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

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

APPLICATION OF BLACK RIVER WATER MANAGEMENT COMPANY, LLC TO AMEND ADMINISTRATIVE ORDER SWD-1695 FOR A SALTWATER DISPOSAL WELL LOCATED IN EDDY COUNTY, NEW MEXICO. CASE NO. 15911

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

December 21, 2017

Santa Fe, New Mexico

BEFORE: SCOTT DAWSON, CHIEF EXAMINER
PHILLIP GOETZE, TECHNICAL EXAMINER
DAVID K. BROOKS, LEGAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Scott Dawson, Chief Examiner, Phillip Goetze, Technical Examiner, and David K. Brooks, Legal Examiner, on Thursday, December 21, 2017, at the New Mexico Energy, Minerals and Natural Resources Department, Wendell Chino Building, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

REPORTED BY: Mary C. Hankins, CCR, RPR
New Mexico CCR #20
Paul Baca Professional Court Reporters
500 4th Street, Northwest, Suite 105
Albuquerque, New Mexico 87102
(505) 843-9241

APPEARANCES

FOR APPLICANT BLACK RIVER WATER MANAGEMENT COMPANY, LLC:

ADAM G. RANKIN, ESQ.
HOLLAND & HART, LLP
110 North Guadalupe, Suite 1
Santa Fe, New Mexico 87501
(505) 988-4421
agrankin@hollandhart.com

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EXHIBITS OFFERED AND ADMITTED

(11:03 a.m.)

EXAMINER DAWSON: Back on the record.

Call case number 13 on the list, which is Case Number 15911, application of Black River Water Management Company, LLC to amend Administrative Order SWD 1695 for a saltwater disposal well located in Eddy County, New Mexico.

Call for appearances, please.

MR. RANKIN: Adam Rankin, with Holland & Hart, on behalf of Black River Water Management Company. I have two witnesses here today.

EXAMINER DAWSON: Okay. Can your witnesses please stand up and be sworn in by the court reporter?

(Mr. Robinson and Mr. Lange sworn.)

EXAMINER DAWSON: Thank you.

MR. RANKIN: Mr. Examiner, I'd call my first witness, Mr. Brad Robinson.

EXAMINER DAWSON: Okay. When you're ready, Mr. Rankin.

MR. RANKIN: Thank you very much. I'm waiting for my witness to get comfortable.

BRADLEY M. ROBINSON,

after having been first duly sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. RANKIN:

Q. Mr. Robinson, once you have a moment to get yourself comfortable, please state your full name for the record.

A. Bradley Mason Robinson.

Q. By whom are you employed?

A. Matador Resources Company.

Q. And will you please explain to the Examiners the relationship between Matador Resources Company and the Applicant in this case?

A. Black River Water Disposal is an affiliate of Matador Resources Company.

Q. And what is your job title?

A. I'm a senior vice president of reservoir engineering and the chief technology officer at Matador.

Q. And what are your job duties?

A. My job duties involve, number one, to do our corporate reserves for the SCC filings. I also get involved in all the well completions and evaluation of our reservoir performance, not only the producing wells but most recently on the saltwater disposal wells.

Q. So your responsibilities include the management and oversight of saltwater disposal wells?

A. Yes.

Q. And are you familiar with the specific injection well at issue in this case?

A. I am.

Q. And have you conducted a study of the area in the reservoir at issue here?

A. Yes, we have.

Q. And have your credentials as an expert in petroleum engineering previously been accepted and been made a matter of record before the Division?

A. Yes, they have.

MR. RANKIN: Mr. Examiner, I would tender Mr. Robinson as an expert in petroleum engineering.

EXAMINER DAWSON: Mr. Robinson is admitted as an expert in petroleum engineering at this time.

MR. RANKIN: Thank you.

Q. (BY MR. RANKIN) Mr. Robinson, will you please just briefly summarize what you're seeking with this application today?

A. So what we're after is approval to run 5-1/2-inch tubing into our Rustler Breaks saltwater disposal #3 well.

Q. And to achieve that approval, you're seeking to amend Administrative Order SWD 1695; is that correct?

A. That's correct.

Q. Okay. And that order provides, generally, for

4-1/2-inch tubing; is that right?

A. That's correct. The order provides for the disposal of oil-coat [sic} saltwater down 4-1/2-inch tubing within a Devonian Formation interval roughly from 13,650 feet to 14,490 feet and, as I mentioned, through 4-1/2 internally coated tubing.

Q. Is that the only change you're seeking to modify to the orders?

A. That's the only change we're requesting. Yes.

Q. And is the Rustler Breaks SWD #3 well currently injecting?

A. No, it's not. We have not started injecting yet, but it's been drilled.

Q. Now, will you please refer to Exhibit Number -- Before we move on, the order that you're seeking to amend is here in Exhibit Number 1; is that correct?

A. That's correct. This is Order SWD 1695.

Q. Okay. Now, Exhibit Number 2, will you please refer to that as you explain to the Examiners why it is you're seeking to increase the injection --

A. So what I wanted to show here is why are we requesting this. We have been -- we have some saltwater disposal wells in the area, and I'll show a map here in a minute. We've done some step-rate injection tests on

those wells with 4-1/2-inch tubing, and what we're finding is up to 85 percent of the pressure at the surface that is required to inject water is simply due to friction in the tubing. It has nothing to do with reservoir pressure or reservoir permeability. It's simply an artifact of the size of the tubing.

So by increasing the diameter of the tubing, that's going to significantly reduce the friction pressure and would actually allow us to inject larger volumes of water at the same or even a lower surface-injection pressure.

Our ability to inject more water into a single well is also going to allow us to drill fewer SWD wells and lessen our surface impact in the area.

Q. All right. And just to orient the Examiners, will you turn to Exhibit 3 and explain to them generally where this well is located?

A. So this is a map that shows, generally, southeast New Mexico. The Rustler Breaks SWD #3 well is shown there in Section 24 of Township 23 South, Range 27 East.

Q. And are there other Devonian injection wells in the immediate vicinity of the subject well?

A. There are. And, in fact, the map on the next exhibit, Number 4, shows all of the wells in the area

that we're aware of, and we've done exhaustive research in this area. It shows the active saltwater disposal wells near our SWD #3. It shows what wells are currently planned that may have been drilled, as is in the case of the SWD #3. There are some wells currently being drilled in the area. There are also some permits and locations. So we've tried to show all of the activity on this map.

Q. Okay. And so then Black River operates the Black River SWD #1 and the SWD #2; is that correct?

A. That's -- that's correct.

Q. Okay. Now, with respect to the Black River SWD #1, have you been able to use that well as a basis for your study in this case to support your application?

A. We have. That's a well that we've been able to collect a lot of information on, a lot of data from logs and also from injection tests. And so it's been very helpful in us analyzing the area as far as the saltwater disposal, and we've used that data extensively in this area.

Q. So you consider that well and its performance and the reservoir in that area to be an analog for the SWD #3 well?

A. We do. In fact, in Exhibit 5, you'll see a cross section that our geology department has put

together between the SWD #3 well and our SWD #1 well just to the southeast, a little over a mile. And a lot of the data we have is on that SWD #1 well, very comparable thicknesses of the Devonian section, comparable depth. The logs look very similar for both of those wells. So we feel like the data that we've acquired on the #1 well would be a good analog to the #3 well.

Q. Okay. And on that topic, you testified earlier that you determined approximately 85 percent of the injection pressures that you're measuring, in your experience, account for friction. How do you know that?

A. We actually recorded both bottom-hole pressures and surface pressures during this step-rate injection test. So we were able to actually measure the amount of friction in the 4-1/2 inch. And that's shown, actually, on Exhibit 6, where we recorded the surface pressure and bottom-hole pressure and then calculated what the friction was and what the percentage of the total pressure -- how much of that was friction. And each one of those little yellow bars represents sort of the pressure increase as we were increasing injection rate, which is along the x-axis, and pressure difference is shown on the y-axis. So of that total pressure difference, 85 percent of that was just friction in the

pipe.

Q. While you're conducting the step-rate test, were you able to obtain other measurements -- key measurements and parameters of the reservoir that were able to assist you in your further study?

A. Yes. Step-rate injection tests, you know, for gas wells, for saltwater disposal wells are very helpful in determining reservoir permeability or the permeability thickness, also reservoir pressure. You can analyze that data to determine things like skin factor, any stimulation or damage that might occur to your reservoir. So we get a lot of useful information out of these step-rate tests.

Q. So were you able to take that information that you measured from the reservoir and apply it to a nodal analysis to determine the different response in the reservoir between a 4-1/2-inch tubing and 5-1/2-inch tubing as to the injection rates?

A. Yes. Yes. Exactly.

So what we did in Exhibit 7 is we took those data points, those step-rate tests, and we can use that to calibrate a model using a nodal analysis program that we have. We have a commercial program called Perform. A lot of companies have the same software. And you can calibrate that model to a certain wellbore

configuration, certain tubing sizes, depths and so forth and injection rates, and you can use it to predict what the pressures would be with either bigger or smaller tubing sizes with different injection intervals. That's what a nodal analysis is, is a -- basically an engineering analysis of the entire wellbore and the nodes or the different points along that wellbore from up at the surface all the way down into the reservoir. You can calculate the pressures and the injection rates and so forth at those different points. And you can do it for different tubing sizes, and that's essentially what I've done here.

You can see that for the test that we conducted in our analog well -- just a little bit more explanation. This is bottom-hole pressure on the y-axis with injection rate on the x-axis. The red-dashed line is the inflow performance curves, what we call it, for the 4-1/2-inch tubing, and the solid black line would be the inflow performance curve for the 5-1/2-inch tubing.

The dashed blue line is the calibrated outflow performance curve using that step-rate test. So we can extrapolate that to the intersection points for the 4-1/2 and 5-1/2. And for a given surface pressure -- and we chose 1,700 psi, which is like 1,000 psi less than the maximum that we're allowed. The order

allowed for up to 2,730. So we actually ran these at 1,000 psi less. We could -- we could increase the injection rate up to 35,000 barrels a day and still be well below the maximum surface injection pressure that the order allows for.

Q. And based on this analysis, you'd see only a marginal increase in the bottom-hole pressure; is that correct?

A. That's correct. You can see a little increase in bottom-hole pressure, maybe about 400 [sic] psi, something like that, and that's just due to physically forcing more fluid into the reservoir. But it's a very permeable reservoir. You can see that we estimated a kh of 200,000 of millidarcy feet in the Devonian section here.

Q. Using the parameters that you got from your step-rate test in the prior exhibit, did you also conduct a simulation of the reservoir to further evaluate its response to the injection at these higher rates?

A. I did.

Q. And has that been depicted in your next exhibit, 8?

A. Yes. If you turn over to Exhibit 8 -- well, of course, the step-rate test only evaluates kind of what's

happening near the wellbore or for the duration, so we wanted to see what the longer-term effects would be of injecting, say, up to 40,000 barrels per day into this reservoir. And so we built -- we have a commercial software product. It's a finite difference reservoir simulator and a very rigorous analysis of the injection profile and the effect of the pressure as that fluid moves out.

So we simulated a 20-year injection of 40,000 barrels per day into the Devonian section. We assumed 1,000 foot of thickness, which is about the average thickness of the Devonian in the area. Initial reservoir pressure of 5,865 psi, and that's measured at the top of the formation. The Devonian is so thick, you can actually have quite a variation in reservoir pressure from top to bottom when it's full of water just to the hydrostatic. Reservoir pressure gradient, .45 psi per foot. You can see some of the other properties there. The more important parameters are the porosity, which we got from open-hole logs of 6 percent, and a permeability of -- we assumed 150 millidarcies. Even though our injection tests suggested it could be as much as 200 millidarcies, we just assumed 150 millidarcies for this simulation. And the grid size that we established was a 20-mile-by-20-mile reservoir.

Q. So Exhibit 8 depicts certain assumptions -- key assumptions based on your data that went into the model -- the inputs for the model?

A. That's exactly right.

Q. And then what -- what did you -- what were your outputs going to be determined that the model told you as to the -- where this fluid would be going?

A. So if you look at Exhibit 9, this is actually a fluid front map, and the different colors show the saturation -- the water saturation due to the injection of the oilfield-produced water. After -- we looked at it at ten years and then again at 20 years. So you can see after ten years, the fluid has actually moved out roughly a half a mile, and then after 20 years, it's moved out roughly 8/10 of a mile. So we're still less than a mile radius of influence, if you will, or radius of the fluid front away from the injection well even after 20 years at 40,000 barrels.

Q. So based on this analysis, did you determine to provide notice further than the half-mile to a mile radius --

A. Yeah.

Q. -- from the point of injection?

A. We did. We actually notified everyone within one mile.

Q. Now, in addition to the extent of the fluid front, what else did the model tell you? Did it tell you anything more about the response to the reservoir?

A. So it does. It actually shows the pressure buildup in the reservoir as a result of that injection, and that curve is actually shown on Exhibit 10. The y-axis shows the pressure increase over and above average reservoir pressure as a function of the distance away from the injection well in miles. So you can see that even after 20 years of injection at 40,000 barrels a day, the near-wellbore pressure is only around 250, 260 psi, and away from the wellbore, the pressure increases only 150 to 200 psi at more than a mile away from the reservoir -- or the injection well. I'm sorry.

Q. So those numbers may seem out of context with how large the pressure changes are. With respect to the overall reservoir at this depth, what is the reservoir formation pressure as it exists?

A. So as I mentioned a little earlier, the average reservoir pressure in the Devonian is probably around 6,000 psi. So this pressure increases only maybe 3 or 4 percent of the overall reservoir pressure that we're seeing that pressure elevated. And as you move further and further away, it actually dissipates to zero, but I chose to only graph five miles here.

Q. So based on your analysis and your running of the model based on your -- the data you acquired from your analog well, what are your conclusions about what the overall impact would be to the Devonian injection interval here should you be permitted to increase your tubing to 5-1/2-inch?

A. So what I've concluded from this is that even with an increase in injection rate over 20 years, we're going to have really a minuscule effect on overall reservoir pressure in the Devonian Formation. It's such a -- it's so thick and it's such a large-volume reservoir that we really aren't going to have any major impact on the reservoir pressure.

Q. This model that you ran that is depicted -- the results of which are depicted in Exhibit 10, does that account for the additional wells that are injecting into the Devonian referenced back in Exhibit Number 3?

A. No. We only simulated just a single well injecting in this section. So we haven't accounted for any of the other wells in the area. They're more than a mile away. So I'm really not worried about directly impacting any of those wells, you know, given this pressure history and the fluid front map that we showed that the fluid's going to move out less than a mile that we inject. So I'm not too worried about any of the

effects on any of those other wells.

Q. And that opinion of yours is based on your evaluation of the pore-pressure increase of this well and how the pressure drops off at a distance. You're giving that opinion based on your understanding of what the cumulative impacts would be from all these wells?

A. That's correct.

Q. Now, in your opinion, does your analysis suggest that there is capacity for increased injection rates in the Devonian for the life of this well that's the subject of the application?

A. Yes. Yeah, I believe there is.

Q. And in summary, would you please just review for the Examiners what your opinion is for what the benefits are of increasing the tubing size here?

A. Yes.

So what -- what we believe and what my studies have shown, in my opinion, if we were allowed to run a larger tubing into this well, it would allow us to inject more volume at no more surface pressure than we're already injecting and potentially even less. It would allow us to inject more water, which would -- we would be -- we would not have to drill as many saltwater disposal wells in this area in order to meet our operational needs. That's going to help reduce our

impact on the surface, our surface footprint. And we could do that without any -- without dramatically affecting the reservoir pressure in the Devonian or any of the nearby wells in the area.

Q. In your opinion, will the approval of this application impair any correlative rights within the Devonian or any nearby areas?

A. No, not -- not any at all.

Q. Have you identified any hydrocarbon production within the area of the influence of this wells?

A. No. The Devonian here is --is void of any hydrocarbon production.

Q. Do you believe that this injection will result in contamination of any freshwater sources within the area?

A. No, not at all.

Q. Would approval, in your opinion, be in the best interest of conservation?

A. Yes, definitely.

Q. And do you believe it would protect against waste?

A. Yes.

Q. Mr. Robinson, were Exhibits 1 through 10 prepared by you or under your direct supervision?

A. They were.

MR. RANKIN: Mr. Examiner, I would move into admission Exhibits 1 through 10, and I'd pass the witness.

EXAMINER DAWSON: Exhibits 1 through 10 will at this time be admitted to the record.

(Black River Water Management Co., LLC Exhibit Numbers 1 through 10 are offered and admitted into evidence.)

EXAMINER DAWSON: Mr. Goetze?

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. One question -- well, a couple.

Since this is a familiar project with us, any of the exhibits you provided are a duplication of what we have already considered and talked about.

Your second witness will be a --

MR. RANKIN: Our second witness today will be Mr. Adam Lange. He will be addressing the tubing and casing clearance issues.

EXAMINER GOETZE: He'll be finishing discussion.

MR. RANKIN: Yeah.

EXAMINER GOETZE: And we'll be discussing I-S at a later time?

MR. RANKIN: That's correct.

EXAMINER GOETZE: Okay. In that case, no presentation, I would like the information provided as to give us what we need: Increased notification, as well as the actual presentation of the data for the influence, is something we missed from before.

So I have no further questions of this witness. Thank you.

EXAMINER DAWSON: Mr. Brooks?

EXAMINER BROOKS: No questions.

CROSS-EXAMINATION

BY EXAMINER DAWSON:

Q. I just have a few questions, Mr. Robinson.

A. Yes, sir.

Q. The wells that you were comparing this one to, the Rustler Breaks wells -- or I'm sorry -- the Black River SWD #1, the other well --

A. Yes, sir.

Q. -- those are also -- those are 4-1/2 currently, correct?

A. The #1 well is 4-1/2-inch tubing, yes. So the step-rate test that we did on that well did account for the friction in the 4-1/2.

MR. RANKIN: Just a point of clarification, Mr. Examiner, that was approved to go up to 5-inch tubing, but it hasn't yet been changed out.

EXAMINER DAWSON: Okay.

Q. (BY EXAMINER DAWSON) And these are all commercial saltwater disposal wells, or are they used for Matador operations?

A. Primarily Matador's operations at this time. And there may be plans to go commercial with these disposal wells, but currently for Matador's use.

Q. All right. That's all the questions I have. Thank you.

MR. RANKIN: Thank you, Mr. Examiner.

I'd like to call our second witness, Mr. Adam Lange.

EXAMINER DAWSON: Okay.

ADAM C. LANGE,

after having been previously sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. RANKIN:

Q. Mr. Lange, how are you today?

A. Good. Thank you. How are you?

Q. Good.

Would you please state your full name for the record?

A. Adam Charles Lange.

Q. By whom are you employed?

A. Matador Resources Company.

Q. In what capacity?

A. Senior drilling engineer.

Q. And how long have you worked with Matador?

A. Around five years.

Q. What are your duties in that role?

A. I plan, design and supervise the drilling of oil and gas and saltwater disposal wells.

Q. And have you previously had the opportunity to testify before the Division?

A. Yes.

Q. Have your credentials as an expert in petroleum engineering been accepted and made a matter of record?

A. Yes, it is.

Q. Are you familiar with the specific injection application that's the subject of this hearing?

A. Yes.

Q. And have you conducted a study to evaluate the tubing and the completion program for this well?

A. I have.

MR. RANKIN: Mr. Examiner, I would tender Mr. Lange as an expert in petroleum engineering.

EXAMINER DAWSON: Mr. Lange will be accepted as an expert in petroleum engineering at this time.

MR. RANKIN: Thank you very much.

Q. (BY MR. RANKIN) Mr. Lange, you have proposed well casing and tubing design, correct?

A. Yes, sir.

Q. And will you please review for the Examiners the proposed existing and proposed casing and tubing on your Exhibit Number 11, please?

A. Yes, sir.

Exhibit Number 11 is a cross-sectional bird's eye view of the tubing and casing designs we are discussing today. On the left, you have as currently permitted with 4-1/2 tubing inside 7-5/8 casing, and on the right, you have as proposed, which is 5-1/2-inch tubing inside 7-5/8 casing. On both, the inner thick circle is the tubing body. The outer thick black circle is the casing body, and the dotted line in between the two represents the coupling OD.

In the diagram on the right, you can see that there is a 1.265-inch annular gap between the body of the tubing and the body of the casing, and a 0.715-inch annular gap between the coupling and the 7-5/8-inch casing.

Q. Now, has this well been -- this well has been currently drilled, correct?

A. Yes.

Q. So it's been drilled.

And is this tubing in place?

A. Yes, sir. The 4-1/2 tubing -- the 4-1/2-inch tubing has been installed.

Q. But it's not yet producing -- or, I mean, rather, not yet injecting?

A. No. We are not yet injecting on this well.

Q. Have you analyzed whether there is sufficient clearance between the 7-5/8-inch casing and the proposed 5-1/2-inch tubing?

A. Yes. The clearances that I gave in this drawing are adequate.

Q. Okay. And your opinion is based on your experience because you have a well that's been approved for even less clearance; is that correct?

A. Yes.

Q. And that would be in your demonstration in Exhibit Number 12. Is that the Black River SWD #1 well that was recently approved by the Division?

A. Yes. The Black River SWD #1 well has been approved to run 5-inch tubing inside 7-inch casing.

Q. Will you review for the Examiners the comparison to what's proposed here and what's been approved for that well?

A. Yes, sir.

As you said on Exhibit 12, we have the same format as the previous exhibit. Here the diagram on the left is the as-approved 5-inch tubing inside 7-inch casing on the Black River SWD #1, and on the right is the proposed 5-1/2 tubing inside 7-5/8 casing as proposed for the Rustler Breaks SWD #3. It has the same annotations, with the annular gaps, and you can see that in both cases, between the tubing body and casing and between the tubing coupling and casing, you have a greater clearance in the 5-1/2 inside 7-5/8 casing than the 5-inch inside 7.

Q. Okay. So the gaps that are proposed for this well with the 5-1/2-inch tubing, are they sufficient for standard fishing tools?

A. Yes. Both the 5-inch tubing inside 7-inch casing and the 5-1/2-inch tubing inside 7-5/8 casing are both adequate for fishing.

Q. Is that -- are they -- the standard -- sort of standard fishing tools which are being employed in this circumstance, are they presented in Exhibit 13?

A. They are.

Q. Will you just review for the Examiners these tools and how they are employed?

A. Yes, sir.

Exhibit 13, on the left, you have a Bowen

Series 150 overshot with some spiral grapples. In the table below, you have some overshot ODs and catch sizes. The overshot OD of 6-5/8 is the one on the right, and that has a maximum catch size of 5-1/2. The 7-5/8 casing in this well is 6.64-inch API drift. So this 6-5/8-inch overshot OD can be used to fish 5-1/2 tubing body with no modifications.

On the right, we have some spearfishing tools with the same table beneath. In the event that we have a tubing coupling looking up, the tubing -- the 5-1/2-inch tubing will be able to be fished either with the spear tool as displayed here, or the coupling can be burned over, and we can catch the 5-1/2-inch tubing body with an overshot like the one on the left.

Q. Okay. So the -- so the gaps are adequate for either a fishing or an overshot tool that's conventionally used for these purposes?

A. Yes, sir.

Q. Okay. Now, with respect to the fact that this well was drilled, was there any significant deviation that would result in any impediments using these conventional fishing tools?

A. No, sir.

Q. And is that depicted in your next exhibit, 14?

A. Yes, sir.

In Exhibit Number 14, we have an as-drilled profile of this Rustler Breaks SWD #3 well. Both of these plots have TVD as the y-axis. On the left plot, you can see the easting of the well as the x-axis, and you can see that this well is relatively vertical with no major deviations.

On the plot on the right, we have dogleg severity as the x-axis, and you can see there are no significant doglegs that would prevent figuring of this tubing.

Q. Now, in your opinion, is there any unreasonable enhanced risk as a result of switching from 4-1/2 to 5-1/2-inch tubing within this casing diameter?

A. No, sir.

Q. With that, let's move on to talk about the notice, everybody's favorite topic.

Did Black River review and update the exhibit that provided notice in the administrative approval for this well?

A. Yes, sir.

Q. And did they, in fact, increase -- extend the notice from half a mile a full-mile radius?

A. Yes, sir.

Q. And is Exhibit 15 a copy of the affidavit prepared by me indicating that my office -- that I

prepared and sent notice to those individuals you've identified?

A. Yes, sir.

Q. And do those following pages reflect the notice letter that was issued by our office?

A. Yes, sir.

Q. Along with the green card and green card receipts that were sent out and received?

A. Yes.

Q. And I think in some cases, there is a United States Postal Service tracking report; is that correct?

A. Yes.

Q. And in addition to providing notice by letter and certified mail, did we also publish notification in the "Carlsbad Current-Argus"?

A. Yes.

Q. Is that depicted in Exhibit Number 16?

A. It is.

Q. And if you'll notice, Mr. Lange, we also identified the notice parties by name in that Notice of Publication. Do you see that?

A. Yes.

Q. So they were also identified by name.

In your opinion, Mr. Lange, would a prudent operator seek to exchange the 4-1/2-inch tubing to

5-1/2-inch tubing in this well?

A. Yes, sir.

Q. Were Exhibits 11 through 16 either prepared by -- I guess 11 through 14 prepared by you or under your direct supervision?

A. Yes.

MR. RANKIN: Then with that, Mr. Examiner, I would move to admit Exhibits 11 through 16 into the record.

EXAMINER DAWSON: Okay. At this point Exhibits 11 through 16 will be admitted to the record.

(Black River Water Management Co., LLC Exhibit Numbers 11 through 16 are offered and admitted into evidence.)

MR. RANKIN: No further questions. I pass the witness.

EXAMINER DAWSON: Mr. Goetze?

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. Two questions, sir. One, we completed the well as proposed, so we have a 7-5/8-inch in place, and we did not have any problems with the drilling operations as far as cementing and casing, right?

A. Yes, sir.

Q. And for consideration in the case, we do have

tubing loss. So what kind of rig are we talking about moving in to get tubing out?

A. It would either be a -- I can't remember the class. But I think it's like a Class 5 workover rig or --

Q. So you think you're going to be able to pull this tubing with a workover, or will you have to step up to a real rig?

A. We've looked at both options, but we've done it with a workover -- a workover rig in the past. And with how new the well is, we don't expect any problems with -- and so --

Q. Well, I know. Not in your lifetime --

A. Right.

Q. -- but we're looking at 20 years, and people have talked about 30 years.

A. Yes, sir.

Q. So I expect at one time you will end up pulling tubing, and we just look at that for the anticipation of notification to the district people.

A. Yes, sir.

Q. So anyway, that's all I needed. Thank you.

A. Thank you.

EXAMINER DAWSON: Any questions, Mr. Brooks?

MR. BROOKS: Yeah, something about the notices.

CROSS-EXAMINATION

BY EXAMINER BROOKS:

Q. How did you compile your list of people to notice?

MR. RANKIN: I think, Mr. Examiner, the notice list was identified based on the affected parties from the administrative application. They were confirmed to be updated.

EXAMINER BROOKS: Okay. There's not anything in your -- oh, from the original applications?

MR. RANKIN: Correct.

EXAMINER BROOKS: Yeah. And there is nothing in your exhibits here that shows what tract what people relate to, right?

MR. RANKIN: Oh, no. I don't think so, Mr. Examiner. We don't have that in this case.

EXAMINER BROOKS: Okay. Now, were there any people -- you published. Were there people for whom you had no good addresses?

MR. RANKIN: We had -- we believe we had good addresses for all the affected parties, but we did identify all the parties to whom notice was delivered in our notice of publication.

EXAMINER BROOKS: Yeah. You noticed -- now, the ones to whom the notice was not -- you don't have green cards --

MR. RANKIN: Correct. Correct.

EXAMINER BROOKS: -- did you make a diligent effort to find alternative addresses for those people?

MR. RANKIN: I would have to confer with the client. The land rep did the work.

EXAMINER BROOKS: Okay. So this witness doesn't have knowledge of it?

MR. RANKIN: Not of the -- not of the actual -- I think Mr. Lange -- the actual land work, I don't believe so.

THE WITNESS: Yes, sir.

EXAMINER BROOKS: Okay. So he would not be able to testify as to whether or not you gave -- gave -- whether or not you made a diligent search for -- for additional addresses of people who you did not get green cards?

MR. RANKIN: My understanding is that, you know, according to the rule, they identified the lessees and affected parties by their address of record for the record title, and then that was the -- that's at least what they did. I'm not sure if they went beyond that.

I'd have to find out. If that's a request, I could provide that to you.

EXAMINER BROOKS: Okay. We may want the record supplemented. I think we want the record supplemented with that information, since there are some people who apparently received notice only by -- only by publication.

MR. RANKIN: Would you like that in the form of an affidavit?

EXAMINER BROOKS: Affidavit would be acceptable.

Pass the witness.

EXAMINER DAWSON: Okay.

CROSS-EXAMINATION

BY EXAMINER DAWSON:

Q. Do you know of any other operators who are using the 5-1/2-inch tubing in that immediate area? Are there any other operators who are using that on their SWDs?

A. In the -- so let me go to Exhibit -- Exhibit 4. Several of these wells have been permitted for a tapered 4-1/2-by-5-1/2 tubing string, and then, you know, there are -- not in the immediate area, but there are some wells in a larger area -- I'm not exactly sure where that is -- where operators have had 5-1/2-inch tubing

approved. But simply because of the approval process at this point, I think the tapered 5-1/2-by-4-1/2 is the most common approach.

Q. So you're not really aware of any of their successes or how that's worked for them?

A. No, sir, just because there is not a -- not a data set yet.

Q. Okay. All right. That's all the questions I have. Thank you very much.

A. Thank you.

MR. RANKIN: Thank you, Mr. Examiner. With that, no further questions, and I would ask that the case be taken under advisement. We'll submit the supplemental information as requested in the affidavit as soon as we can.

EXAMINER BROOKS: Thank you.

EXAMINER DAWSON: Okay. So at this point, Case Number 15911 will be taken under advisement. Thank you very much.

(Case Number 15911 concludes, 11:43 a.m.)

STATE OF NEW MEXICO

COUNTY OF BERNALILLO

CERTIFICATE OF COURT REPORTER

I, MARY C. HANKINS, Certified Court Reporter, New Mexico Certified Court Reporter No. 20, and Registered Professional Reporter, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings that were reduced to printed form by me to the best of my ability.

I FURTHER CERTIFY that the Reporter's Record of the proceedings truly and accurately reflects the exhibits, if any, offered by the respective parties.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this case and that I have no interest in the final disposition of this case.

DATED this 12th day of January 2018.

MARY C. HANKINS, CCR, RPR
Certified Court Reporter
New Mexico CCR No. 20
Date of CCR Expiration: 12/31/2018
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