BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the Application of Merit Energy Company, LLC (Operator) for a permit to authorize the injection of saltwater into the Morrow formation At the WMSU #1602 well in Section 32, Township 34 South, Range 41 West, Morton County, Kansas.	)))))	Docket No. 23-CONS-3080-CUIC CONSERVATION DIVISION License No. 32446

PRE-FILED REBUTTAL TESTIMONY OF

NICHOLAS LAHUTSKY

MERIT ENERGY COMPANY, LLC

Q. Are you the same Nick Lahutsky who caused 9 pages of prefiled direct testimony, and exhibits M-1 through M-8 in this docket?

A. Yes.

Q. Have you reviewed the prefiled testimony submitted by Todd Bryant and Kenny Sullivan in this docket?

A. Yes. There are several items contained in the prefiled testimony of Toddy Bryant and Kenny Sullivan that I believe merit a response. Those items include: (1) Mr. Bryant's recommended reduction to the maximum requested injection pressure to 1,375 PSI; (2) The requirement to conduct a staff-witnessed MIT; (3) Mr. Sullivan's belief that a radioactive tracer survey is not able to determine casing integrity; (4) Staff's allegations that the wellbore construction proposed does not satisfy Commission regulations; (5) The so-called "dead water zone" from the base of the tubing to the packer above the Morrow; (6) Mr. Sullivan's reasons as to why the Subject Well could threaten correlative rights and cause waste; (7) Mr. Sullivan's comments regarding the history of the Wilburton Morrow Sand Unit; and (8) Publication notice of the Application.

Q. What are your thoughts on Mr. Bryant's recommendation to reduce the maximum requested injection pressure from 1,500 PSI to 1,375 PSI contained at 6:17-7:13 of his prefiled testimony?

A. Merit applied to inject saltwater at the rate of 3,500 BWPD and a maximum injection pressure of 1,500 PSI because that is what the rest of the active injection wells on Permit E-12,571 are presently authorized for.

This is the first time staff has raised this issue with Merit. That said, I believe it is possible that Mr. Bryant's calculations may support a finding that 1,500 PSI exceeds the fracture gradient of the Morrow sand. Fortunately, Merit does not require injection at the rate of 1,500 PSI. As part of a condition to approval of this application, Merit would agree to amend its application to reduce the maximum requested rate of the injection pressure to 1,375 PSI for the Subject Well.

Q. What about staff's objection to approving Merit's application because the well has not passed a staff-witnessed MIT?

A. As noted in my testimony at 7:3-7:18, and 8:19-24, Merit has already proposed conducting an MIT above the Wabaunsee and from the top of the Morrow to the base of the Topeka as a condition to granting the application. This approach is consistent with the design

approval process set forth in KAR 82-3-401(e), regularly and ordinarily utilized by industry and staff in connection with the process to approve injection and disposal well applications in Kansas. Here, the design of the well is at issue, which is why this hearing is taking place. If the design is ultimately approved, the next step would be to conduct an MIT.

The purpose behind the design approval regulation, and the primary issue with proceeding to MIT the Subject Well without design approval, is that such a test is going to cost approximately $45,000. Because staff would not sign off on the design, it would not make financial sense and would result in economic waste for Merit to conduct an MIT knowing the application still would not be approved. Merit remains ready, willing and able to conduct this test as a condition to granting the application—just like design approval contemplates.

Q. What is your response to staff's position that a radioactive tracer survey cannot determine the casing integrity of the Subject Well?

A. At 6:4-6:7, Mr. Sullivan testifies that the radioactive tracer survey can determine the integrity of the tubing, but not the casing of the Subject Well. I do not believe that assertion is accurate. The purpose of the tracer test is to demonstrate and confirm that injected fluid is only entering the zone of injection. This necessarily demonstrates that the packer is working as designed and that the casing in the injection interval below the packer has mechanical integrity. The tracer survey would show if water escaping into other zones, or up the annulus behind the tubing, or even into the producing interval, which would be an obvious indication of issues with mechanical integrity.

It should be noted that after mechanical integrity has been initially established, the ongoing reporting of the fluid level, produced water rate, and gas-to-water ratio required by K.A.R. 83-2-407(a)(4) will also confirm continued casing integrity. The Subject Well currently produces gas and approximately 3 BWPD and should continue to produce a rate close to that in the future. If a leak occurs, either in the casing or in the injection tubing, or if the packer failed, the produced water rate will drastically increase above the natural trend and be an immediate sign of required well intervention. If a leak occurred, Merit would immediately identify the resulting loss of gas production and increased water production, and immediately shut-in the well to prevent damaging its own gas reserves. Merit has no

incentive to allow for a casing or tubing leak to occur and then not take immediate action to repair the issue.

Q. Can you respond to the allegation that wellbore construction does not satisfy Commission regulations?

A. This is another issue that Staff has raised for the first time with Merit.

Staff's position seems to be that K.A.R 82-3-403(b) requires continuous cement across the injection interval and the producing interval and every other interval in between, and claims the Subject Well fails this requirement because there is no cement behind production casing between 3,754' and 3,400'. First, staff's interpretation of K.A.R. 83-3-403(b) is incorrect. The regulation merely requires that the "well is continuously cemented across the injection *and* producing intervals." Nowhere does it say that cement must be continuous across non-injecting and non-producing intervals. That would not make sense, because there are no perforations in the non-producing and non-injecting intervals. The requirement to have cement across the perforations of the producing and injecting intervals is to ensure injected or produced fluids remain contained to the object formation and do not channel up or down the annulus between the wellbore and production casing.

Second, we do not actually know that there is not cement behind the production casing between 3,754' and 3,400' because the cement bond log from April 7, 1989 cannot be located. This is the date when the original remedial cement work on the Subject Well was conducted by OXY. Staff is merely assuming there is not cement across that interval.

As I previously testified at 6:24-7:2, Merit has offered to conduct a cement bond log to demonstrate continuous cement across the injection interval, the producing interval, and from the top of the Topeka to a depth behind the surface casing. This test confirms the Subject Well does not present a threat to fresh water. Both staff members testified they agree that the proposed construction of the Subject Well presents no threat to fresh water.

Q. What is your response to staff's concerns about the so-called "dead water zone"?

A. Staff claims that if produced fluid from the Topeka were allowed to accumulate below the end of production tubing at 3,310' and above the Morrow injection packer at 4,818', a casing or tubing leak is likely to occur due to stagnant water. Staff then claims that a casing

leak at this interval could somehow cause a well blow out, and generally alleges without explanation that spills, waste, and impacts to correlative rights could also occur as a result. I do not believe staff's concerns are realistic. A blow out could not occur with 300 PSI of formation pressure in the Topeka, that is just not possible. The Topeka formation will cease to flow if liquid is allowed to accumulate in the well due to its low pressure of 300 psi. In the event fluid began to enter to producing formation the gas production would be choked off by the hydrostatic pressure of the fluid immediately, making a blowout not possible. Moreover, virtually every oil and gas well contains an interval between its plug back total depth and the base of tubing. As such, the "dead water zone" risk is present in every well drilled and completed in Kansas. Mr. Sullivan acknowledges that the Topeka water is not corrosive at 5:9-5:10 of his testimony, but rather pivots to a position that by laying stagnant bacterial will form causing it to become corrosive. Mr. Sullivan claims in his testimony at 5:15-5:19 that the so-called "dead water zone" cannot be chemically treated to prevent bacterial growth." That is simply not true. The production casing annulus will be open to that zone, and will be able to accept chemical treatments such as biocide and corrosion inhibiter pellets that will sink to the bottom of the dead zone – thus effectively treating the "dead water zone."

Additionally, the alleged risk of an undetected leak is actually decreased in this scenario because of the additional monitoring and reporting requirements associated with dually completed wellbore set forth in K.A.R. 82-3-407(a)(4). As noted in my direct testimony, Merit will be performing regular monitoring and reporting for this well, including measuring fluid levels in the annulus of the production casing, and monitoring the volume of produced saltwater. This measuring and monitoring is designed to detect a casing or tubing leak in the injection tubing, packer or the production casing. The additional measuring and monitoring provide an earlier detection of a leak that could flood the producing formation, and is therefore aimed at preventing waste and protect correlative rights.

I suppose it is possible that the injected fluid is a potential source for downhole corrosion due to the possibility that bacteria and oxygen are introduced to it during the surface processing. This risk is present in all injection wells and can cause packer or injection

tubing failure from time to time. That is why the monitoring and reporting is done, and tracer surveys are conducted to demonstrate ongoing compliance with the requirement to inject the fluid into *only* the approved injection interval.

In summary, mechanically testing the casing prior to injection and the ongoing monitoring and reporting requirements are designed to, and largely mitigate staff's concerns regarding spills, waste, and impacts to correlative rights.

Q. Mr. Sullivan offers several reasons why permitting the well could threaten correlative rights and cause waste, can you please address those?

A. In his testimony at 6:9-6:16, Mr. Sullivan claims "crossflow of brine from the Morrow zone into the Topeka zone" could threaten correlative rights. At 6:18-7:11, he asserts a belief that water from the Morrow will somehow infiltrate the Topeka formation.

As explained in detail above, this is not likely to occur because of the ongoing fluid monitoring and reporting requirements. Moreover, Merit would immediately notice the loss of gas production if the Topeka were flooded, and investigate why. If it were a casing or fluid leak, the fluid reports would corroborate that fact and Merit would immediately cease injection per KAR 82-3-404(c), which requires that injection authority is immediately removed upon the cessation of production from a dually completed well. Merit obviously is not interested in flooding out the producing interval, as that would be directly contrary to its own financial interest. The entire reason for the dual completion application is to protect and continue the gas production from Topeka while utilizing the productive interval within the Morrow for further enhanced oil recovery operations.

Q. Can you explain Merit's involvement with the Wilburton Morrow Sand Unit (WMSU) in the context of Mr. Sullivan's testimony at 4:13-5:6?

A. Mr. Sullivan attempts to draw a correlation between the 'highly corrosive' Topeka water and Morrow formation water, and the surface spills that have occurred within the WMSU. The spills that have occurred on the WMSU are unrelated to wellbore casing or tubing integrity, or the corrosiveness of produced water. Rather, they are surface spills located on injection lines or flowlines connecting the individual wells to the centralized waterflood facility. Merit has only operated the WMSU since May of 2014. When Merit took over the WMSU from OXY, the surface equipment was all very dated. Merit does not have

accurate records from Oxy as to when the individual lines were installed but some of them may have been as old as the 1960's when the WMSU waterflood began. The surface equipment is externally exposed to Oxygen and groundwater flows which is the most corrosive of all to steel products because it causes Oxidation – commonly referred to as rust. External corrosion & rust formation caused from fresh water and oxygen is the cause of these spills, not Topeka and Morrow produced water.

Oxygen is not present downhole in an oil gas well that has a properly sealed wellhead as the Subject Well would, and the form of corrosion that occurred in the surface infrastructure would not apply within the dually completed Subject Well. Mr. Sullivan acknowledges that the Topeka water is not corrosive at 5:9-5:10 of his testimony, and it is my opinion that it cannot be reasonably blamed for spills that occurred on surface pipelines clearly caused by external rust.

Mr. Sullivan knows that Merit has already replaced the entire saltwater injection system with brand new fiberglass lines at great expense in order to prevent future leaks associated with the aging infrastructure, and the Commission should be aware of that fact.

Mr. Sullivan testified to 7 unrelated instances where pressure monitoring on the backside of a well indicated a downhole tubing or packer failure that required intervention to remediate the issue. These are examples when Merit has operated prudently and appropriately by recognizing the required intervention, ceasing injection, repairing the downhole system, and notifying staff to come witness the new MIT required after the intervention.

Q. Did Merit provide proper notice of the Application?

A. Merit originally provided notice of the application to the Elkhart Tri-State News on June 16, 2022. Mr. Bryant correctly pointed out that this was the day before the Commission received the application and arguably does not satisfy the public notice requirement. Merit has provided additional public notice on March 2, 2023, in the publication Elkhart Tri-State News in order to satisfy the requirement. A copy of that notice is attached as Exhibit M-9.

Q. Is there any other information you would like to provide to the Commission concerning this Application?

A. I would like to summarize why the Subject Well should be permitted for dual completion. Dual completions are not the norm for injection wells but have a significant amount of precedent within the industry and should be summarily avoided. Merit does not believe Staff's concerns about the so-called "dead zone" or the corrosiveness of the Topeka water are quantifiable, and therefore not useful in determining risk in a meaningful way. The monitoring and testing requirements for dually completed wellbores that already exist within the Commission's own regulations are intended to mitigate the risks inherent to a dual completion, and sufficient in that regard. The regulations associated with dual completions would not have been written and the Commission would not have historically approved similar projects if it were not permissible or possible to protect freshwater, correlative rights, and to prevent waste. Staff's opposition to granting the Application seems grounded in the unique natures of the dual completion, and not due to any identifiable wellbore integrity issue.

While staff's position regarding casing and tubing leaks is entirely speculative, Merit's position that denying the application will cause waste and violate correlative rights is not. It was not rebutted that if the application is denied waste will result through either the loss of gas production from the Topeka and Wabaunsee formations, or the loss of oil reserves from the Morrow formation.

Therefore, Merit's position is that this Application should be granted on the following conditions: 1) that the wellbore pass an MIT as described above, 2) a cement bond log be conducted and show that there is continuous cement across the producing and injection intervals, and from the top of the Wabaunsee to within the surface casing, and 3) the application be amended to request a maximum rate of injection pressure of 1,375 PSI for the Subject Well.

In conclusion the application seeks to protect correlative rights and prevent waste in a path that is economically viable.

Q. Does this conclude your testimony?

A. Yes.

VERIFICATION

STATE OF TEXAS)
) ss:
COUNTY OF Dallas)

Nick Lahutsky, being first duly sworn, deposes and says that he is the Nick Lahutsky referred to in the foregoing "PRE-FILED DIRECT TESTIMONY OF NICK LAHUTSKY" to be filed before the State Corporation Commission of the State of Kansas in Docket No. 23-CONS-3080-CUIC, and that the contents thereof are true and correct to the best of his information, knowledge, and belief.

Nick Lahutsky

SIGNED AND SWORN to before me on this 22 day of March, 2023.

Notary Public

My Commission expires:

MATTHEW RETTKE
Notary Public, State of Texas
Comm. Expires 02-03-2025
Notary ID 126532019

Legal Notice

First published in the Elkhart Tri-State News, Thursday, March 2, 2023.

BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS
NOTICE OF FILING APPLICATION

RE: Merit Energy Company LLC- Applications for permit to authorize the injection of saltwater into the following wells located in Morton County, Kansas:

WMSU 1602W	NE-SE Sec. 32 T34S-R41W
WMSU 1104W	SW-NW Sec. 33 T34S-R41W

TO: All Oil and Gas Producers, Unleased Minerals Interest Owners, Landowners, and all persons whomever concerned.

You, and each of you, are hereby notified that Merit Energy Company LLC, has filed an application for permit to authorize the Enhanced Recovery by injection of saltwater into the Morrow formations at the Wilburton Morrow Sand Unit, located in the section noted above in Morton County, Kansas, with a maximum operating pressure of 1,500 psi and a maximum injection rate of 3,500 bbls per day.

Any persons who object to or protest this application shall be required to file their objections or protests with the Conservation Division of the State Corporation Commission of the State of Kansas within thirty (30) days from the date of this publication. These protests shall be filed pursuant to Commission regulations and must state specific reasons why the grant of the application may cause waste violate correlative rights or pollute the natural resources of the State of Kansas.

All persons interested or concerned shall take notice of the foregoing and shall govern themselves accordingly.

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13727 Noel Road Suite 1200
Dallas, TX 75240
(972) 628-1660

EXHIBIT M-9

CERTIFICATE OF SERVICE

I, the undersigned, certify that a true and correct copy of the attached Pre-Filed Rebuttal Testimony of Nicholas Lahutsky and Exhibit M-9 has been served to the following by means of electronic service on March 24, 2023:

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