB) FIELDS, CRANE COUNTY, TEXAS.

PROPOSAL FOR DECISION

HEARD BY: Austin A. Gaskamp – Technical Examiner
Ezra Johnson – Administrative Law Judge

PROCEDURAL HISTORY:

Application Filed -	June 3, 2020
Notice of Hearing Date -	September 21, 2020
Hearing Date -	January 20, 21, 22 and March 16, 17, 2021
Close of Record -	May 5, 2021
Proposal for Decision Issued -	September 21, 2021

APPEARANCES:

APPLICANT: Blackbeard Operating, LLC -

David Gross, Attorney
Dale Miller, Consulting Petroleum Engineer
Ian Smith, Vice President of Permian Basin
Kyle Walker, Reservoir Engineer
Michael St. Germain, Permian Land Manager
Rene Wiksveen, Geologist

PROTESTANT: Millwee Oil, Inc.

David E. Jackson, Attorney
Sandra Millwee Jordan, President, Treasurer, Landman
Lynda Millwee Krol, CEO, Secretary, Landman
Daniel Jordan, Chief Operations Petroleum Engineer

OBSERVER: Tumbleweed Energy Limited, (Aligned with Protestant)

Donald Woods, Owner

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I. Statement of the Case

Blackbeard Operating, LLC ("Blackbeard") submitted to the Railroad Commission of Texas ("Commission") an application ("Application") for a blanket exception to Statewide Rule 10 ("SWR 10") (downhole commingling of different Commission-designated fields)[1] for the Sand Hills (Clear Fork) and Sand Hills (Tubb) Fields (the "Fields"). Additionally, Blackbeard requests a maximum efficient rate ("MER") and net gas oil ratio ("net GOR") of 300 barrels of oil per day ("bopd") with a daily casinghead gas limit of 3,000 thousand cubic feet ("Mcf") of gas per day. Alternatively, to field-wide MER allowable and net GOR allowable increase, Blackbeard requests "salvage classification," unlimited oil allowables for the Fields. Lastly, Blackbeard requests cancellation of accrued overproduction for its leases in the Fields.

Millwee Oil, Inc. protests all components of the Application. Millwee argues that Blackbeard has not proven the need for increased oil or gas allowables (MER and net GOR), and Blackbeard's accelerated production of the Fields will lead to premature abandonment, resulting in stranded reserves. Millwee opposes salvage classification of the Fields. Millwee opposes cancellation of overproduction. Millwee does not categorically oppose individual SWR 10 exceptions but does oppose blanket SWR 10 exception authority for the Fields because it will not receive notice of the commingling applications if they are approved administratively.

The Technical Examiner and Administrative Law Judge (collectively "Examiners") respectfully submit this Proposal for Decision ("PFD") and recommend the Commission deny Blackbeard's application for a blanket SWR 10 exception for the Fields. The Examiners recommend approval of exceptions to SWR 10 for the subject leases (6 Pounder, Yellow Jack, and Landlubber Units). The Examiners recommend the Commission deny the request to classify the Fields as "Salvage." The Examiners recommend the Commission deny Blackbeard's request for field-wide MER, increased oil allowable, and net GOR, increased daily casinghead gas limit of 3,000 Mcf per day. The Examiners recommend the Commission deny cancellation of Blackbeard's overproduction in the Fields.

II. Jurisdiction and Notice[2]

Sections 81.051 and 81.052 of the Texas Natural Resources Code provide the Commission with jurisdiction over all persons owning or engaged in drilling or operating oil or gas wells in Texas and the authority to adopt all necessary rules for governing and regulating persons and their operations under the jurisdiction of the Commission.

On September 21, 2020, the Hearings Division of the Commission sent a Notice of Hearing ("Notice") to Applicant and all those entitled to notice, setting a hearing date of October 6, 2020.[3] The Notice contains (1) a statement of the time, place, and nature of the hearing; (2) a statement of the legal authority and jurisdiction under which the hearing is to be held; (3) a reference to the particular sections of the statutes and rules involved;

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[1] Statewide Rule 10 is 16 Tex. Admin. Code §3.10.

[2] The hearing transcript in this case is referred to as "Tr. [number], [pages], [lines]." Blackbeard's exhibits are referred to as "Applicant Exhibit [exhibit no(s).]." Millwee's exhibits are referred to as "Protestant Exhibit [exhibit no(s).]."

[3] *See* Notice of Hearing issued September 21, 2020.

and (4) a short and plain statement of the matters asserted.[4] Consequently, all received 10 days' notice.

III. Applicable Legal Authority

Generally, Statewide Rule 10 restricts the production of oil and gas from a single stratum, but the rule also provides for exceptions to prevent waste, promote conservation or protect correlative rights. Statewide Rule 10 states:

> (a) General prohibition. Oil or gas shall not be produced from different strata through the same string of tubulars except as provided in this section. As used in this section, "different strata" means two or more different commission-designated fields, or one or more commission-designated fields and any other hydrocarbon reservoir.
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> (b) Exception. After notice and an opportunity for a hearing, the commission or its delegate may grant an exception to subsection (a) of this section to permit production from a well or wells commingling oil or gas or oil and gas from different strata, if commingled production will prevent waste or promote conservation or protect correlative rights.[5]

Statewide Rule 45(a)(2) sets forth the 1969 Yardstick Allowable presently applicable to the Fields.[6] The Commission may determine and prescribe by order the permitted gas-oil ration for the operation of wells.[7] Statewide Rule 49(a) sets the producing gas-oil ratio for any oil reservoir at 2000 cubic feet of gas per barrel of oil. [8] If it has been determined after notice and opportunity for hearing that another producing gas-oil ratio is more appropriate, that specific gas-oil ratio may be adopted, applicable as to a particular well, lease or field.

Statewide Rule 52(g) provides that an operator may request in writing to the commission that overproduction for a specific lease can be canceled.[9] If objection to the request is received, the operator may request the matter be scheduled for public hearing. The burden of proof is on the applicant operator.[10]

IV. Discussion of Evidence

A. Summary of Blackbeard's Evidence and Argument

1. The Fields

The Sand Hills (Clear Fork) field was discovered December 1, 1966. The Sand Hills (Clear Fork) field has the following field rules (not limited to the following):

1. 2000:1 scf/bbl standard gas oil ratio ("GOR"), per statewide rules.

[4] *See* Tex. Gov't Code §§ 2001.051, .052; 16 Tex. Admin. Code §§ 1.42, 1.45.
[5] 16 Tex. Admin. Code § 3.10.
[6] 16 Tex. Admin. Code § 3.45(a)(2).
[7] See Tex. Nat. Res. Code §85.046.
[8] 16 Tex. Admin. Code § 3.49(a).
[9] 16 Tex. Admin. Code § 3.52(g)(1).
[10] 16 Tex. Admin. Code § 3.52(g)(2).

2. Top oil allowable of 84 barrels of oil per day ("bopd"), per 1965 yardstick.
3. 330-foot lease line spacing.
4. Zero between well spacing.
5. 40-acre base units, 20-acre optional units.[11]

Out of 42 wells in the Sand Hills (Clear Fork) field, Blackbeard operates 30 wells.[12] The proration schedule also denotes ten leases within the Sand Hills (Clear Fork) field for which Blackbeard has obtained individual Rule 10 exceptions.[13] Notably, Millwee does not carry any wells on the Sand Hills (Clear Fork) field, nor does Tumbleweed.[14] The Sand Hills (Clear Fork) field is the uppermost Clear Fork formation.[15]

The Sand Hills (Tubb) field was discovered in 1930. The Sand Hills (Tubb) field is stratigraphically below the upper Clear Fork formation which is the Sand Hills (Clear Fork) field.

The Sand Hills (Tubb) field has the following field rules (not limited to the following):

1. 330-foot lease line spacing.
2. 660-foot between well spacing.
3. 40-acre base units, 20-acre optional units.[16]

Michael St. Germain, Landman for Blackbeard, testified in support of the Application. Mr. St. Germain is the Permian land manager and worked in the area beginning 2016.[17] Using Railroad Commission sourced lease information, Mr. St. Germain identified offsetting operators to the subject leases in the Fields.[18] He identified Stronghold Energy Operating II, LLC to the east and Williams Oil Company to the north and northeast. Mr. St. Germain identified one Millwee well in a westerly adjacent section, but it is in the southwest quarter of Section 5, known as the Edwards well.[19]

Blackbeard's subject leases occupy the entirety of Abstract-A1107, Section 26. They are named the Landlubber leases ("Landlubber Leases"). The Landlubber Leases are comprised of the following: Landlubber N, Landlubber NE, Landlubber CW, Landlubber CE, and Landlubber. In the section to the south, Abstract A-1111, Section 4, Blackbeard also operates the '6 pounder' leases ("6 Pounder Leases"). The 6 Pounder Leases are comprised of the following: 6 Pounder NW, 6 Pounder NWNE, 6 Pounder NE, 6 Pounder NWSW, 6 Pounder NESW, 6 Pounder SW. The subject acreage also includes the southwest quadrant of Abstract-1113, Section 8, located to the southeast of the 6 Pounder and Landlubber Leases. These leases are referred to as the Yellow Jack leases ("Yellow Jack Leases"). The Yellow Jack Leases are comprised of the following: Yellow Jack SWSW and the Yellow Jack E2SW.[20]

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[11] Applicant Exhibit No. 2. Tr. Vol. 2, Pg. 20, Lns. 12-22.
[12] Tr. Vol. 2, Pg. 22, Lns. 13-15.
[13] Applicant Exhibit No. 2.
[14] Tr. Vol. 2, Pg. 23, Lns. 19-25.
[15] Tr. Vol. 2, Pg. 24, Lns. 13-20.
[16] Tr. Vol. 2, Pg. 25, Lns. 8-10.
[17] Tr. Vol. 2, Pg. 43, Lns. 7-8.
[18] Tr. Vol. 2, Pg. 45, Lns. 1-25.
[19] Tr. Vol. 2, Pg. 45, Lns. 1-25. Applicant Exhibit No. 3.
[20] Applicant Exhibit No. 3.

Millwee is not directly offset to any of these leases, but the Edwards well is in an adjacent section to the subject leases.[21] The majority of Millwee's wells are located to the southeast of the subject leases. Millwee's wells primarily produce from San Andres fields such as the McKnight and Judkins.[22] Millwee also operates wells in this area that produce from the Tubb only and three wells that are completed in the Clearfork and Tubb.[23] Blackbeard refers to the area between the subject leases from Millwee's development as the Waddell or the Waddell Leases ("Waddell Leases").[24]

Mr. St. Germain testified that Blackbeard does not have 100% working interest in the wells on the subject leases. He stated that Blackbeard had 92.5% working interest in the Landlubber Leases and approximately 90% in the 6 Pounder Leases.[25] Mr. St. Germain testified that Blackbeard has approximately 70% working interest in the Waddell Leases and has an equity commitment from Natural Gas Partners. Mr. St. Germain believed that an operator with capital support would make decisions differently than an operator with a 100% working interest. He opined that the performance of Blackbeard's wells in the area justify development.[26]

Applicant's Exhibit No. 34 is a letter, dated January 15, 2021, from Stronghold Energy II, LLC's CEO to the Commission in support of the Application. Steven E. Weatherl writes, "Stronghold Energy II, LLC is in support and agreement and has no objection to Blackbeard Operating LLC's Application dated June 1, 2020, for amendment of the Field Rules for the Sand Hills (Clear Fork) Field and Sand Hills (Tubb) Field, Crane County Texas."[27]

2. Geological Setting

Rene Wiksveen, Geologist for Blackbeard, prepared exhibits and testified in support of the Application. Using a well log cross-section, Ms. Wiksveen described the geological setting of the formations comprising the Fields. The Clearfork formation is divided into the Lower Clear Fork formation, the Tubb formation, and the Upper Clear Fork formation. The Glorieta is adjacent on top of the Upper Clear Fork formation. The Wichita-Albany bounds the Clear Fork package underneath. This stratigraphy is consistent throughout the Sand Hills fields.[28] The regulatory definition for the Sand Hills (Tubb) field include the Tubb and Lower Clear Fork formation. The regulatory definition of the Sand Hills (Clear Fork) includes the Upper Clear Fork formation.

Ms. Wiksveen defined the Millwee's Edwards well as the Edwards No. 1, completed in the Tubb designated interval and carried in the Crawar (Tubb) field.[29] Ms. Wiksveen compared Millwee's Edwards No. 1 well to the Landlubber No. 20 well. She testified that it appears that the top of the Edwards No. 1 well's perforations might occur in the Tubb formation, but most of the perforations are actually in the lower Clear Fork.

[21] Tr. Vol. 2, Pg. 46, Lns. 21-25.
[22] Tr. Vol. 2, Pg. 60, Lns. 4-10.
[23] Applicant Exhibit No. 8.
[24] Tr. Vol. 2, Pg. 62, Lns. 11-21.
[25] Tr. Vol. 3, Pg. 104, Lns. 16-18.
[26] Tr. Vol. 3, Pg. 104-106, Lns. 1-25.
[27] Applicant Exhibit No. 34.
[28] Tr. Vol. 2, Pg. 67, Lns. 2-8.
[29] Tr. Vol. 2, Pg. 58, Lns.8-14.

According to Ms. Wiksveen, the Landlubber No. 20 well is a good representation of the completions happening on the Landlubber Leases. The distance between the Landlubber No. 20 well and the Edwards No. 1 well is approximately 8,980 ft. The Landlubber No. 20 well was completed with multiple stages of perforations spanning approximately 900 feet, or nearly the entire Clear Fork package.[30] Ms. Wiksveen testified multistage fracture stimulation and unconventional techniques allows Blackbeard to recognize pay in zones not traditionally considered pay. Most of the conventional pay zones in this interval have been depleted by historical production going back as far as the 1930's.[31] Ms. Wiksveen stated that searching for overlooked pay zones is the overriding strategy of Blackbeard's development.[32]

Ms. Wiksveen testified that the Clear Fork is a "package" of shallow marine carbonates deposited in a time of small sea level changes.[33] The Tubb formation is a period of longer, low-standing sea, so more silt is deposited. The Tubb formation acts a district break between the Upper and Lower Clear Fork usually recognized as about 100 feet in thickness across the Central Basin Platform. Ms. Wiksveen noted that the Tubb has a hotter gamma ray signature than surrounding formations.[34] The Clear Fork "package" is notorious for being both laterally and vertically discontinuous. She testified there are very few flow units, defined as having similar porosities and permeabilities and are extensively connected.[35] Millwee's Johnson State No. 2 well is the closest well to Blackbeard's Waddell Leases, existing 660 feet from the lease line.

Ms. Wiksveen next presented as Blackbeard's Exhibit 9 a paper titled, "Deposition and Diagenesis of Tubb and Lower Clearfork Carbonate, Sand Hills Field, Crane County Texas."[36] Applicant's Exhibit No. 9 quotes:

> Hydrocarbons are trapped stratigraphically as well as structurally because production is from many porosity zones of varying continuity that pinch out into less permeable carbonate. Porosity and permeability vary considerable within and among producing zones. The reservoirs are initially produced by solution gas drive.

To commingle the Upper Clear Fork, Tubb and Lower Clear Fork formations is to commingle production from all the Clearfork members.[37] Ms. Wiksveen testified that as Blackbeard continues to infill drill, they do not see communication with parent/ child wells, meaning that the flow units are not in communication.[38]

Ms. Wiksveen quoted from a paper entitled, "Infill Drilling Study of a Low-Permeability Carbonate: An Evaluation of Blanket Versus Targeted Infill Drilling Strategies" from 2003:

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[30] Tr. Vol. 2, Pg. 71, Lns. 14-22.
[31] Tr. Vol. 2, Pg. 73, Lns. 10-25.
[32] Tr. Vol. 2, Pg. 73, Lns. 1-25.
[33] Tr. Vol. 2, Pg. 77, Lns. 7-13.
[34] Tr. Vol. 2, Pg. 77, Lns. 1-25.
[35] Tr. Vol. 79. Pg. Lns. 3-9.
[36] [Thesis] (1989).
[37] Tr. Vol. 2, Pg. 103, Lns. 3-6.
[38] Tr. Vol. 2, Pg. 107, Lns. 1-25.

> [M]ost Permian-age carbonate reservoirs in the Permian Basin are characterized by very thick heterogenous pay intervals with significant discontinuities, both laterally and vertically, low reservoir energies, consistent with solution-gas drive oil reservoir as well as low effective permeabilities to oil are manifested by primary production recovery efficiencies typically ranging from 8 to 12 percent on 40-acre well spacing.[39]

Ms. Wiksveen opined that Blackbeard's production results, compared to its offsetting operators, is evidence that they are successful in accessing bypassed pay.[40] On cross examination, Ms. Wiksveen testified that adding infill wells does not prevent the loss of reserves, it allows Blackbeard to access them today.[41] Ms. Wiksveen testified if Millwee would like to postpone its development for decades, its reserves would still be there because Blackbeard would not be draining Millwee's acreage.[42]

3. Productivity of the Fields: Salvage Classification or MER

Blackbeard argues that the 1965 Yardstick allowable should not be applied. Dale Miller, consulting petroleum engineer, testified on behalf of Blackbeard in support of the Application. Examining the proration schedule, Mr. Miller pointed out that most of the older vintage wells in the Sand Hills (Clear Fork) field have very low oil potentials (e.g., zero, one and two barrels per day). It is noted that some of Blackbeard's wells have potentials in excess of the field top allowable of 84 barrels per day.[43]

Due to many wells in the Field producing above the standard 2000 scf/bbl, outlined by Statewide Rule 49 ("SWR 49"), Mr. Miller testified that many of Blackbeard's wells are receiving a penalized oil allowable.[44] All production above the penalized allowable are accounted for as overproduction. Mr. Miller testified not all wells are penalized below the field allowable. Mr. Miller reviewed the proration schedules for the subject leases, and they show that Well No. 22 on the Landlubber lease has a GOR of 466 scf/bbl.[45] The well's potential is 375 bopd and its top allowable is 84 bopd and is not penalized.[46] Well No. 27 has a GOR of 2,976 scf/bbl and is penalized to 56 bopd, due to casinghead gas overproduction.[47] The 6 Pounder NW lease, Well. No. 25 has a top allowable of 11 bopd despite its potential of 275 bopd, as a result of a GOR of 15,836 scf/bbl.[48]

Mr. Ian Smith, petroleum engineer and Vice President of Blackbeard's Permian basin operations, testified in support of the Application. Mr. Smith sponsored Applicant's Exhibit No. 22, which listed daily production rates for the Landlubber, 6 Pounder and the Yellow Jack Leases. From this information, Mr. Smith pointed out the Landlubber No. 19, with daily production more than 300 bopd. On January 2nd, 2020, it produced 489 bopd. Additionally, it shows GORs consistently higher than 2,000 scf/bbl. Around October 2019,

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[39] Applicant Exhibit No. 15.
[40] Tr. Vol. 2, Pg. 118, Lns. 7-16.
[41] Tr. Vol. 3. Pg. 116-117, Lns. 12-25, 1-9.
[42] Tr. Vol. 3, Pg. 132, Lns. 1-25.
[43] Tr. Vol. 2, Pg. 37, Lns. 1-9.
[44] Tr. Vol. 2, Pg. 39, Lns 1-15.
[45] Tr. Vol. 2, Pg. 40, Lns. 8-13.
[46] *Id*.
[47] Tr. Vol. 2, Pg. 40, 8-19.
[48] Applicant Exhibit No. 2.

the Landlubber No. 19 produced more than 500 bopd for nearly a month.[49] Mr. Smith also pointed out the 6 Pounder Northeast No. 31, a relatively modest producer in the field, produces more than the yardstick allowable. Around August 31, 2019, it produced for several days at approximately 170 bopd, but most of its production was below the 84-bopd yardstick allowable.[50] Mr. Smith opined that this demonstrates the differing geology and water cut between the compartmentalized reservoirs.

Stephen "Kyle" Walker testified in his capacity as a reservoir engineer for Blackbeard in support of the Application. Mr. Walker is responsible for identifying future locations to drill additional wells using reservoir forecasting.[51] Mr. Walker uses decline curve analysis to evaluate expected ultimate recovery ("EUR") of wells. Mr. Walker used the Landlubber No. 4 which was completed in the Upper Clear Fork formation only. In November 2019, the Glorieta formation was downhole commingled with no change in oil production. The water production increased, an indication that the majority, if not all, of the oil production is coming from the Clear Fork. The Landlubber No. 4 well has an EUR of 40,598 bbls.[52] Mr. Walker presented similar data from the Landlubber No. 18 well. It was completed as a Tubb-only producer and displayed a sharp decline in production. In May of 2019, the Clear Fork formation was commingled, and its oil production spiked.[53] The Landlubber No. 18 well has an EUR of 56,872 bbls.[54] Next, Mr. Walker presented a plot for the Landlubber No. 19 well. This well was completed as a commingled Tubb and Clear Fork producer. The Landlubber No. 19 has an EUR of 213,391 bbls.[55] Blackbeard argues that this increase in EURs over other completion methods is adding significant reserves.[56]

In contrast, Mr. Walker analyzed Millwee's Edwards No. 1 well. It is not a direct offset, but a Tubb-only producer in the Sand Hills (Tubb) field. Since its completion in 2000 or 2001, he found that 11,000 bbls were produced, along with 19 million cubic feet of gas. From his search of publicly available data, gas reporting had stopped from the well since 2016.[57]

Mr. Miller presented completion reports for previously approved, commingled wells in the Sand Hills (Clear Fork) and Sand Hills (Tubb) Fields.[58] The commingled wells initially produced ("IP") at rates of 30 – 450 bopd, displaying wide variability. Mr. Miller opined that blanket SWR 10 exceptions are superior to field consolidation to avoid Rule 40 conflicts of depth severed mineral ownership.[59] Mr. Miller pointed out that most wells produce above 84 bopd for around one year to several months. Mr. Miller applied for blanket SWR 10 authority and field-wide MER on Blackbeard's behalf to avoid having to apply for hearing on each individual lease.[60] Mr. Miller believed it was a burden to an

[49] Applicant Exhibit No. 22.
[50] Tr. Vol. 2, Pg. 184-185, Lns. 14-25, 1-6.
[51] Tr. Vol. 2, Pg. 202, Lns. 1-25.
[52] Tr. Vol. 2, Pg. 204, Lns. 1-15.
[53] Tr. Vol. 2, Pg. 205, Lns. 10-15.
[54] Tr. Vol. 2, Pg. 205-206, Lns. 8-25, 1-23.
[55] Tr. Vol. 2, Pg. 207, Lns. 2-12.
[56] Tr. Vol. 2, Pg. 206, Lns. 18-23.
[57] Tr. Vol. 2, Pg. 210-211, Lns. 11-25, 1-6.
[58] Applicant Exhibit No. 25.
[59] Tr. Vol. 3, Pg. 32-33, Lns. 1-25, 1-15.
[60] Tr. Vol 3, Pg. 46-47, Lns. 21-25, 1-6.

operator to research and notice operators to obtain individual SWR 10 exceptions.[61] Even with a blanket SWR 10 exception, the operator will still have to file an application and application fee of $375.[62]

Mr. Miller testified that Millwee's Edwards lease in the Crawar, North (Tubb) Field, where the Edwards No. 1 is located, has produced 11,903 barrels and 19,565 Mcf in the previous 20 years since completion. Mr. Miller stated this is "very small" compared to Blackbeard's wells.[63] Mr. Miller testified that using multi-staged fracs, Blackbeard has realized significant improvements in productive capabilities that have never been seen in the field before. Mr. Miller stated, in general, Millwee's wells produce with a higher GOR than Blackbeard's wells do. He states that the variance in GOR is another indicator of compartmentalized reserves.[64]

4. Blackbeard's Development and Surface Equipment

Mr. Smith testified that the concept of commingling the Clear Fork package was modelled after early 2000's successful attempts to commingle the Wolfcamp and Spraberry formation production. The commingled Wolfberry play acted as proof of concept that the commingling of multiple zones could create economic projects, while the zones, independently, are not economic. Commingling would allow Blackbeard to cover the capital expense to drill and complete the well. The success of the Wolfberry led operators to commingle the Wolfcamp and Bone Springs formations forming the Wolfbone play. Using this strategy, Blackbeard focused on the less desirable areas of the Central Basin Platform Clear Fork formations.[65] In addition to its commingling strategy, Blackbeard brought an unconventional mindset to formations that would have classically been thought of as conventional, employing multi-stage fracture stimulation. [66]

Mr. Smith reiterated that Blackbeard is preventing waste by accessing bypassed reserves. Oil, water, and gas are put into a pipeline to prevent any flaring or venting.[67] Mr. Smith also pointed out that commingling allows Blackbeard to drill multiple wells per pad, reducing the surface footprint and reducing overhead powerlines and above ground flowlines. The waste prevented not only includes minerals but surface and environmental.[68] Along a similar line, Mr. Smith testified that all of Blackbeard's gas goes into the pipeline under normal circumstances.[69] Additionally, Targa built a $20 million compressor station south of the 6 Pounder Leases.[70] Mr. Smith's expectation was that the gathering system could handle the additional gas if an increased MER and net GOR was granted.[71]

Mr. Smith used the production of five Landlubber wells to demonstrate hydraulic discontinuity between Blackbeard's Clear Fork completions. As new wells were brought

[61] Tr. Vol. 3. Pg. 51, Lns. 9-22.
[62] Tr. Vol. 3, Pg. 58, Lns. 10-14.
[63] Tr. Vol. 4, Pg. 182, 11-19.
[64] Tr. Vol. 4, Pg. 192, Lns. 1-7.
[65] Tr. Vol. 2, Pg. 123-124, Lns. 17-25, 1-25.
[66] Tr. Vol. 2, Pg. 125, Lns. 9-14.
[67] Tr. Vol. 2, Pg. 166, Lns. 14-23.
[68] Tr. Vol. 2, Pg. 167-168, Lns. 17-25, 1-3.
[69] Tr. Vol. 2, Pg. 166, Lns. 19-23.
[70] Tr. Vol. 3, Pg. 231-232, Lns. 24-25, 1-2.
[71] Tr. Vol. 3, Pg. 231-232, Lns. 17-25, 1-5.

online in a 40-acre development pattern, no effect was observed in the offsetting wells.[72] Mr. Smith testified that the compartmentalization observed in the Clear Fork fields is the foundation of Blackbeard's business model. He testified, "the compartmentalization allows us to acquire acreage, and we're able to drill more wells on less acreage and recover more reserves. So, it's very much so part of the business model."[73]

Blackbeard employed this technique in similarly situated fields such as the Marston Ranch (Clear Fork) when blanket commingled with the Janelle Southeast (Tubb). Similarly, Blackbeard was also successful in blanket commingling the Monahans North (Clear Fork) and the Monahans (Clear Fork) fields (Oil and Gas Docket No. 08-0317446). Mr. Smith noted those fields were commingled without protest, making the Application Blackbeard's third field in the Central Basin Platform that has employed this concept, albeit by seeking a fieldwide exception to SWR 10.[74] Other operators such as Williams Oil Company ("Williams") have also begun utilizing Blackbeard's operational and regulatory techniques on acreage offset to Blackbeard's leases. Williams commingled the Marston Ranch (Clear Fork) formation with the Tubb formation.[75]

Mr. Smith testified that all of Blackbeard's wells in the subject Fields were on artificial lift. The wells will not flow to surface on their own reservoir pressure. [76] The wells were put onto powerful sucker rod pumps and pumped at high rates using fiberglass rods. This was a cost cutting technique to replicate daily fluid volumes of an electrical submersible pump ("ESP") without the exorbitant cost.[77] The fiber glass rods allowed Blackbeard to use a technique called "flumping." This entailed pumping the well off at high rates to keep hydrostatic pressure of the backside of the tubing, which allowed oil and water to flow up the casing by tubing annulus. With these modern techniques, Mr. Smith believed that the Yardstick allowable was outdated to regulate newer completion and production strategies.[78] It was Mr. Smith's opinion that no conservation benefit would be realized by reducing the rates to achieve an 84-bopd allowable on a well that could produce more than 300-bopd.[79] He stated that was physically possible to stop and restart the pumps to achieve the yardstick allowable, but it would result in many negative repercussions such as corrosion and bacteria and would be detrimental to the reservoir.[80] On clarifying question from the Examiners, Mr. Smith testified that the wells behave like unconventional resources and produce at high rates at the beginning of their life, not for years.

Mr. Smith explained that "each well is at a different depth and each design – you have to run a design to see the specific capacities of that piece of equipment." Mr. Smith addressed the appropriateness of Blanket or field-wide requests by saying, "so we don't have to come back and do this again."[81] Mr. Smith testified, "So I think the yardstick allowable that's included is the long term—to me it's a number – I don't know why it was defined at 84 barrels a day…when we make business decisions to meet an allowable or

[72] Applicant Ex. No. 17.
[73] Tr. Vol. 2, Pg. 129. Lns. 8-11.
[74] Tr. Vol. 2, Pg. 131-132, Lns. 15-25, 1-3.
[75] Tr. Vol. 2, Pg. 133, Lns. 2-9.
[76] Tr. Vol. 2, Pg. 170, Lns. 11-25.
[77] Tr. Vol. 2, Pg. 170-171, Lns. 21-25, 1-8.
[78] Tr. Vol. 2, Pg. 175, Lns. 6-15.
[79] Tr. Vol. 2, Pg. 198-199, Lns. 21-25, 1-25.
[80] Tr. Vol. 2, Pg. 175, Lns. 16-25.
[81] Tr. Vol. 4, Pg. 241-242, Lns. 14-25, 1-3.

not meet an allowable we try to make – efficiently prevent waste and drain as many reserves as possible."[82]

On cross-examination, Mr. Smith testified that before Blackbeard began applying unconventional techniques to the subject Fields, they would have been close to abandonment and would meet the definition of a salvage field.[83] Mr. Smith also testified that the compartmentalization results in many reservoirs with differing bubble points, not one field-wide bubble point.[84] Mr. Smith reiterates that the acreage position was not an enviable one when Blackbeard began its work in the Fields.[85] It only became desirable when they proved there were bypassed reserves to be produced. Mr. Smith testified that the reservoir pressure and individual compartmentalized reservoirs are too low to flow, in any case.[86] The wells were put on artificial lift from day one.[87] According to Mr. Smith this did not allow Blackbeard to do any manner of step-rate testing or sensitivity testing.[88] The only way for the well to flow was to completely remove the hydrostatic pressure by pumping the fluid off the backside of the well. Mr. Smith testified that Blackbeard's pumping units did not have variable speed drives and the frequency cannot be adjusted.[89]

5. Past Commission Action

Blackbeard provided six final orders in which the Commission approved commingling within the Clearfork interval, the entire Clear fork plus zones above and below.[90] Pursuant to these orders, these zones been effectively commingled, not by blanket SWR 10 exceptions, but by designating a correlative interval which includes these zones in the field rules of various fields.

Additionally, Blackbeard provided fifteen cases where unprotested final orders for blanket SWR 10 exceptions and individual well administrative approvals where the Commission has granted authority to commingle Tubb and Clear Fork with other zones.[91] Millwee was the applicant in nine of these dockets. Devon received authority to commingle the Armer (Clear Fork) and the Armer (Tubb) fields.[92] Blackbeard has since assumed operations of these wells. These fields are one mile from the Fields.[93]

Blackbeard provided previously approved unprotested final orders granting field-wide adoptions of MER, net GOR and cancellation of overproduction. This included one in which the subject field was the Armer (6350) that is immediately adjacent to the east of the Fields and contains the Tubb formation.[94]

Blackbeard also provided a Commission final order in which the applicant asked

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[82] Tr. Vol. 4, Pg. 245, Lns. 1-7.
[83] Tr. Vol. 3. Pg. 139, Lns. 6-10.
[84] Tr. Vol. 3. Pg. 143, Lns. 7-25.
[85] Tr. Vol. 3. Pg. 146, Lns. 1-24.
[86] Tr. Vol. 3, Pg. 160, Lns. 18-23.
[87] Tr. Vol. 3, Pg. 160-161, Lns. 23-25, 1-3.
[88] Tr. Vol. 3, Pg. 163, Lns. 12-23.
[89] Tr. Vol. 3, Pg. 187, Lns 15-25.
[90] Applicants Exhibit No. 19.
[91] Applicant Exhibit No. 20.
[92] *Id*.
[93] Tr. Vol. 2, Pg. 165-166, Lns. 19-25, 1-5.
[94] Tr. Vol. 3, Pg. 88-89, 3-25, 1-14.

for increased oil and gas allowable on a lease-basis and the Commission approved the increase for the field. This docket (Oil and Gas Docket No. 08-0229993) pertains to the Sand Hills (Tubb) and Running W (Wichita-Albany) Fields.[95] In all the dockets highlighted by Blackbeard, Mr. Miller pointed out that the Commission found that the cancellation of overproduction did not damage correlative rights or affect other operators in the field.[96]

6. Overproduction in the Fields

According to the March 2021 proration schedule for the Landlubber lease (Id. No. 48999), it is 166,107 barrels of oil overproduced.[97] Mr. Miller reiterated that a large portion of this overage was due to gas overproduction and subsequent penalized oil allowable because the yardstick daily casinghead limit "does not fit this field."[98] Mr. Miller testified that if reservoir energy is a function of GOR, then Blackbeard's lower GOR indicated that Blackbeard is producing more efficiently and would recover more reserves.[99]

Blackbeard further argued that Rule 52(g) allows for administrative cancellation of overproduction. Mr. Miller opined that administrative process was added to the rule in 2016 to address issues out of the failure to update the Yardstick since 1965. Mr. Miller testified there is no limitation in the rule on the number of times an operator may request cancellation on a particular lease.[100] The request shall include offsetting operators in the requested field for purpose of notice.[101] Mr. Miller further stated that in this case, Millwee would not have been noticed as they do not have any wells in the Sand Hills (Clear Fork) field.[102] In response to a clarifying question from the Examiner, he went on to say even if some of the production is from the Tubb, which Millwee does operate wells in, they do not offset any of these leases and still would not be entitled to notice of cancellation, in any case.[103] Mr. Miller testified that cancellation of Blackbeard's overproduction will not harm Millwee. The distances between Blackbeard's and Millwee's acreage is too great.

7. Blanket Rule 10 Exception

Blackbeard argued that commingling production of the Sand Hills (Tubb) and Sand Hills (Clear Fork) would extend the economic life of the wells in the Fields. Mr. Miller provided decline curves for the Landlubber No. 18.[104] Before commingling, the Tubb-only completion had an EUR of 21,000 bbl of oil and 118,000 Mcf of gas. After commingling the Clear Fork, the EUR is 69,000 bbl of oil and 383,000 Mcf of gas. Additionally, the Tubb-only completion would have reached is economic limit in 2023 and is now extended to approximately 2035. The Economic limit was expected to increase because the operating costs of the well per unit of volume would go down considerably by producing and commingling oil and gas from both Fields in the same wellbore. Blackbeard argued this was the reason for seeking a fieldwide exception to SWR 10 would prevent waste

[95] Applicant Exhibit No. 33. Tr. Vol. 3, Pg. 90, Lns. 7-19. (Note: The Examiners in this docket found the most efficient rate was not at the highest rate tested.)
[96] Tr. Vol. 3, Pg. 92, Lns. 7-10.
[97] Tr. Vol. 4, Pg. 222, Lns. 20-24.
[98] Tr. Vol. 4, Pg. 223, Lns. 2-10.
[99] Tr. Vol. 4, Pg. 232, Lns. 17-24.
[100] Tr. Vol. 3, Pg 82, Lns 20-22.
[101] Tr. Vol. 3, Pg. 82-83, Lns. 25, 1-3.
[102] Tr. Vol. 3, Pg. 83, Lns. 3-5.
[103] Tr. Vol. 3, Pg. 81-86, 1-25.
[104] Applicant Exhibit No. 18.

and promote conservation.[105]

B. Summary of Millwee's Evidence and Argument

Millwee is a family-owned oil and gas company located in Midland, Texas. Millwee describes itself as a "mom-and-pop" operator, in the business for 49 years.[106] Millwee argues that it does not oppose SWR 10 exceptions, individually, but otherwise opposes granting all other relief requested by Blackbeard.[107]

Sandra Millwee Jordan, president, treasurer and landman for Millwee, testified in opposition of the Application. Ms. Jordan's father first purchased the Gulf Tubb lease, well Nos. 1 and 2 in 1973.[108] Ms. Jordan testified that these wells are continuing to produce and make revenue to this day.[109] Ms. Jordan believed that Blackbeard's request will cause waste and lead to premature abandonment of the Fields.[110] She was also concerned that Blackbeard's completions will cause the Field's wells to reach an economic limit prematurely and could drain Millwee's acreage. Ms. Jordan further noted that Blackbeard presented no evidence supporting their requests.[111] Ms. Jordan testified that this was the first time Millwee protested an application at the Railroad Commission.[112] Millwee was compelled, however, to protest the Application to protect its rights and assets.[113] Ms. Jordan testified that Millwee owns 100% of its working interest and does not have backing from a bank, partners, or investors.[114] Millwee's business strategy was to value the preservation and careful management of its assets over short-term cash-flow considerations.[115] Ms. Jordan opined that Blackbeard likely had different interests and time scales in mind when they make decisions.[116]

Ms. Jordan received notice three to four days after the notice of hearing's date of September 21, 2020. Ms. Jordan was confused as to what relief Blackbeard was requesting. The notice mentioned cancellation of overproduction but did not mention how much overage has occurred. To Ms. Jordan, it seemed that the relief requested covered all of Crane County.[117] Ms. Jordan was concerned by the request to cancel overproduction because operators in the area shut-in wells rather than overproduce.[118] Ms. Jordan was able to secure Blackbeard's hearing request letter but found no further clarification. Ms. Jordan obtained a letter, dated April 29th, 2020, from the Commission to Blackbeard entitled Notice of Intent to Cancel P-4 Certificate of Compliance. This letter allowed Ms. Jordan the first opportunity to see the overage Blackbeard was requesting cancellation. The overages were 160,717 barrels and 216,082 Mcf of gas. Ms. Jordan argues that Millwee objects to the cancellation of overproduction because Blackbeard has not made any attempt to avoid it. It is her opinion that Blackbeard should abide by the

[105] Tr. Vol. 3, Pg. 66-67, Lns. 14-25, 1-22. Applicant Exhibit No. 28.
[106] Tr. Vol. 4, Pg. 11, Lns. 7-10.
[107] Tr. Vol. 4, Pg. 11, 11-19.
[108] Tr. Vol. 4, Pg. 15, Lns. 10-12.
[109] Tr. Vol. 4, Pg. 17, Lns. 10-16.
[110] Tr. Vol. 4. Pg. 23, Lns. 19-24.
[111] Tr. Vol. 4, Pg. 24, Lns. 13-20.
[112] Tr. Vol. 4, Pg. 25, Lns. 18-25.
[113] Tr. Vol. 4, Pg. 25-26, Lns. 18-25, 1-2.
[114] Tr. Vol. 4, Pg. 35, Lns. 1-3.
[115] Tr. Vol. 4, Pg. 35, Lns. 16-20.
[116] Tr. Vol. 4, Pg. 36, Lns. 1-13.
[117] Tr. Vol. 4, Pg. 26-27, Lns. 4-25, 1-2.
[118] Tr. Vol. 4, Pg. 26, Lns. 13-18.

same rules all other operators are instructed to follow. She felt that cancelling overproduction in this case would make Commission rules meaningless and incentivize other operators to follow suit"[119]

Millwee expressed grave concerns about Blackbeard's request for salvage field classification. Ms. Jordan started by saying that she did not initially understand what "salvage allowable classification" meant.[120] She did not understand why Blackbeard was attempting to classify the Fields as salvage with this level of production.[121] Ms. Jordan testified that the Fields are not uneconomical or even close to being plugged or abandoned. Ms. Jordan contacted the proration department of the Commission to obtain general information about the requested salvage classification. She was told that salvage was usually applied to fields producing at very low rates and could not achieve assigned allowables.[122]

Millwee argued that a salvage classification is a means for Blackbeard to obtain unlimited allowable and "game" the allowable system. Ms. Jordan testified that these fields are only in "second phase," there have been no horizontals attempted, and the Fields are still producing and providing income to Millwee.[123] Millwee argues that salvage classification for the Fields would circumvent the allowable system in general.[124] Ms. Jordan testified that Millwee's gas contract is being negotiated and Millwee has shut-in the casinghead to prevent gas production.[125] Ms. Jordan states that no Millwee wells in the Sand Hills (Tubb) field are able to produce at the 84-barrel a day yardstick allowable without being reworked.[126] She stated that Millwee is debating whether they will pursue drilling plans on an offset tract.

Ms. Jordan testified that Millwee did not object to SWR 10 exceptions but did object to blanket SWR 10 exceptions. She testified that if a blanket SWR 10 exception authority was approved, then Millwee would no longer be notified of what the other operators are doing, and they would not have to give any supporting information on offset leases.[127]

Protestant's Exhibit No. 8 is a letter from the Examiners requesting 30 days of continuous testing at various rates and achieving at least five days of stabilized results. Ms. Jordan objected to granting any MER allowable because of a lack of evidence for the need of an allowable increase.

Daniel Jordan, petroleum engineer and Chief of Operations for Millwee, was the second witness in protest of the Application. Mr. Jordan testified that Millwee produced its leased mineral interest as a long-term investment for its mineral owners.[128] Millwee was committed to producing the minerals as efficiently as possible to prevent waste. Mr. Jordan conceded that Millwee has no wells in the Sand Hills (Clear Fork) field and all the wells Millwee operates in the Sand Hills (Tubb) field were completed by previous

[119] Tr. Vol. 4, Pg. 40, Lns. 18-25.
[120] Tr. Vol. 4, Pg. 27-28, Lns. 9-25, 1-5.
[121] Tr. Vol. 4, Pg. 31, Lns. 4-9.
[122] Tr. Vol. 4, Pg. 33-34, Lns. 18-25, 1-8.
[123] Tr. Vol. 4, Pg. 36, Lns. 5-12.
[124] Tr. Vol. 4, Pg, 107, Lns. 1-5.
[125] Tr. Vol. 4, Pg. 152, Lns. 21-25.
[126] Tr. Vol. 4, Pg. 160, Lns. 6-12.
[127] Tr. Vol. 4, Pg. 38, Lns. 19-25.
[128] Tr. Vol. 4, Pg. 45, Lns. 2-9.

operators.

During his later testimony, Mr. Jordan stated that, the reservoir's natural drive mechanism should be preserved for maximum drainage. "If the wells are produced ignoring the bubble point, waste is guaranteed to occur."[129] Mr. Jordan then listed his specific concerns about Blackbeard's Application:

1. Blackbeard presented no reservoir work to describe and define the reservoir in each of the Fields subject to the hearing.
2. Blackbeard presented no testing to determine MER or change to yardstick allowable.
3. Blackbeard did not inform the Commission, Examiners, or Millwee of the requested MER values until after the hearing had begun.
4. Blackbeard presented no evidence to support 300 bopd with 3,000 mcf of gas per day.
5. Blackbeard provided no evidence to support an unlimited allowable.
6. There was no evidence the Fields should be classified as salvage.
7. Salvage classification has not been defined by the Commission in the Texas Administrative Code.
8. Blackbeard's Application would cause waste by overproducing and abnormally reducing the reservoir pressure to far below the bubble points, causing gas to come out of solution and leaving oil in the rock pores, increasing the GOR and water production.
9. All combined, will lead to waste and premature abandonment of the Fields.
10. Blackbeard's request to cancel overproduction is not justified and will harm other operators.
11. Blackbeard has adopted a short-term strategy to increase cash flow at the expense of proper management of the Fields.[130]

Mr. Jordan thought it was reasonable to expect some original reservoir work performed by Blackbeard, including bottomhole pressure data, to properly characterize the reservoir. Mr. Jordan provided a paper entitled "History of the Amerada Pressure Gauge"[131] regarding the importance of bottomhole pressures to reservoir characterization.[132] Based on this authority, it was Mr. Jordan's belief that knowledge of bottom hole pressures was fundamental in determining the most efficient methods of recovery and the most efficient lifting procedure. [133]

Mr. Jordan outlined several ways in which Blackbeard could have provided the testing data requested by the Examiners:

> The wells may not be flowing without artificial lift, but an operator can still run rate sensitivity tests to gather information…in order to determine a most efficient rate. Fluid from the well is flowing through the flowline to the test facility regardless of pumping or flowing, rates can be varied for both.

[129] Tr. Vol. 4, Pg. 40, Lns. 18-21.
[130] Tr. Vol. 4, Pg. 48-49, Lns. 2-25, 1-13.
[131] Protestant Exhibit No. 9.
[132] Tr. Vol. 4, Pg. 50, 17-25.
[133] Protestant Exhibit No. 9.

Mr. Jordan then described physical adjustments to the crank of a pumpjack that can vary the length of the stroke and frequency. Additionally, he noted that changing the downhole tubing pump, in concert with surface modifications, would provide extensive data on varied production rates. Mr. Jordan believed that Blackbeard knew how to conduct this testing; the chance of getting a configuration that produces the current rates could not be a guess on Blackbeard's part.[134]

Mr. Jordan testified that starting and stopping the pumping units was not likely to cause damage to the wells. In Mr. Jordan's experience in the field, wells were routinely shut down for repairs and weather and did not result in damage to the wells or their production. He did not think there was any reason why the Blackbeard wells could not be shut in to recover overproduction."[135]

Millwee shut in all its wells in the area for the winter storm of February 2021. Millwee was issued a "force majeure" letter from Plains Marketing, L.P. communicating it was suspending its contracts and may include a reduction in nominated volume for the month of the storm.[136] Similar letters were received from Targa and Energy Transfer Company, the gas purchaser and gas gatherer, respectively. Mr. Jordan testified that these conditions would have applied to all operators in the Fields, including Blackbeard. No damage to the wells occurred; some came back with better rates after they stabilized. It took Millwee five to eight (5-8) days to get all the wells back online.

> My opinion is that they have not proven that rate for any single well, so how can it possibly be used to prove a 300-barrel-per-day MER for an entire lease or an entire field or two entire fields? Without any reservoir engineering and geology work, any number is either a guess or what is needed to satisfy some financial or cashflow hurdles.[137]

Mr. Jordan thought that Blackbeard was "over-completing" the wells to accelerate production and cashflow. Mr. Jordan believed that the choice of large pumping units was an indication that Blackbeard had calculated the rate at which fluids would be produced. Mr. Jordan did not think that producing the wells at the requested rates by Blackbeard would prevent waste. To the contrary, he believed that increasing the GOR/MER for the Fields would result in a short-term increase in production but decreases in overall EUR.[138]

Mr. Jordan further cited to Blackbeard's Exhibit No. 15, "Reservoir Characterization and Infill Drilling Study of a Low-Permeability Carbonate: An Evaluation of Blanket Versus Targeted Infill Drilling Strategies" as further support for his assertion that additional data was needed to evaluate the requested relief.

> In order to maximize production, it is necessary to gather data to properly characterize the field. Without that data and operator can end up drilling wells with poor economic returns. With that data, field development can be

[134] Tr. Vol. 4, Pg. 69-70, Lns. 16-25, 1-5.
[135] Tr. Vol. 4, Pg. 72, Lns. 7-10.
[136] Protestant Exhibit No. 14.
[137] Tr. Vol. 4, Pg. 80, Lns. 18-25.
[138] Tr. Vol. 4, Pg. 83, Lns. 1-5.

optimized. When bubble point drive mechanisms are maintained, the ultimate recoveries can be significantly increased.

Mr. Jordan found inconsistencies with Blackbeard's reported pressures on the administrative application for SWR 10 exception authority on the Stede Bonnet No. 5 well. Blackbeard reported the reservoir pressures of the Tubb field to be 1,000 pounds per square inch ("psi") and the Clear Fork reservoir to be 1,200 psi. This was not consistent with the Blackbeard's claim that it does not have measurements of downhole pressure data or estimates in testimony of field pressures of 200 psi to 600 psi. Mr. Jordan concluded that Blackbeard did not understand the reservoir pressure of the Fields. Additionally, Mr. Jordan noted that other operators routinely enter water analysis data to show the Commission that there will be no scaling issues due to cross flow in differently pressured zones. Blackbeard did not provide this, he argued. Mr. Jordan believed that any of the times Blackbeard was shut down for repairs on its wells, there would have been an opportunity to test or reconfigure the wells to test flow rates without risking lost production.

Mr. Jordan testified that approval of the Application would set a precedent that an operator need not provide evidence to obtain an MER.[139] He further argued that Blackbeard chose to read the Examiners' request for testing letter so narrowly to avoid doing testing of any kind. "[T]he clear spirit of the letter from the Commission is go do testing."[140]

Millwee's wells are in a stripper format. Mr. Jordan explained that, on a decline curve, Millwee's wells would be on the flat horizontal portion approaching zero, stripping what is left in the reservoir.[141] Mr. Jordan testified that Millwee has not collected bottomhole pressure data on its wells when it had the opportunity to do so because Millwee is not planning to drill any infill wells.[142] Mr. Jordan conceded, however, that if the Application were granted, nothing about Millwee's current production or operations would change.[143]

V. Examiners' Analysis

The Examiners recommend the Commission deny Blackbeard's application for a blanket SWR 10 exception for the Fields but recommend granting exception for the subject leases. The Examiners further recommend denial of field-wide MER and net GOR allowable increases as well as denial of the request for salvage classification for the Fields. Applicant did not meet its burden to prove that field-wide or blanket application of these requests is appropriate. The Examiners recommend denial of cancellation of Blackbeard's overproduction in the Fields.

[139] Tr. vol. 4, Pg. 121, Lns. 4-7.
[140] Tr. Vol. 5. Pg. 27, Lns 12-17.
[141] Tr. Vol. 4, Pg. 129, Lns. 18-24.
[142] Tr. Vol. 4, Pg. 141, Lns. 2-7.
[143] Tr. Vol. 4, Pg. 165. Lns 5-9.

i) Salvage Classification

Blackbeard has drilled and completed wells in the Fields using multi-stage fracturing techniques, resulting in much higher than allowable initial potentials. It seeks a salvage allowable classification for the Fields in order to address the high initial potentials observed in some wells drilled in the Fields and high production rates obtained after putting the wells on artificial lift. The Examiners are not aware of any such classification being granted under circumstances similar to those presented in this case. The limited authority and prior guidance provided by Blackbeard also militates against adoption of a salvage field classification.

"Salvage" is generally understood to be the recovery of residual value from depletion, wreckage, or destruction.[144] Blackbeard argues that its completion techniques do more than recover oil from zones depleted by prior drilling and production. Blackbeard believes that they are accessing reserves within tighter rock that would have been *intentionally* avoided in the past due to economic and technologic limitations. It follows that Blackbeard is not proposing to recover residual value from a depleted asset. Instead, Blackbeard is obtaining production from a newly accessible source of recoverable reserves. This is not "salvage."

Prior suggested guidance for salvage field classification by the Commission supports this conclusion:

> Salvage classification is given a reservoir when all available primary and secondary recovery methods have been used to the economic limit, but there still remain recoverable hydrocarbons in the reservoir which can be produced if certain or all restrictions are removed. The liberty granted salvage reservoirs may seem excessive, but it should be remembered that production from a salvage reservoir must be sub-marginal before it can be classified as salvage, and that generally the amounts of production are quite small. Too, a salvage classification is not necessarily permanent, and can be changed quite promptly *if the reservoir production should rise to a substantial amount*.[145]

Of the examples of salvage fields provided by Blackbeard, most are concerned with sub-marginal production from depleted secondary recovery projects. Here, there is no indication in the record that all available primary and secondary recovery methods have been used to the economic limit in the Fields. To the extent that production from the Fields was sub-marginal prior to the introduction of unconventional drilling techniques, it cannot be doubted that the potential reservoir production is now expected to reach substantial volumes.

In addition, Blackbeard must show that salvage field classification will increase the ultimate recovery of hydrocarbons from these reservoirs, and that such increase will justify any production advantage from the removal of restrictions.[146] Because Blackbeard

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[144] *See* https://www.merriam-webster.com/dictionary/salvage.

[145] R.W. Byram and Company, The Oil and Gas Hearing Aid, Evidence, Procedure and Practice for Oil and Gas Hearings of the Railroad Commission of Texas, 76-7 (1961) (emphasis added).

[146] Byram at 59.

refused to submit data concerning potential efficient flow rates, there is insufficient evidence in the record to show that a salvage field designation is necessary to prevent waste or protect correlative rights. Further, if proper evidence of need is provided at a future time, there are other more appropriate means of obtaining the relief sought by Blackbeard, such as MER and net GOR adjustments for individual wells, leases or for the Fields. Given the foregoing, the Examiners do not recommend approval of Blackbeard's request for a salvage allowable classification for the Fields.

ii) Blanket Rule 10 Exception

The legal authority for downhole commingling is found in Statewide Rule 10.[147] Statewide Rule 10(b) states:

> After notice and an opportunity for a hearing, the commission or its delegate may grant an exception to subsection (a) of this section to permit production from ***a well or wells*** commingling oil or gas or oil and gas from different strata, if commingled production will prevent waste or promote conservation or protect correlative rights."[148]

In general, this is tied to evidence of waste. To demonstrate the prevention of waste, applicants should be able to show that one or more of the zones have low producing capacities and are not economic to produce alone. If they were required to produce each zone to depletion separately, the economic limit would be reached sooner and recoverable reserves would be left in the ground. Another reason may be that one of the zones produces a considerable volume of fluids and production in a commingled state is necessary to keep the fluids unloaded from the wellbore. This promotes conservation and may tend to conserve tubing and casing by enabling the operator to utilize a single string of tubing in a pumping well. If commingling allows an operator to economically produce reserves from a marginal zone that would otherwise go unrecovered, correlative rights are also protected.

According to the January 2021 proration schedule, the Sand Hills (Clear Fork) Field has a total of 42 wells, 30 of which are operated by Blackbeard. Although Millwee is not an offset to Blackbeard's acreage today, Blackbeard holds an undeveloped acreage position in the Fields that directly offsets Millwee, known as the Waddell Leases. By Mr. Smith's testimony, the Waddell Leases comprise 20% of the land area of Crane County.

The Upper Clear Fork, Tubb and Lower Clearfork constitute the "Clear Fork package" (the "Clearfork Package"). The Sand Hills (Clear Fork) includes the Upper Clear Fork formation only. The Sand Hills (Tubb) includes the Tubb and Lower Clear Fork. Commingling the Fields would mean producing from the entire Clear Fork Package as to each well. The Commission has approved numerous field correlative intervals and downhole commingling intervals, which include the Clear Fork Package, as well as the Glorieta and Wichita Albany formations (which bound the Clear Fork Package, above and below, respectively.) It should be noted that no operators of wells in the Sand Hills (Clear Fork) have opposed this Application. Millwee does not operate wells in the Sand Hills (Clear Fork) Field but does operate wells in the Sand Hills (Tubb) Field.

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[147] 16 Tex. Admin. Code §10
[148] Emphasis added.

Blackbeard has received blanket Statewide Rule 10 exceptions in unprotested dockets in its Marston Ranch acreage located in adjacent fields. Additionally, Blackbeard successfully commingled the Monahans North (Clear Fork) and Monahans North Fields via unprotested field consolidation. Blackbeard argues that it accesses bypassed reserves because it perforates the entire stratigraphic column, not just the zones previously considered economic pay.

Millwee opposes blanket Statewide Rule 10 exceptions for the Fields in anticipation of development on the Waddell Leases that directly offset Millwee's acreage. Millwee does not wish to lose its right to notice of Statewide Rule 10 exception applications when Blackbeard begins development of the Waddell Leases. Under a blanket Statewide Rule 10 exception, no notice would be sent to Millwee when the Fields are commingled in a well. Millwee is not protesting Statewide Rule 10 exceptions as to the subject leases, however.

Blackbeard did make a showing that its commingled wells on the subject leases have larger EURs than any wells drilled in the history of the Fields. The decline curves for the commingled Landlubber wells that Mr. Walker analyzed displayed a wide range of EUR's but, in general, were many times higher than the individually produced zones. It is unclear, however, whether the additional production is the result of commingling or the result of artificial stimulation or both. In addition, Blackbeard does not know and does not think it can measure the percentage of production being contributed by the Tubb or Clearfork formations in each well. Mr. Smith was not aware of a method or mechanism that would allow measurement and allocation between the fields with reasonable certainty.[149] He further conceded that it was not known whether there was any production from the Tubb in some wells. A large area attributed to the Field remains to be drilled. The performance of each of the wells on the subject leases varies considerably and there is no clear pattern evinced by this production. This makes it difficult to determine whether either zone is so marginal that it is uneconomic to produce in isolation or to make a fieldwide determination in that regard.

Evidence submitted by Blackbeard for the Landlubber No. 18 well completed in the Tubb formation alone suggests, however, that expected volumes from that sand are relatively small and would be less economic to produce without commingling. Moreover, Millwee does not protest a Statewide Rule 10 exception for the subject leases. Accordingly, the Examiners recommend approval of Blackbeard's request for a blanket Statewide Rule 10 exception for the subject leases but recommend denial of a Statewide Rule 10 exception for the Fields.

iii) MER and net GOR

The purpose of a hearing on MER application is to understand reservoir characteristics to establish an efficient rate of production where waste will not occur. A study of GOR has been accepted as a measure of efficiency. If one can produce more oil while leaving a higher portion of gas in the reservoir, it has been viewed as more efficient production.

[149] Tr. Vol. 3, Pg. 172, Lns. 3-19.

Blackbeard attributes its success in the Fields to its application of unconventional drilling techniques. With these techniques, Blackbeard targets the entire Clear Fork Package. Blackbeard argues that each well produces from a compartmentalized reservoir and drains small areas. Additionally, Blackbeard argues that compartmentalization, both horizontal and vertical, prevents understanding the characteristics of the reservoirs using "classical" methods such as bubble point and reservoir pressure.

Blackbeard argues that circumstances in the fields are such that the 1965 Yardstick allowable serves no purpose, as most of the wells in the Fields are either shut in, have 14(b)2 exceptions or single digit production potentials. No well in the Sand Hills (Tubb) has a potential nearing 84 bbls. Blackbeard further claims that the current allowable does not account for any characteristics of the Clear Fork group or any unique geology. It is based on unit size, depth and discovery date and is a general guideline only. Blackbeard has contacted more pay than operators would have done in the past. In addition, many of Blackbeard's wells produce higher than the 2000:1 stb/scf GOR prescribed by Statewide Rule 49,[150] further penalizing Blackbeard's oil allowable. Blackbeard states that the 1965 Yardstick allowable predated multi-stage fracturing. Blackbeard argues adherence to the yardstick will actually cause waste.

If compartmentalization exists, as Blackbeard speculates, the Fields are not good candidates for blanket fieldwide MER. Also, if bubble point, reservoir pressure oil-water contacts cannot be understood, the Commission should err on the side of caution and not approve blanket increases in oil or gas allowables. In addition, performance of the wells is highly variable, suggesting that such considerations should be taken up on a well-by-well or lease-by-lease basis. This does not mean that some or many of Blackbeard's wells are not in need of an MER increase or net GOR daily casinghead gas limit, but these should not be issued across the Fields. Blackbeard failed to provide evidence sufficient to show that the requested increases in net GOR/MER allowables are necessary, other than disregarding its current allowables.

Blackbeard's wells are put on artificial lift from the time of initial completion. Blackbeard contends that the wells will not flow unless pumped vigorously to keep the hydraulic head removed from the annulus, which allows the oil to flow. Blackbeard maintains that the *only* efficient way to produce the wells is to pump the hydraulic head down to the levels of the perforations and produce thousands of barrels of fluids per day. According to Blackbeard, there is no "middle ground." But no effort was made to prove this beyond bare assertion.

Millwee demonstrated that Blackbeard could vary the pump rates using surface modifications. GOR plotted against pump rate could be evidence of efficiency. Blackbeard has not provided any specific testing evidence. Installing surface equipment designed to pump high volumes of fluid is not evidence supporting an MER allowable. If this were the case, any operator in the state could design production facilities to handle more fluids and request larger daily allowables.

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[150] 16 Tex. Admin. Code §3.49

In addition, the MER requested by Blackbeard is 300 bopd and a net GOR daily casinghead gas limit of 3,000 Mcf. The hearing evidence did not establish how this value was determined, either through testing or otherwise. In fact, Blackbeard admits that it did not attempt to test the wells as requested by the Examiners. Additionally, Blackbeard does not engineer its wells to achieve the allowable at any point. Accordingly, it appears that the requested MER/GOR values are merely selected from the highest initial production reported from one of the wells on the subject leases.

The Examiners agree that the reservoir lacks sufficient drive energy to lift fluids to the surface, but there is no evidence showing that the aggressive pumping techniques used by Blackbeard are the only means of bringing the hydrocarbons to the surface in an efficient manner. Blackbeard could have requested increased allowables with a proper showing of varied rates and results on specific wells or leases. If each well produces from a compartmentalized reservoir, an understanding of each compartment should be studied.

Blackbeard did not provide well testing evidence that the Fields may be produced at rates lower than the maximum rates. Additionally, Blackbeard never attempted to produce its wells at the assigned allowable rate. Accordingly, the Examiners recommend denying the requested increases to net GOR/MER allowables.

iv) Cancellation of Overproduction

Blackbeard seeks the cancellation of overproduction in the amount of 166,107 bbls of oil from the Landlubber lease, at the time of the hearing. Millwee alleges this would be improper because Blackbeard made no attempt to remedy the overproduction by choking production or shutting-in wells. The only remedy sought is to request the Commission cancel the overproduction. Blackbeard did not design these wells to achieve the Fields' top allowable but rather, much higher rates. It does appear that Blackbeard had little regard for Field allowables when designing surface production equipment, instead relying on what had been granted to Blackbeard in unprotested cases.

There is little available prior guidance or Commission action relating to the cancellation of overproduction in protested cases. It appears, however, that cancellation of overproduction has been granted in scenarios where an applicant provides evidence sufficient to show that a lease overproduced because increased allowables were needed before the Commission had an opportunity to grant them or the overproduction is caused by Commission-requested testing. This does not appear to be the case as to the subject applications. The lack of production history at rates within the assigned allowables, along with the lack of rate sensitivity testing at alternate rates, does not demonstrate the necessity for increased allowables. Accordingly, the Examiners recommend denying cancellation of Blackbeard's overproduction.

VI. Recommendation, Proposed Findings of Fact and Proposed Conclusions of Law

The Examiners recommend the Commission deny Blackbeard's request for Salvage designation, MER and Net GOR increased allowable, Blanket downhole Commingling, and cancellation of overproduction. The Examiners recommend the Commission approve Statewide Rule 10 exception authority for the subject leases and adopt the following findings of fact and conclusions of law.

Findings of Fact

1. Blackbeard Operating, LLC ("Blackbeard") submitted an application ("Application") for blanket Statewide Rule 10 authority for the Sand Hills (Clear Fork) and Sand Hills (Tubb) Fields (the "Fields"). Additionally, Blackbeard requested a maximum efficient rate ("MER") and net gas oil ratio ("net GOR") of 300 barrels of oil per day ("bopd") with a daily casinghead gas limit of 3,000 thousand cubic feet ("Mcf") of gas per day. Alternatively, Blackbeard requested "salvage classification," unlimited oil allowable for the Fields. Lastly, Blackbeard requested cancellation of accrued overproduction for its leases in the in the Sand Hills (Clear Fork) and Sand Hills (Tubb) Fields, Crane County, Texas.

2. The Application is protested by Millwee Oil Inc. ("Millwee"), an operator of wells in the Sand Hills (Tubb) Field.

3. All parties entitled to notice received more than 10 days' notice of the hearing and an opportunity for hearing.

    a. On September 21, 2020, the Hearings Division of the Commission sent a Notice of Hearing ("Notice") via first-class mail to the Applicant and all operators in the Fields.
    b. The Notice contains (1) a statement of the time, place, and nature of the hearing; (2) a statement of the legal authority and jurisdiction under which the hearing is to be held; (3) a reference to the particular sections of the statutes and rules involved; and (4) a short and plain statement of the matters asserted.
    c. The hearing on the merits was held on January 20, 21, 22, 2021 and March 16, 17, 2021.
    d. Both Applicant and Protestant appeared and participated in the hearing on the merits.

4. The Sand Hills (Clear Fork) Field was discovered on December 1, 1966.

5. The Sand Hills (Tubb) Field was discovered in 1930.

6. The Fields produce from a solution-gas drive and are artificially lifted, typically by rod pump.

7. Out of 42 wells in the Sand Hills (Clear Fork) field, Blackbeard operates 30 wells.

8. The subject leases are comprised of the following: (i) Landlubber N (Lease ID. No. 53207), Landlubber NE (Lease ID. No. 54280), Landlubber CW (Lease ID. No. 54792), Landlubber CE (Lease ID. No. TBD), Landlubber (Lease ID. No. 48999) ("Landlubber Leases"); (ii) 6 Pounder NW (Lease ID. No. 53674), 6 Pounder NWNE (Lease ID. No. TBD), 6 Pounder NE (Lease ID. No. 52912), 6 Pounder NWSW (Lease ID. No. TBD), 6 Pounder NESW (Lease ID. No. 54949), 6 Pounder SW (Lease ID. No. 54949) ("6 Pounder Leases"); and (iii) Yellow Jack SWSW (Lease ID. No. TBD) and the Yellow Jack E2SW (Lease ID. No. 53438) ("Yellow Jack Leases").

9. The Landlubber Lease (48999) is overproduced by 166,107 barrels of oil, according to the March 2021 proration schedule.

10. On July 1, 2020, the Hearings Division requested that a 30-day step-rate, production test be performed on a well to demonstrate stabile, efficient production rates.

11. None of the requested testing was performed or demonstrated by Blackbeard.

12. Blackbeard did not provide evidence sufficient to show that salvage classification, unlimited allowable in the Fields, is necessary to prevent waste or protect correlative rights. The current development of the Fields is accessing substantial, newly available resources.

13. Blackbeard did not provide evidence sufficient to show the need for field-wide maximum efficient rate ("MER") and net gas oil ratio ("net GOR") for the Fields is necessary to prevent waste. No testing was performed, and the wells in the Fields demonstrate a wide range of production profiles.

14. Blackbeard did not provide evidence sufficient to show that blanket, field-wide downhole commingling is necessary to prevent waste. It is not evident that the increased production in the Fields is due to commingling rather than fracture stimulation in the Sand Hills (Clear Fork) Field.

15. Blackbeard did not provide evidence sufficient to show that cancellation of overproduction is necessary. The lack of production history at rates within the assigned allowables, along with the lack of rate sensitivity testing at alternate rates, does not demonstrate the necessity for cancellation.

16. Blackbeard's overproduction is not the result of Commission requested testing.

17. Millwee does not protest granting a Statewide Rule 10 exception authority on the subject leases. There is evidence sufficient to show that a Statewide Rule 10 exception for the subject leases is necessary to more economically produce reserves from the Sand Hills (Tubb) Field that might otherwise go unrecovered from the subject leases due to lower economic limits.

Conclusions of Law

1. Proper notice of hearing was timely issued to persons entitled to notice. *See, e.g.,* Tex. Gov't Code §§ 2001.051, 052; 16 Tex. Admin. Code §§ 1.42, 1.45.

2. All things necessary to the Commission attaining jurisdiction has occurred.

3. Resolution of these dockets is a matter committed to the jurisdiction of the Commission. *See, e.g.,* Tex. Nat. Res. Code § 81.051.

4. An exception to Statewide Rule 10 for the subject leases is necessary to prevent waste and promote conservation. 16 Tex. Admin. Code § 3.10.

5. All other relief requested by Blackbeard, including an exception to Statewide Rule 10 for the Fields, salvage classification for the Fields, an increase to Net GOR and MER for the Fields, and the cancellation of overproduction is not necessary to prevent waste or protect correlative rights. 16 Tex. Admin. Code §§ 3.10, 3.45, 3.49 and 3.52.

Recommendation

The Examiners recommend the Commission deny Blackbeard's request for Salvage designation, MER and Net GOR increased allowable, Blanket downhole Commingling, and cancellation of overproduction. The Examiners recommend approval of Statewide Rule 10 exception authority for the subject leases.

Respectfully,

Austin Gaskamp
Technical Examiner

Ezra Johnson
Administrative Law Judge