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 KEY ENERGY SERVICES, LLC FOR A SALTWATER DISPOSAL WELL KNOWN AS THE QUEEN LAKE FEDERAL 19 NO. 1, SECTION 19, TOWNSHIP 24 SOUTH, RANGE 29 EAST, EDDY COUNTY, NEW MEXICO. CASE NO. 20583

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

August 22, 2019

Santa Fe, New Mexico

BEFORE: MICHAEL McMILLAN, CHIEF EXAMINER
PHILLIP GOETZE, TECHNICAL EXAMINER
KATHLEEN MURPHY, TECHNICAL EXAMINER
BILL BRANCARD, LEGAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Michael McMillan, Chief Examiner; Phillip Goetze and Kathleen Murphy, Technical Examiners; and Bill Brancard, Legal Examiner, on Thursday, August 22, 2019, 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.

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EXHIBITS OFFERED AND ADMITTED

(8:27 a.m.)

EXAMINER McMILLAN: The next case I'm going to call is Case Number 20583, application of Key Energy Services, LLC for a saltwater disposal well known as the Queen Lake Federal 19 No. 1, Section 19, Township 24 South, Range 29 East, Eddy County, New Mexico.

Call for appearances.

MR. NANCE: Good morning. Clay Nance for the Applicant, Key Energy.

EXAMINER McMILLAN: You need to sit there (indicating).

MR. NANCE: Okay.

EXAMINER McMILLAN: Just give him a second.

Any other appearances?

MR. DOMENICI: Pete Domenici for Solaris.

MS. BISONG: Susan Miller Bisong on behalf of NGL.

EXAMINER McMILLAN: Any others?

MR. RANKIN: Mr. Examiner, Adam Rankin on behalf of OXY. We have withdrawn our entry of appearance. So just for the record, I'll make sure that was received, that we have withdrawn our entry in this case.

EXAMINER GOETZE: What about your -- Mr. Rankin, what are your interested party? Are you

making any standing as far as what you have as an appearance for Delaware Energy?

MR. RANKIN: I don't think that was in this case.

EXAMINER GOETZE: Milestone?

MR. NANCE: I don't recognize that.

EXAMINER GOETZE: It's on the record.

MR. RANKIN: Mr. Examiner, I believe that would be for the Milestone. That's the next one on the docket.

EXAMINER GOETZE: Was that scary?

MR. RANKIN: Yeah (laughter).

(Laughter.)

EXAMINER GOETZE: Scared me, too. I'm looking at the wrong folder.

MR. NANCE: You ready?

EXAMINER McMILLAN: Yes.

MR. NANCE: Okay. I appreciate that you've allowed us to speak today. My name is Clay Nance of Austin, Texas. I represent Key Energy.

I have three witnesses to support this application for a disposal well in Eddy County. We've done a lot of technical review and research and investigation, and we believe this well is suitable at this particular location. And my witnesses are Mike

Johnson, an engineer; Mike Eide, a geologist; and Rene Aqueron, which is a representative of Key Energy.

EXAMINER McMILLAN: Okay. If the witnesses would please stand up and be sworn in at this time.

(Mr. Johnson, Mr. Eide and Mr. Aqueron sworn.)

MR. NANCE: Ready for our first witness?

EXAMINER McMILLAN: Yeah.

MR. NANCE: Okay. Mike Johnson.

And I have a set of exhibits for each of my three witnesses. I brought seven.

EXAMINER McMILLAN: Okay. Well, all the affected parties need them.

MR. NANCE: Right. When they all stood up, I was thinking I wasn't going to have enough.

EXAMINER McMILLAN: Then we've got a problem.

MR. NANCE: And, Mr. Examiners and Mr. Johnson, you should have Exhibits 1 through 7, marked at the bottom right. Obviously, we'll walk through them and ask for admission later.

WILLIAM M. JOHNSON,

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

DIRECT EXAMINATION

BY MR. NANCE:

Q. Mr. Johnson, would you please state your full name for the record?

A. My name is William Michael Johnson. I go by Mike.

Q. Could you tell the examiners about your background and experience?

A. Yeah. I've got a BS in petroleum engineering from the University of Texas at Austin. I've got a Master of Science in engineering from the University of Texas at Austin.

I guess over the last 30 years of my career, I've spent the bulk of that working on injection well systems, saltwater disposal, industrial waste, product storage, and that's been the bulk of my experience. And we're here today to talk about saltwater disposal.

Q. Do you have experience with injection wells in southeast New Mexico?

A. I do.

Q. And do you have experience supporting applications, filing applications in front of regulatory jurisdictions such as the OCD?

A. I do.

Q. And Exhibit 1 that I've handed to you is your -- a copy of your resume; is that correct?

A. That's correct.

Q. Is this a true and correct copy of your work experience and background?

A. It is.

MR. NANCE: Examiners, I tender Mr. Johnson as an engineer -- he's an expert in engineering.

MS. BISONG: No objection.

MR. DOMENICI: No objection.

EXAMINER McMILLAN: So qualified.

Q. (BY MR. NANCE) What were you asked to do in this matter?

A. I was contacted by Key Energy Services to assist them in an application to inject saltwater into a commercial well.

Q. Exhibit 2 in front of you, is that the application and supporting materials that you submitted?

A. Yes, it is.

Q. Okay. Could you walk us through Exhibit 2 and summarize the important points?

A. So we filed the application to the State under a C-108 form, which was application to inject salt water. We went through the instructions that were given

by OCD and filed a complete report and a complete application. We included well information, location information, geologic information and notification information.

Q. So this project is the re-entry of an existing wellbore that was plugged in 2013; is that correct?

A. That's correct.

Q. And what is the proposed injection interval?

A. The proposed injection interval is in the Devonian below 14,500 feet.

Q. The top of the injection interval is 14,5. And what is the base?

A. Well, the base is to be determined, but we're asking for 16,000 feet so that we can delineate the base of the Devonian as well.

Q. What is the maximum volumes of daily disposal that you're applying for?

A. 15,000 barrels per day.

Q. How about the average volumes?

A. 10,000 barrels per day.

Q. Okay. How does that rate generally compare to other operators in southeast New Mexico in terms of disposal capacity?

A. Well, from what I've seen, it appears that -- I would say that the average commercial saltwater disposal

well in that area are asking for higher volumes than 15,000 barrels per day. It looks to be that 20- to 30,000 barrels is typical.

Q. And why did Key Energy and yourself choose this location for the disposal well?

A. Well, I think -- and I don't want to speak for Key, but from what I understand is that the location is strategically located in an area that's fixing and beginning to be developed, and their desire is to enter into the market in that area and provide disposal services to their existing clients and potential other clients.

Q. Based on your examination and review, do you believe there is any oil and gas production in the Devonian Formation?

A. No, I don't.

Q. Okay. Do you know the approximate depth of the USDW?

A. It's approximately 500 feet. I think it's defined as the top of the salt.

Q. Okay. And we have a geologist to discuss that today?

A. We do.

Q. Okay. Let's move forward with Exhibit 2. There are a few maps with radius on them. What are

these?

A. So we have a half-mile radius and a one-mile radius drawn around the subject well, and within those radii, we've identified the existing penetrations, be they oil and gas or saltwater disposal, but we didn't see any saltwater disposal there.

Q. Within the one-mile radius of the Key Energy proposed well, did you locate any wellbores that penetrated the top of the injection interval?

A. No.

Q. Why is this important?

A. Well, it's important because the presence of artificial penetrations into the top of the injection zone could be a conduit for fluid migration out of the injection zone at some future time due to injection.

Q. Do you believe there are any potential conduits at this location?

A. No.

Q. You also have in Exhibit 2 a document that is entitled "Current Wellbore Diagram," and behind that in color is a proposed wellbore diagram. Could you discuss that with the examiners, please?

A. So the well is a current plugged-and-abandoned location. What we're proposing to do is re-enter the P&A'd well, drill out the plugs, evaluate the casing and

cement behind pipe and then to set a whipstock and then directionally drill a sidetrack recompletion borehole and run new casing and then perform the completion into the Devonian as proposed.

Q. Okay. And when you say sidetrack the well, in what direction do you plan on sidetracking the well?

A. Well, we can -- we can directionally drill in any direction, but what we can do is we can make a strategic decision to put it in any direction that we want towards or away from a potential observation point. So in this case, if someone has an -- an interested party has a well that may be close by, we can orient the sidetrack wellbore in the opposite direction to put distance between boreholes.

Q. In your opinion, do you believe the configuration of the proposed wellbore would be protective of the USDW?

A. Yes.

Q. In your opinion, do you believe the proposed configuration would be protective of oil-and-gas-producing formations?

A. Yes.

Q. Do you believe the injected fluids would be confined to the injection interval?

A. Yes.

Q. Okay. And after the wellbore configurations, there is a geology study, and Mr. Eide's here to speak to that, correct?

A. Yes.

Q. Okay. And on the last page of Exhibit 2 is a list of parties. Does that list entail who you notified for this application?

A. Yes, it does.

Q. Okay. And you have the operators and the lessees within a half-mile of record -- half-mile radius, correct?

A. Yes.

Q. Okay. And you have the landowner, the BLM, correct?

A. That's correct.

Q. Is there any indication that the BLM is opposed to this application?

A. Not at this point.

Q. Let's move on to Exhibit 3. What is Exhibit 3?

A. So Exhibit 3 was a request by OCD staff to provide some additional information to support the application, and so we provided that information. And then during that period, I believe, is when the first notice of protest was received, and so there was no more contact with technical staff regarding the application.

But this -- this email was our response to that request for additional information.

Q. The first attachment on Exhibit 3 is a newspaper notice, correct?

A. Yes.

Q. And was that published in the Loving newspaper in Eddy County?

A. Yes.

Q. And you have some more documents, including the geologic study, which that's just a reiteration of what was provided in Exhibit 2?

A. That's correct.

Q. And then there are some responses by Mike Eide, geologist, which he can discuss in a second. And then there is a well log, correct?

A. Yes.

Q. Okay. You mentioned that a protest was filed, and so the case was forwarded to the examiners for hearing. Who was that protest?

A. It's my understanding that it's NGL Permian.

Q. Okay. Was there any description in NGL's protest email as to what their concerns were?

A. No. I don't believe I ever have saw the context of their protest.

Q. Okay. Do you know whether or not NGL is a

competitor in the disposal well business?

A. I understand that they are.

Q. Okay. What about OXY?

A. So OXY filed a notice to appear before the original hearing date, and then it's my understanding that OXY and Key have worked that out, and it's now been dismissed.

Q. And Exhibit 4 is the withdrawal appearance, correct, filed in this case?

A. Yes, it is.

Q. Okay. And Solaris has filed a notice of appearance in this case, correct?

A. Yes.

Q. Did Solaris file a notice of appearance prior to the first scheduled hearing date?

A. Not to my knowledge, no.

Q. When did they file the notice of appearance?

A. Well, I saw the notice last week.

Q. Okay. Let's flip through Exhibits 5 and 6.

MR. NANCE: And, Examiners, those are my documents that I wanted to get into the record. It's an application of hearing with the parties served, as well as a hearing application, in Exhibit 6, the same application that was served upon Solaris, with a supplemental certificate of service. I just wanted to

make sure that was of record.

Q. (BY MR. NANCE) So tell me about Solaris' nearby proposed operations.

A. So from what I understand is they have a permitted, undrilled location approximately a half a mile from the subject well and that -- I presume that their concern -- part of their concern is with the impacts of Key Energy Services' well at their well location.

Q. Okay. And being undrilled, obviously the well is not operational in the disposal of liquids, correct?

A. That's correct.

Q. Okay. So if a well is undrilled, that means it is not a wellbore that penetrates the injection interval at this point, correct?

A. That's correct.

Q. Okay. And did you prepare anything for today's hearing to address any concerns they may have at that Solaris location?

A. Yes, I did.

Q. Okay. What is that?

A. So we had visited back and forth about potential impact from Key Energy Services' injection at any point in the injection interval, and the only -- the only method I can come up with from a physical

standpoint is pressure interference between wellbores. So I did some calculations to determine what the pressure influence from Key Energy's wellbore would be at certain distances away, and in this case, I used the distance to the Solaris permit location.

Q. And your calculations are shown in Exhibit 7, correct?

A. Yes.

Q. Okay. Did you follow industry standards?

A. Yes. What I did is I used methodology that has been presented -- that I've done before to EPA Region 6, for the Texas Commission on Environmental Quality and the Louisiana Department of Natural Resources in those cases that require pressure front calculations. So I just employed the same method here, thinking that it's appropriate to do so.

Q. And what are your findings?

A. Well, my findings are that assuming maximum injection rates for continuous periods over time, you can see in the tables that the pressure buildup due to the wellbore from Key Energy Services is pretty small.

Q. Okay. And in terms of any kind of effect, what does that tell you?

A. It tells me that this is not much effect at all.

Q. On the Solaris permitted location?

A. That's correct.

Q. In the event they drill and complete and dispose of fluids there, correct?

A. That's correct.

Q. And the Berry -- excuse me. The Solaris well is permitted for what daily volume?

A. I think it's 30,000 barrels per day.

Q. Okay. And Key Energy is proposing 15,000 barrels per day, correct?

A. That's correct.

Q. So Solaris is permitted for double the disposal volumes. Does that influence your findings?

A. Well, I didn't -- I didn't do the calculation assuming that Solaris was injecting into their own well. I can tell you that when they do inject into their own well, the influence from their own injection activities will overwhelm what we can see from the Key Energy Services injection activities.

Q. Does that further assure you that the Key well will have no adverse impact on the Solaris well?

A. It does.

Q. Is there anything else you'd like to add in terms of Exhibit 7?

A. I think that's it.

Q. Okay. And just to summarize, do you believe this Key Energy application is protective of the USDW?

A. Yes, I do.

Q. Is it protective of oil and gas formations in this area?

A. Yes.

Q. Is it your opinion that the Devonian is the preferred zone of disposal in this area?

A. Yes.

Q. So you're using the disposal zone that others use and is predominantly used in this area?

A. That's correct.

Q. Do you believe fluids will be confined to the disposal zone?

A. Yes.

Q. Okay. And you stated earlier that you do not see any potential conduits for the migration of fluids from the disposal zone into the USDW, correct?

A. That's correct.

Q. Okay. Do you believe Key has satisfied the OCD's permitting regulations?

A. I do.

Q. Okay. Do you believe Key's disposal well application is in the interest of conservation and the prevention of waste?

A. I do.

MR. NANCE: Examiners, at this time I'd like to move for admission of Exhibits 1 through 7.

MR. DOMENICI: No objection.

MS. BISONG: No objection.

EXAMINER McMILLAN: So Exhibits 1 through 7?

MR. NANCE: Yes, sir.

EXAMINER McMILLAN: Okay. Exhibits 1 through 7 may now be accepted as part of the record.

(Key Energy Services, LLC Exhibit Numbers 1 through 7 are offered and admitted into evidence.)

EXAMINER McMILLAN: Cross?

MS. BISONG: I don't have any questions.

CROSS-EXAMINATION

BY MR. DOMENICI:

Q. Mr. Johnson, during the preparation of this application, were you or any of your staff aware of Solaris' permit?

A. Not until after we had submitted.

Q. When did you become aware of that permit?

A. I became aware of Solaris' permit -- I believe it was in June -- June.

Q. June of this year.

And other than the last page -- excuse me -- the last page, do you depict that well location on any of the radius circles that identify different activities? So is that well depicted on any of your maps?

A. Which well?

Q. Solaris' Berry 1 well?

A. No, it's not.

Q. Why not?

A. It wasn't a well of record on the records that I had reviewed at the time that I prepared the application.

Q. You're aware the permit was issued in March of this year?

A. I am now. Yes.

Q. And how does the injection zone compare between the Berry well and what you are proposing?

A. In terms of depth or --

Q. Depth -- is it the same depth?

A. I assume it is.

Q. Is it the same length, injection interval?

A. I'm not sure. You'll have to ask the geologist that question, but I presume that the thickness of the injection zone is pretty -- is pretty consistent throughout the area of review.

Q. Okay. At this time you don't know what the injection interval will be, if I understand correctly?

A. Well, I know what it's going to be as far as the permit goes. Yes. There will be an open-hole section -- or excuse me -- a perforated liner section between 14,500 and 16,000 feet.

Q. So I thought you testified you were waiting to drill to see exactly where the injection interval would be.

A. That's correct. We'll identify the top of the bottom of the Devonian. And from the geologic study we did, that's where we've decided that we're going to -- that we're going to drill the well.

Q. And looking at your Exhibit 7, you indicated this was a method you've used in other -- for other regulators, essentially; is that correct?

A. Yes. That's correct.

Q. Have you ever presented this to the New Mexico OCD?

A. I have not.

Q. Have you -- have you -- is there a model that goes behind this? Did you use a model?

A. Yes. It's a public information model, but the methodology used in the equations that are presented there are -- they're general methods used in hydraulics

and hydrology through porous media.

Q. And you said that Solaris' injection will overwhelm any impact of Key Energy, if I have your testimony correct?

A. That's correct.

Q. What do you mean by that?

A. So the injection-pressure buildup at the point of injection must be higher than it is anywhere else. And so if I'm injecting half a mile from Key's well at 30,000 barrels per day, I didn't calculate what that would be at the Solaris well, but it's going to be significantly higher, because the way the pressure front moves is as you move out radially, the pressure falls off. You can see, for example, at the end of one year, we've got a pressure buildup at the Solaris location from Key Energy of 30 psi. That pressure is at a distance of injection of a half a mile away. So if Solaris is injecting 30,000 barrels a day at that point of injection, the pressure at that point will be significantly higher.

Q. And what will that create as far as the ability for Solaris to inject at that location?

A. I think it won't have any impact on Solaris at all.

Q. And is there a particular direction of pressure

that you used or did you use --

A. It's a radial pressure buildup assuming that the injection zone is laterally extensive. So the -- with the injection well being the center and then the radius in any direction away from the well is what this pressure calculation represents.

Q. Was there any data you used to use that -- make that determination?

A. Yes.

Q. What data?

A. I used a thickness of the injection zone. I used porosity of the injection zone, and I used the permeability of the injection zone.

Q. So let me restate the question. Was there any data you used to support your assumption that it would disperse essentially equally from Key Energy's well?

A. Looking at the geologic mapping in the area that was -- that it was laterally extensive in every direction is what I assumed was going to be a radial response.

Q. Is that reflected in Exhibit 7?

A. Yes.

Q. Is that, not your conclusion, but what geologic data you looked at to come to this determination?

A. The model that was used in Exhibit 7 is a

general model. Then you input specifics based on what your geologic review are to feed that model to get the results that you get. So the modeling methodology itself works for more than just this case.

Q. Do you know if there is a formula used by OCD to permit or disallow disposal wells within a particular distance of each other?

A. I'm not aware of one.

Q. That's all I have. Thank you.

EXAMINER McMILLAN: Go ahead, Mr. Goetze.

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. Good morning.

The first item: When you make an application, wellbore diagram, I see that we are missing a plug that was put at top when the well was P&A'd, 2013. I'd ask you to review the well file in a little bit more detail in the future.

As far as the C-108 application, I have here -- I'll put this to you. As to the item regarding an affirmation statement, I see there is a reference to a DS -- DS -- I mean, what we're after is an affirmation from an individual qualified, and usually we include that in the C-108. So there's been testimony given here, but we would ask that it be put into writing and

also provided.

MR. NANCE: Yes, sir. We have that as an exhibit for my geologist.

EXAMINER GOETZE: Okay. But it's not in this package?

MR. NANCE: It's not in the C-108 package, but it's in our hearing exhibits. And I can tell you that -- I mean, maybe you can testify as to your communication with our geologist in terms of what your parameters are.

EXAMINER GOETZE: That's fine. Again, it is an affirmation statement.

MR. NANCE: Okay.

EXAMINER GOETZE: On every EPA application, they ask for that, whether it's a Phase 1 or a discharge plan, an affirmation statement. So for clarity in the future, include one by someone qualified to make that statement.

MR. NANCE: Okay. Yes, sir.

Q. (BY EXAMINER GOETZE) Now to visit the well. This well was drilled in '82, plugged and abandoned, and its history. What would be your estimate as to how many perforations are in this well?

A. Well, looking at the diagram that I reviewed in the records, there are multiple sets of perforations,

probably a half dozen.

Q. And it takes us all the way from Ramsey down to almost the top of the Wolfcamp -- well, the Bone Spring. So I've got perfs all the way down 3rd Bone Spring, and you are proposing to sidetrack this beginning -- where is your window going to be?

A. Approximately 10,800 feet.

Q. So where does that put us in the geologic section? That puts us in the Wolfcamp?

A. That puts us in Wolfcamp.

Q. So if you're sidetracking your proposed liner from Wolfcamp through the Penn series to top of Devonian, correct?

A. Yes.

Q. Any ideas as to the quality of this well once you have drilled out all these plugs with as many perfs that have been put into it as to its ability to pass an MIT?

A. Well, the plan is once the well has been re-entered and the plugs have been drilled out, we're going to confirm the mechanical integrity condition of the well, the cement behind the pipe and the casing as well. And then we will perform pressure-integrity testing of the casing, and depending on what we find there, we'll decide what, if any, remedial actions are

needed, which would include all the way up to possibly running a full-length liner in the eventual borehole.

Q. Well, okay. So if we're going to be pulling up all the way to surface, this does change the configuration and your ability to inject, doesn't it, as far as tubing sizing?

A. Yes. If we find that the -- that the condition of the casing above our kickoff point needs to have a liner put in the way, then we'll have to revisit that.

Q. Okay. Just one other item -- oh, no. That's it for me. Thank you very much.

CROSS-EXAMINATION

BY EXAMINER MURPHY:

Q. The Solaris well that's the Berry, that's not drilled but it's permitted; is that right?

A. That's my understanding.

Q. And you didn't see the permit until June, or you didn't know that it was there until June?

A. That's correct.

Q. Okay. No further questions.

CROSS-EXAMINATION

BY EXAMINER McMILLAN:

Q. Okay. So you agree to a pressure testing, right?

A. Yes.

Q. After you clean out the plugs?

A. That's correct.

Q. Will you -- would you be willing to run the pressure tests and meet with the Artesia District Office to go over the results?

A. Certainly.

Q. Will you also be willing to run a pressure -- excuse me -- a casing integrity log and meet with Artesia to go over the results?

A. Yes.

Q. Okay. And the next thing is you had requested a 4-1/2-inch tubing?

A. Yes.

Q. Well, that -- you can't get an overshot in there. So the maximum you're going to get is 2-7/8.

A. So can't get an overshot in which section?

Q. Yeah. Through your liner.

A. If we run 4-1/2 flush joint --

Q. No. You still can't -- you're going to get -- the maximum that the OCD will allow is 2-7/8.

A. Okay.

Q. And the other thing is if you're going to cut a window, we're going to require you to run casing and circulate the cement to surface.

A. Okay.

Q. And we're also going to require you, when you do that, to run a cement bond log. Do you have any problems with that?

A. No, I don't.

Q. And the question I'm also getting is: You said you're going to cut the window at 10,8, but when you look at the wellbore diagram, you've got a plug from 10,8 to 10,6. So how are you going to do that?

A. Are we looking at the proposed?

Q. Yes.

A. Okay. So I'm seeing my whipstock at 10,8.

Q. Okay. But look at the -- okay. But the problem is that plug runs from 10,8 to 10,6.

A. I'm sorry? I don't -- I don't understand what plug you're referring to.

Q. Okay. My question is how are -- so to me it appears you're more than likely going to cut a window at 10,5.

A. Well, I think that it's not going to be any deeper than 10,800 feet. If we have a plug there, then we can dress that plug off to whatever depth we want to set our whipstock.

Q. And then I guess on your calculations, I'm not clear. You don't show the effects of Solaris' well in there.

A. No, I don't.

Q. Why?

A. What I wanted to find out was what is the impact that Key has at that observation point, and I didn't consider anything from that operator as far as their contribution to -- to injection.

Q. But then you did say that it would affect Key, right?

A. It could possibly, but I -- I haven't run that calculation.

Q. Why didn't you run that calculation?

A. Well, I just didn't -- I just didn't do it. I wanted to see what the impact that Key had at Solaris. There's -- I don't know what Solaris' intentions are at this point except they have a permitted location there.

Q. They have an approved location.

So at what point do you believe you'll see interference? I mean, you really have -- actually, let me rephrase the question. We have -- based on these calculations, we really have no idea how Solaris will affect your operations?

A. Not to this point.

Q. No. I mean, you need to have those values -- if you're going to -- you're going to have to submit an exhibit that shows the Solaris impact.

A. Okay. Can that be submitted when we get into the permit review process, if we get to that point, or is that something that needs to be --

Q. No. It has to -- this is at hearing. You're going to have to send it to the OCD and send it to the affected parties.

A. Okay.

MR. NANCE: We can do that as a late-filed exhibit?

EXAMINER McMILLAN: That's fine, as long as all the affected parties get correct notice.

MR. NANCE: Okay.

EXAMINER BRANCARD: Mr. Examiner, I just have one question.

CROSS-EXAMINATION

BY EXAMINER BRANCARD:

Q. I often get confused in these hearings when you start using fancy words. And so I thought you used the word "sidetrack," and I thought you said that because you're sidetracking the well, you can sidetrack it any direction.

A. Well, it depends on how we orient the whipstock. When we cut the window, we can orient that whipstock in any direction 360 degrees.

Q. So we don't really know where your bottom hole

is going to be?

A. Well, when we have the well planned, we will know where it's going to be. In this case, based on what we've seen from Solaris, we're going to orient that direction away from the Solaris well. We're talking maybe a 200-foot displacement.

Q. Okay. 200 foot from?

A. From vertical.

It's considered a classic S curve. You exit the wellbore, you build some angle, and then you let it drop back to vertical. The point being is that you want it to get away from the old wellbore so it doesn't collide. But we don't have a target at some -- at some distance far away from the wellbore. It's just enough to get us away from the old to the original wellbore.

EXAMINER GOETZE: May I?

RECROSS EXAMINATION

BY EXAMINER GOETZE:

Q. Mr. Brancard does raise a question with regard to notice, and that's why I forgot. Surface location is what your notice was done on. Whenever you end up with a bottom-hole location, you're going to have to have a verification that your notice at surface covers the same affected parties. We do this with all. Whether it's a

horizontal injector or a directional, that circle, if the information within that circle is the same for bottom hole, then you've satisfied. If not, you-all will have to proceed with notice, and you'll be back here. So it may behoove you to think what direction you want to go in. And typically we do get a filing of the C-102, and that gives us the ability to say that your notification has been done properly.

That's it for me.

EXAMINER McMILLAN: We've got to have a five-minute conversation in the hallway.

MR. DOMENICI: Can I follow up on your questions? Would that be okay?

RECROSS EXAMINATION

BY MR. DOMENICI:

Q. Which direction is the Berry 1 well?

A. From the Key well, I believe it's to the northeast.

Q. And based on your testimony, it sounds like you haven't reviewed that approved permit; is that correct?

A. I have not.

Q. Thank you.

EXAMINER McMILLAN: We're going to take a five-minute break.

(Recess, 9:06 a.m. to 9:14 a.m.)

EXAMINER McMILLAN: Call this hearing back to order.

Proceed.

MR. NANCE: Is that all the questions you have of this witness?

EXAMINER McMILLAN: Yeah.

MR. NANCE: Okay. Thank you.

REDIRECT EXAMINATION

BY MR. NANCE:

Q. Before you leave, is there anything you'd like to offer in response to questions?

A. No. I think we've pretty well covered it.

If it's possible to visit afterwards to talk about the calculations that you discussed.

EXAMINER McMILLAN: You've got to do it with all the affected parties. We told you what we want.

THE WITNESS: All right.

MR. NANCE: Nothing further from this witness. Thank you.

EXAMINER McMILLAN: Thank you.

MR. NANCE: My next witness is Mike Eide.

MICHAEL G. EIDE,

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

DIRECT EXAMINATION

BY MR. NANCE:

Q. Mr. Eide, I've handed you documents I've marked as Exhibit 8 through 13.

MR. NANCE: And, Examiners, Exhibit Number 9, just so you know, is in a packet. It's a foldout cross section of logs. We'll get to that.

Q. (BY MR. NANCE) Mr. Eide, please state your name for the record.

A. My name is Michael Eide.

Q. What is your background and experience?

A. I have 26 years of experience in the injection well business. I have a bachelor's degree and a master's degree in geology. I've been working, like I said, 26 years in the injection well business. I've worked in, you know, permitting, siting studies, installation for the EPA, TCEQ. I've worked in Texas, Louisiana, Oklahoma, New Mexico, California, Ohio, Illinois, Colorado. So it's kind of what I've been doing for the last 26 years.

Q. Okay. And is Exhibit 8 your resume?

A. It is.

Q. Is that a true and accurate representation of your work experience and qualifications?

A. It is.

MR. NANCE: Examiners, I move to tender Mr. Eide as a geology expert.

MR. DOMENICI: No objection.

MS. BISONG: No objection.

EXAMINER McMILLAN: So qualified.

Q. (BY MR. NANCE) Mr. Eide, what were you asked to do for Key in this matter?

A. I was asked by Key to provide the geological section for the C -- the application. I don't have that in front of me.

Q. Does that require a study of logs and regional resources and anything you can get your hands on, correct, to determine the geology?

A. Correct, and answer the questions in the OCD application.

Q. Does that also include investigating hydrology?

A. Hydrology is a component of it.

Q. Okay. And let's move on to your exhibits. First let me ask: There is a geology study in the application that Mr. Johnson testified in terms of an exhibit. Are those geologic studies your work?

A. Yes.

Q. So you adopt that work as true and correct to the best of your knowledge?

A. I do.

Q. Okay. Let's move on to Exhibit 9. Would you please tell the examiners the importance of Exhibit 9?

A. Well, Exhibit 9 is a cross section, and it's constructed using four wells. The A, B and D wells are offset wells, and the star represents the location of the Key Energy well. Obviously, we have a -- we have a log for the Key Energy well, but it doesn't extend down to the Devonian. There's not a lot of data out in this area that extends down to the Siluro-Devonian, so we had to kind of extend our cross section out a pretty good. Distance. And if you look on the map on the bottom, you can see the distances between the wells, and that's indicated between the logs that's shown, too. So they're, you know, four, five miles apart, in some cases, two or three. But I think it gives you a good idea that the -- we believe the injection strata is there at our site based on correlation. We believe the confining strata is there at our site based on correlation, and we believe it's laterally continuous and present. And I've also shown on the bottom with the use of dash lines where we believe, based on regional information and regional studies, where the basement would be and where the underlying confining strata of the Upper Ordovician would be. It's kind of a cumbersome cross section.

And at the top, you can note it's got the USDW indicated. We believe that's going to be associated with the top of the Permian evaporites. All the production in this area historically has associated with the Delaware Mountain Group, but pending production is probably going to be associated with the Bone Spring Formation and the Wolfcamp. And there's been some messing around in the Pennsylvanian, but I don't believe it's been real productive in this area. So this is kind of a geology picture in a nutshell.

Q. Okay. Let's talk about the USDW for a second. Could you further describe that on the cross section?

A. Okay. Well, the base of the USDW is obviously the base of the usable water -- usable quality water having less than 10,000 milligrams per liter. There are some water wells out there in the area, but they're usually associated with very shallow deposits of the Pecos Valley alluvium and then some of the Upper Permian red beds. Once you get to top of the salt, the USDW is pretty much done. It's going to be very high salinity water.

Q. Okay. Is it your opinion that the USDW is at shallower depths or above the Salado Formation?

A. Yes.

Q. Is the Capitan zone present here?

A. No.

Q. Let's work our way down to the injection interval. That's below the actively producing oil and gas zones; is that correct?

A. Based on the research done from the OCD information.

Q. What is your description of the strata separating the oil and gas productive zones from the top of the injection interval?

A. The Woodford Shale is a shale formation -- a dark-colored shale formation. It's probably a couple hundred feet thick. It's laterally continuous and would make a good confining zone. It does not appear to be affected by any structure in this area as in a fault.

Q. Do you believe that confining zone also protects the USDW at this location?

A. Yes, along with a thick section of overlying strata, including the Permian evaporites.

Q. Okay. And then let's discuss, please, the confining layers below the base of the injection interval.

A. Those are Upper Ordovician strata. You've got the Montoya Formation and the Simpson Group. The Montoya would be a carbonate zone, but I've seen references to it being a very low-porosity zone. The

Simpson Group is carbonates and clastics, so -- it's sand and shale as well. It contains a high percentage, I believe, of fine-grain clastics. So they should provide good confinement below the injection zone.

Q. Okay. Do you believe this confining layer protects the Ellenburger Formation?

A. I believe it does provide a good layer of protection.

Q. Okay. And just to make sure -- you may have already testified to this -- do you believe there is any oil and gas production in the Devonian Formation at this location or the immediate vicinity?

A. No, I do not.

Q. Okay. Let's move forward with Exhibit 10, which is described as "Water Wells In Site Vicinity" map. What's the importance of this exhibit?

A. Well, research was done, you know, in accordance with the application into locating water wells in the site vicinity. So we've got a one-mile radius. There are no water wells within a half-mile, and the map shows that there are a couple of documented wells out there that are noted as water wells. They're very shallow, usually associated with the Pecos Valley alluvium, less than 300 feet deep.

If you look on the northwest quadrant of

that one-mile radius, there are a couple of wells identified there. And according to that database are, quote, "water wells," but I believe what they were were oil and gas wells that were samples -- water samples. So they show up in a database. I don't believe they were actually water wells. You can see one of them was 2,700 feet deep. They're both 2,700 feet deep. So they were probably Delaware Mountain Group wells that they just pulled a sample and then included them in their database. So they're not producing water wells.

Q. Those two wells you just mentioned are plugged and abandoned, correct?

A. Yes.

Q. Anything else on Exhibit 10?

A. No.

Q. Okay. Let's moved forward to Exhibit 11. What is the relevance of this exhibit?

A. This is a depth-to-basement map. I believe as part of our initial application, there were some follow-up questions that the OCD had. One of them was where's the depth to basement? What is the separation between the Ellenburger? So this map was prepared for that second round of questions that OCD had before the protests were made. This a regional map. The source of the information is shown on the bottom of it. And based

on the information presented, it looks like the depth to basement is approximately 17,000 feet.

Q. Okay. How is that important in terms of your injection interval?

A. Well, I'm not specifically sure why they wanted to know what the depth to basement was, but I assume it had something to do with this rush to information about induced seismicity.

Q. Okay.

A. So we've documented it for them, and this does show basement faulting as well.

Q. Okay. So let's move forward to Exhibit 12. Does this discuss seismicity?

A. Yes. That was also part of that second round of information requested. And this is a search of the USGS earthquake catalog dating back to, I believe, 1973. And two events are documented. We've got a radius on there, which would be about 100 square miles, which is typically what we do in Texas these days, 100-square-mile radius. And we've got two events in the whole record, and we've got a good range of -- a good period in between them. The first event was 1974, and the second one was 2012. And they were both -- looked to be qualified as pretty low-magnitude events.

Q. So is it your opinion today that there is no

historic seismicity within the radius shown on your Exhibit 12?

A. Correct.

Q. Is there any faulting in this same area?

A. Based on the information we looked at, there is no structure -- significant structures documented in this area.

Q. Based on your research, do you have any concerns with induced seismicity at this location?

A. I do not.

Q. Finally, Exhibit 13 is what?

A. That's a geologic affirmation statement we are looking to submit now.

Q. Okay. A few questions in conclusion. Do you believe the proposed disposal zone is suitable for the injection operation of Key?

A. I do.

Q. Do you believe disposal into this Devonian Formation is protective of the USDW and the oil and gas formation?

A. I do.

Q. Do you believe fluids will be confined to the disposal zone?

A. I do.

Q. Do you believe the disposal well application

proposed by Key is in the interest of conservation and the prevention of waste?

A. I do.

MR. NANCE: Examiners, I move for admission of Exhibits 8 through 13.

MR. DOMENICI: No objection.

MS. BISONG: No objection.

EXAMINER McMILLAN: Exhibits 8 through 13 may now be accepted as part of the record.

(Key Energy Services, LLC Exhibit Numbers 8 through 13 are offered and admitted into evidence.)

MR. NANCE: And I pass the witness.

CROSS-EXAMINATION

BY MR. DOMENICI:

Q. Sir, can you get your geology report in front of you? It's part of Exhibit 1 from --

A. Yes. I don't have those previous exhibits.

Okay.

Q. So you made some porosity calculations in your geology report, correct?

A. Those aren't calculations. Those are taken from literature -- recent literature.

Q. And that's on -- that would be on the second page of your report?

A. Yes, sir.

Q. And from the literature, your report indicates porosity is expected to range from 3 to 15 percent?

A. That's correct.

Q. Is that your testimony today?

A. Yes.

Q. Did you review Exhibit 7 in front of you? It's in that --

MR. NANCE: It's the pressure --

Q. (BY MR. DOMENICI) Next page.

A. Okay.

Q. Did you review that?

A. I did.

Q. Did you participate in the creation of that?

A. I did.

Q. What did you do on this?

A. I provided the thickness information, which is taken from the cross section, based on correlation.

Q. Okay.

A. I had input on the porosity. And what we did is we took kind of a mid-number in that range.

Q. Okay.

A. And that pretty much covers my contribution.

Q. Okay. Now, did you run analysis with the maximum porosity of 15 percent?

A. I did not.

Q. Did you -- do you do pressure analysis as part of your long career?

A. I do not. Usually that's an engineer that provides that information. I provide geological information.

Q. Did you look at Solaris' Berry 1 approved well permit?

A. I did not.

Q. Do you know where that well is -- that approved well location is?

A. Yes.

Q. Do you know the maximum distance from that well that the sidetrack arrangement of the drilling can create?

A. Based on the testimony earlier, it looks like it'll probably be about another couple hundred feet beyond what is shown on this calculation. This calculation was from the OCD website measurement tool of the surface locations of both.

Q. Do you know one way or another if it could be greater than 200 feet if that were the choice of -- of Key or if that was a mandate of OCD?

A. Theoretically, I suppose it could be greater than that.

Q. How much greater?

A. That, I can't tell you.

Q. And you would agree that the pressure from Solaris' well would affect the activities in the Key well?

A. Potentially. Until you have actual data from reservoir testing, I would hesitate to say that.

Q. So without data, you don't know how much the two wells will affect each other, correct?

A. Correct.

Q. And do you agree there is no calculation that's been done to see the impact of the two wells on each other?

A. Not at this point, to my knowledge.

Q. That's all I have.

MS. BISONG: I have no questions.

EXAMINER GOETZE: Thank you, Mr. Nance, for providing the affirmation statement.

MR. NANCE: Yes, sir.

EXAMINER GOETZE: That satisfies that.

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. The only other question I have for you is have you proposed any type of logging program or sampling program to Key with regards to the reservoir once the

well has been drilled?

A. I have not done that personally, but I think that is in the works. I think the engineering and the well-drilling program will certainly address that.

Q. So there is something being considered at this time --

A. Certainly.

Q. -- that's not been finalized?

EXAMINER GOETZE: I have no further questions for this witness.

CROSS-EXAMINATION

BY EXAMINER McMILLAN:

Q. Okay. How thick do you think the Montoya will be?

A. I think it'll probably be about 325 feet thick based on regional information submitted at the second round of OCD questions.

Q. And how about the Simpson?

A. Again, about 325 feet thick.

Q. And you're going to provide a mud log?

A. I believe that's probably part of the --

Q. Yeah. It will be.

A. Yeah.

EXAMINER McMILLAN: Go ahead.

EXAMINER MURPHY: I don't have any

questions.

EXAMINER BRANCARD: No questions.

EXAMINER McMILLAN: I don't believe I have any more questions.

EXAMINER GOETZE: We're done with this witness. Bring up the next one.

MR. NANCE: All right. Our next witness is Rene Aqueron. The good news is we only have one exhibit for this witness. He's our last witness.

RENE AQUERON,

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

DIRECT EXAMINATION

BY MR. NANCE:

Q. Could you state your full name for the record?

A. My name is Rene Aqueron.

Q. I mispronounced it. I'm sorry.

What is your position with Key Energy?

A. I am a project manager with our fluid management services division.

Q. And what are your responsibilities?

A. So I mainly focus my efforts on saltwater disposal sites, you know, anything saltwater disposal related from surface to injection.

Q. Okay. And Key Energy is a publicly traded

corporation, correct?

A. Yes, sir.

Q. Okay. With operations, in terms of disposal, in Texas and southeast New Mexico, correct?

A. Yes, sir.

Q. Okay. And so obviously Key operates wells existing and active disposal wells that are regulated by the OCD, correct?

A. We do.

Q. Okay. Why did Key Energy select the location for this proposed disposal well that we're discussing today?

A. So just that, location. It's off McDonald Road, the main road. It's well accessible. We have a lot of customers that we currently serve that have active permits in that area, and we believe in, you know, serving our customers and being there for them. So that was -- that was the reason behind that.

Q. Why is roadway access important?

A. So the site would be -- we plan on doing pipeline, a lot of work, but trucking water to the facility might also be an option. So that's why, you know, roadway accessibility is important.

Q. What is the significance of this exhibit?

A. So this exhibit shows active permits in this

9-by-15 -- or by-16 -- I'm sorry -- 9-by-16 area. So we have 325 active permits at the time that we submitted our -- our application.

Q. Are those drilling permits or -- yeah. Are they primarily for horizontal oil and gas wells?

A. I believe so. A lot of them do look horizontal.

Q. And the graph up at the top of your Exhibit 14 represents some, if not all, of Key Energy's customers?

A. A lot of our customers from OXY, Marathon, Matador, Devon, Chevron.

Q. Okay. Do you believe that the oil and gas industry has a need for Key Energy's disposal well at that specific location?

A. Absolutely.

Q. Why?

A. Like I mentioned before, to serve our customers. You know, we believe that not all the wells in the area will be able to meet the demand of saltwater disposal in that general region based off a lot of the active permits that are in that area. So based off of that alone, I believe we're needed.

Q. Do you see any slow-down in oil and gas activity in this area?

A. I do not.

Q. Okay. What are the benefits of piping water from your customers' well pads to your disposal well?

A. First and foremost, it's to eliminate trucking, you know, and ease on the roads, you know, environmental impact, things of that nature.

Q. I think you may have already testified. Let me ask again, though. Is it your testimony today that the existing and active disposal wells in this area are not sufficient, in your opinion, to accommodate all the water being produced on a daily basis for disposal?

A. In my opinion, yes, sir.

Q. Is the disposal well at this location vital to Key Energy's operations?

A. It is.

Q. Do you believe this disposal well at this location is in the interest of conservation and the prevention of waste?

A. Absolutely.

Q. Is there anything else you'd like to add to your testimony today?

A. No. I think we pretty much covered it.

MR. NANCE: Okay. Examiners, I'd move the admission of Exhibit 14.

MR. DOMENICI: No objection.

MS. BISONG: No objection.

EXAMINER McMILLAN: Exhibit 14 may now be accepted as part of the record.

(Key Energy Services, LLC Exhibit Number 14 is offered and admitted into evidence.)

MR. NANCE: I pass the witness.

CROSS-EXAMINATION

BY MR. DOMENICI:

Q. Mr. -- is it Aqueron?

A. Yes, sir.

Q. You were involved in selecting the location of the well that we're talking about today?

A. Uh-huh.

Q. Correct?

A. Yes, sir.

Q. When did you become aware that Solaris had a permitted disposal well within a half mile of this location?

A. It was after we submitted our permit. I believe it was sometime in June.

Q. Now, do you typically locate within a half mile of an active disposal well?

A. Our other wells?

Q. Yes.

A. No, sir.

Q. Why not?

A. I mean, no reason behind it. There just tends to be no -- no active wells around ours within a half a mile.

Q. Do you -- are you concerned when someone proposes a well within -- a disposal well within a half mile of one of your existing wells?

A. I -- I would.

Q. And if I understand it, the only analysis that Key has done is presented on the last page -- or on Exhibit 7 that we've talked about?

A. Correct.

Q. And I didn't ask. Do you know when that was done?

A. No, sir, I don't.

Q. Within the last 20 days?

A. Yes.

Q. And just to be clear, there's been different testimony. I think the documents may be stated differently. This permit is for 10,000 barrels per day average and a maximum of 15,000?

A. Correct.

Q. And you haven't, as the -- let me make sure I have your title. As the project manager for fluid management services for Key Energy, you haven't -- you or anyone under you haven't evaluated the effect

Solaris' approved injection will have on this well, correct?

A. Not currently.

Q. That's all I have.

EXAMINER GOETZE: I have no questions for this witness.

CROSS-EXAMINATION

BY EXAMINER McMILLAN:

Q. The only thing I would say is I'm looking at your map legend and you included a saltwater disposal well company in there. So keep that in mind.

A. Yes, sir.

EXAMINER McMILLAN: Go ahead. Do you have anything?

EXAMINER MURPHY: I don't have any questions.

EXAMINER BRANCARD: (Indicating.)

EXAMINER McMILLAN: Okay. Is that the final witness?

MR. NANCE: Yes, sir.

MR. DOMENICI: No witnesses.

MS. BISONG: No witnesses.

EXAMINER GOETZE: No witnesses. No witnesses.

Okay. Continued?

EXAMINER McMILLAN: Yeah. This case clearly has to be continued.

Now, let's get some -- first thing -- this is pretty simple. When we go back to Exhibit 1, let's get clarification on the wellbore diagram. This is the easy thing. Now, you said 10,8, but that wasn't very clear based on looking at the well files. So you need to take a look at that.

The next thing, you're going to have to do calculations that shows the effect of the Solaris well, and you're going -- and you're going to have to submit it to the affected parties. How quickly can you perform that?

MR. JOHNSON: I would say just in a matter of days I could have that done.

EXAMINER McMILLAN: Okay. So do you think -- do you believe -- could you have it to the affected parties by September the 7th?

Would that work?

MR. DOMENICI: Yes. That's fine.

MS. BISONG: Yes.

EXAMINER McMILLAN: Okay. And then this case is obviously going to have to be continued to the September hearing.

EXAMINER GOETZE: September 19th?

EXAMINER McMILLAN: Yeah, to the September 19th hearing.

And then what's going to be expected is you're going to have to come back and justify your work because our -- the concern I'm getting out of this is what's going to be the effect of Solaris, because -- does the possibility exist because you're going to get pressure interface, and what's going to happen to the fluid migrations.

The next thing I'm getting is you stated that you guys are probably going to whipstock away from the Solaris well, right?

MR. NANCE: That's correct.

EXAMINER McMILLAN: You didn't say we're definitively going to do that because you're not going to know until you clean out the wellbore, correct?

MR. JOHNSON: Correct.

EXAMINER McMILLAN: Okay. And then the question -- I want to make sure. If you go 200 feet, how is that going to affect notice? You will prepare a statement for a 200-foot or a 250-foot circle around the well stating that there's -- notice has not been changed.

Anything else?

EXAMINER GOETZE: Well, if it is such that

you are talking about doing something downhole with regard to logs and sampling, a proposed -- knowing that you're going to be doing a mud log because we require that, just to lay aside the fact this is a federal well, we would like you to go ahead and give us what you would indicate what you will be taking as a geophysical log or a reservoir sampling so that we have a handle on what real characteristics are there. So with that in mind, put something together simplistic, as well as realistic as to what you would use to keep this well alive through its operation. Okay?

MR. NANCE: For presentation at the next hearing?

EXAMINER GOETZE: With the submittal of an exhibit so the other parties can see.

MR. NANCE: Did you get that, Bill?

MR. JOHNSON: (Indicating.)

MR. NANCE: Can we go back to Number 1? You referenced Exhibit 1 and the wellbore configuration. I didn't really catch what you're looking for.

EXAMINER McMILLAN: Okay. I want you -- I want you guys -- what I want is let's make sure that you actually look at the well file, because when I looked at the well file, I was getting -- I got the plug at 10,6, and you're saying you're going to fish it

through 10,8. I want verification that you actually looked at the well file. And as Phil noted, you missed quite a bit because you didn't note plugging operations and the perforations there. So you will look at the well file.

EXAMINER GOETZE: Let's get us a wellbore diagram --

EXAMINER McMILLAN: Yeah, a wellbore diagram.

EXAMINER GOETZE: -- a real representation. That shallow perf was put in at 600 feet or so, so we're claiming mechanical integrity on this shallow well inside and how that impacts surface casing. It's nice to see it, nice to know in your evaluation because this may lead to having more problems at the surface. Because if you run MIT on this thing and it doesn't go anywhere or you do a pressure test, all of a sudden this changes our dynamics as to what the permit is, and it also changes what we request out of you as far as design. So knowing where perfs are and the fact that this has a long history of use and re-perf and squeezing and retrieving uphole to develop other zones shallower gives this well, shall I say, a notorious history.

So we admire the effort of Key to re-enter it, but at the same time, we look at these Devonian

wells as being something we want to have for a long time, and we don't want to monitor them. We already have too many wells drilled fresh that already have monitoring issues or have failed MITs outright. So the Division is concerned re-entry adds more of a risk that we would like to characterize and confine at the front end of a project, not five years down the road when I've to send somebody out every day to take a look whether that well is leaking. So that's our take.

EXAMINER McMILLAN: Okay. Thank you.

MR. NANCE: All right. Thank you.

EXAMINER McMILLAN: So Case Number 20583 shall be continued to September 19th with the additional requirements to the affected parties.

MR. NANCE: Yes, sir.

(Case Number 20583 concludes, 9:48 a.m.)

EXAMINER McMILLAN: Let's take a ten-minute break.

(Recess, 9:49 a.m. to 10:02 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 13th day of September 2019.

MARY C. HANKINS, CCR, RPR
Certified Court Reporter
New Mexico CCR No. 20
Date of CCR Expiration: 12/31/2019
Paul Baca Professional Court Reporters