

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, CASE NO. 20583
LLC FOR APPROVAL OF A SALTWATER DISPOSAL
WELL, EDDY COUNTY, NEW MEXICO.

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

September 19, 2019

Santa Fe, New Mexico

BEFORE: PHILLIP GOETZE, CHIEF EXAMINER
KATHLEEN MURPHY, TECHNICAL EXAMINER
DANA Z. DAVID, LEGAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Phillip Goetze, Chief Examiner; Kathleen Murphy, Technical Examiner; and Dana Z. David, Legal Examiner, on Thursday, September 19, 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

16	Key Energy Services, LLC Exhibit	
17	Numbers 15 through 18	21, 23

1 (8:29 a.m.)

2 EXAMINER GOETZE: Next we will go to Key
3 Energy. This will be Case Number 20583, application of
4 Key Energy Services, LLC for approval of a saltwater
5 disposal well, Eddy County, New Mexico.

6 Call for appearances.

7 MR. NANCE: Good morning, Examiners. My
8 name is Clayton Nance. I'm the attorney for Key Energy.

9 MS. BENNETT: Good morning. Deana Bennett
10 on behalf of NGL Water Solutions Permian.

11 MR. DOMENICI: Good morning. Pete Domenici
12 on behalf of Solaris.

13 EXAMINER GOETZE: Take a seat or sit in the
14 crowd.

15 So at this point, we had already had a
16 hearing --

17 MR. NANCE: Yes, sir.

18 EXAMINER GOETZE: -- on this, and there
19 were certain items requested to be brought forward.

20 Do you have any witnesses?

21 MR. NANCE: I do. I have one witness, our
22 engineer, Mike Johnson.

23 And although we submitted these exhibits
24 ahead of time to the OCD and parties, I have extra
25 copies to hand out.

1 EXAMINER GOETZE: That would be fine.

2 Would you witness please stand, recognize
3 yourself and be sworn in by the court reporter, please?

4 (Mr. Johnson sworn.)

5 EXAMINER GOETZE: Very good. Proceed.

6 MR. NANCE: Examiners, I've called to the
7 witness stand Mike Johnson.

8 And I've handed out what we've marked as
9 Key Energy Exhibits 15 through 18, and these exhibits
10 were generated and prepared in response to the
11 examiners' request at the August 22nd hearing. So at
12 this time I'd like to lay the foundation and discuss
13 these exhibits with my witness, Mr. Johnson.

14 EXAMINER GOETZE: Very good.

15 WILLIAM M. JOHNSON,
16 after having been first duly sworn under oath, was
17 questioned and testified as follows:

18 DIRECT EXAMINATION

19 BY MR. NANCE:

20 Q. Mr. Johnson, go ahead and state your full name
21 for the record.

22 A. My name is William Johnson.

23 Q. Okay. And were you here at day one of the
24 hearing back in August?

25 A. I was.

1 Q. And did you hear the examiners' request for
2 additional exhibits and information in this matter?

3 A. I did.

4 Q. I've handed you what's marked as Exhibits 15
5 through 18. Do you recognize those exhibits?

6 A. Yes, I do.

7 Q. Okay. Did you prepare these exhibits?

8 A. Yes.

9 Q. And you've been qualified as an expert engineer
10 in this matter, correct?

11 A. Yes.

12 Q. Okay. Let's walk through these exhibits
13 starting with --

14 EXAMINER GOETZE: Let's go ahead and
15 requalify him as a witness.

16 MR. NANCE: Okay.

17 Q. (BY MR. NANCE) Mr. Johnson, your resume has
18 been admitted into the record; is that correct?

19 A. That's correct.

20 Q. And that should be Exhibit Number 1, I believe,
21 correct?

22 A. From the earlier hearing, yes.

23 Q. Okay. Does that resume describe your
24 professional experience and background, education in
25 related matters?

1 A. It does. Yes, it does.

2 Q. Do you have experience in preparing
3 applications and studying engineering and a subset of
4 geology for disposal well permit applications in New
5 Mexico?

6 A. Yes.

7 Q. How about other states?

8 A. Yes.

9 Q. What states are those?

10 A. Texas, Oklahoma, North Dakota, Louisiana. I
11 think that's it.

12 Q. Okay. Do you have experience as an engineer,
13 expert, at the federal level before the EPA?

14 A. I do.

15 Q. Okay.

16 MR. NANCE: Examiners, at this time I'd
17 like to tender Mr. Johnson as an expert in engineering.

18 MR. DOMENICI: No objection.

19 MS. BENNETT: No objection.

20 EXAMINER GOETZE: So qualified.

21 Proceed.

22 MR. NANCE: Thank you.

23 Q. (BY MR. NANCE) Let's start with your Exhibit
24 15. What is this document?

25 A. This document I prepared after the earlier

1 hearing that we had. The examiners had requested that
2 we go back and review some of the information in the
3 well file. So what this did is it brought the wellbore
4 configuration up to the current status that we
5 understand as -- which is plugged and abandoned. And so
6 it shows the different -- the different plugs, the
7 different perforation depths and some detail on
8 cementing and some commentary on tops of cement and --
9 and other hardware.

10 **Q. Okay. Does page 1 of Exhibit 15 reflect the**
11 **current configuration of the Queen Lake Federal 19 No. 1**
12 **as documented in the OCD records?**

13 A. I think that it does, yes.

14 **Q. And what are the changes or additions that you**
15 **have in this document compared to what was submitted on**
16 **day one?**

17 A. So there were some -- to be able to bring the
18 well to the current plugged-and-abandoned status, there
19 were some additional plugs in the well, especially
20 towards the upper section in the well and then the top
21 plug to flesh out the plugged-and-abandoned status.

22 **Q. Okay. And what is page 2 of Exhibit 15?**

23 A. Page 2 is we went back and looked at the
24 proposed wellbore diagram for the eventual completion of
25 the well. And in light of some of the comments that we

1 heard from hearing examiners last month, we made some
2 changes to that to reflect -- to answer some of those
3 concerns that they had.

4 Q. What are those changes?

5 A. Tubing -- tubing sizes and liner depths.

6 Q. Okay. And at the top, it says "Proposed Full
7 Length Liner." Is that what you're talking about in
8 terms of the liner?

9 A. That's correct. And that configuration has --
10 the sidetrack borehole would be completed with the liner
11 that extends from the total depth of the sidetrack back
12 to the surface.

13 Q. I believe you testified at day one that the
14 well would be sidetracked in the Wolfcamp Formation; is
15 that correct?

16 A. Yes.

17 Q. Okay. Is the Wolfcamp a good candidate for
18 sidetracking the well?

19 A. Yes, it is.

20 Q. Why is that?

21 A. Well, it's a competent carbonate rock that
22 would offer good foundation for a sidetrack.

23 Q. Okay. Is this well -- as proposed by Key, will
24 it be cased and cemented throughout the entire Wolfcamp
25 interval?

1 A. Yes, it will.

2 **Q. Why is that important?**

3 A. It will isolate the disposal zone from any
4 overlying potential production or other disposal wells
5 that may be encountered in the area.

6 **Q. Okay. Is there anything else that you'd like**
7 **to add in terms of Exhibit 15?**

8 A. I think that's about it.

9 **Q. Okay. Let's move forward with Exhibit 16,**
10 **which is three pages, three charts. What is this**
11 **document?**

12 A. So what I had done in the -- for the original
13 hearing is I had prepared some calculations that showed
14 what the impact -- potential impact of the Key Energy
15 Services' injection well would have at a nearby
16 permitted saltwater disposal facility. And so I did
17 those calculations and showed what that impact would be.
18 And then I was asked to show what the net impact from
19 both Key Energy Services and the permitted Solaris Berry
20 Saltwater Disposal well would be. So I went back and
21 did that calculation.

22 **Q. What parameters did you use for your**
23 **calculations?**

24 A. I used the same parameters in these
25 calculations that I used in the original ones for the

1 pressure buildup model, and I believe that was --
2 porosity was 9 percent. Thickness was 1,150 feet, and
3 permeability was 75 millidarcies.

4 Q. In your exhibits submitted to the record in day
5 one of the hearing, did any of your exhibits include the
6 formula used for your pressure point calculations?

7 A. Yes.

8 Q. Did you use that same formula to determine what
9 you have here in Exhibit 16?

10 A. I did.

11 Q. Okay. Tell us about your findings in Exhibit
12 16.

13 A. So what I did is I assumed that both wells
14 would be started simultaneously on the same day, and
15 they would inject at their maximum permitted
16 injection -- proposed permitted injection pressure from
17 zero to ten years. And so I looked at what that
18 pressure -- that net pressure increase would be for both
19 of those wells injecting at their maximum rates for
20 years one, two, five and ten.

21 Q. Do you believe those assumptions that you used
22 are conservative?

23 A. I think they're reasonably conservative. Yes.

24 Q. Where is that?

25 A. Well, given the information we have -- and some

1 of it is based on limited review and some of it is based
2 on log data -- in conjunction with the discussions that
3 we had with our geologist, I believe those data are
4 representative and conservative.

5 **Q. Do you expect both of these saltwater disposal**
6 **wells to operate continuously and uninterrupted at**
7 **maximum volumes for ten years?**

8 A. I cannot imagine a situation where they would
9 be just due to routine down times, power outages,
10 maintenance, workovers, commercial traffic. I just --
11 I've never seen an operation that was able to
12 continuously operate at its permitted maximum rate for
13 an indefinite period of time.

14 **Q. If one or both of these disposal wells operates**
15 **at a lower permitted maximum volume in terms of**
16 **disposal, does that in turn lower your findings in**
17 **Exhibit 16?**

18 A. Yes. The net pressure effect would be lower.

19 **Q. Okay. All right. Move forward, please, with**
20 **your discussion of Exhibit 16.**

21 A. So in terms of the methodology?

22 **Q. Yes, sir.**

23 A. So I used -- as I did with the last -- for the
24 last hearing, I used the -- a Cooper-Jacob approximation
25 to the Theis equation. The Theis equation is an

1 analytical solution to the radial diffusivity equation
2 for pressure buildup in a porous media. And it's
3 industry standard, and I incorporated that model, used
4 that analytical result, used the input -- the data input
5 that we got from the geology review to determine what
6 the pressure buildup would be over time.

7 **Q. And your results are represented in Exhibit 16,**
8 **correct?**

9 A. Yes.

10 **Q. What are your thoughts on the pressure buildup**
11 **in Exhibit 16 in relation to any type of impact of on**
12 **the key disposal well for the Solaris disposal well?**

13 A. Well, given what the pressure buildups are
14 going to be even after ten years of injection at the
15 maximum rates, I don't think there is going to be an
16 issue in terms of injection pressure at the site.

17 **Q. Okay. Are you aware of the maximum permitted**
18 **surface-injection pressure that Solaris is allowed to**
19 **use for the OCD permit?**

20 A. I think it's 2,860 psi.

21 **Q. Okay. And are you aware that Solaris, in its**
22 **permit, has a pre-operational condition that it must**
23 **measure the bottom-hole pressures?**

24 A. Yes, I am.

25 **Q. Okay. Do you expect Key Energy to also have a**

1 **permit condition that states bottom-hole pressure must**
2 **be recorded or available to the OCD?**

3 A. Yes. I expect that'll be the case.

4 **Q. Why is the bottom-hole pressure recording**
5 **important prior to commencement of disposal operations?**

6 A. Well, from an operational point of view, it
7 gives you an indication of how much room you have
8 between -- with the static condition of the reservoir is
9 and then moving forward through injection operations.
10 So, in general, the lower the static bottom-hole
11 pressure, the more room you have for injection capacity.

12 What I have here on Exhibit 16 is the
13 pressure increase over static. We don't know what the
14 static bottom-hole pressure is now, but this would be
15 the expected pressure increase regardless of what that
16 static pressure is. So this would be the change in
17 pressure.

18 **Q. Do you believe the bottom-hole pressure at this**
19 **location in the Devonian Formation is expected to be**
20 **high or something unusual?**

21 A. I don't expect it to be high relative to other
22 Devonian wells because there are no other injection
23 wells in the area at this point.

24 **Q. Okay. In a situation where Solaris operates at**
25 **less than its permitted maximum surface-injection**

1 pressure, is there any reason to believe that Solaris
2 would not be able to dispose of its maximum permitted
3 30,000 barrels per day?

4 A. No.

5 Q. And just so we understand, if the bottom-hole
6 pressure plus increase in pressure, shown on your chart,
7 is less than maximum permitted surface-injection
8 pressure, both facilities should be able to operate at
9 their maximum permitted volumes; is that correct?

10 A. That's correct.

11 Q. Do you believe the increase pressures
12 represented in Exhibit 16 will have an adverse impact on
13 Solaris' disposal well operations?

14 A. No, I don't.

15 Q. Is the Solaris saltwater disposal well as
16 proposed -- it's not drilled yet, but as proposed. If
17 completed as proposed, does it serve as a potential
18 conduit for the migration of fluids from the disposal
19 interval up to the base of usable quality water?

20 A. As long as it meets the cementing requirements
21 for isolation, I don't see how it would not meet that
22 requirement.

23 Q. Does the Key Energy saltwater disposal well
24 serve as a potential conduit for migration of fluids?

25 A. As long as it's cemented the way we propose, it

1 will not.

2 Q. Are there any concerns that you have with the
3 increased pressures represented in Exhibit 16 in terms
4 of groundwater protection?

5 A. Not in this case, no.

6 Q. Do you have any concerns with increased
7 pressures on the protection of hydrocarbon-bearing
8 formations?

9 A. No.

10 Q. Do you have any concerns with increased
11 pressures on the confinement of disposed-up fluids to
12 the injection zones?

13 A. No, I don't.

14 Q. Do you have any concerns whatsoever of
15 increased pressures on the integrity of Solaris'
16 wellbore if completed as proposed?

17 A. No.

18 Q. Do you have any concerns with these increased
19 pressures on induced seismicity?

20 A. No.

21 Q. Now, to your knowledge, is there anything in
22 the rule adopted by the OCD in terms of a minimum
23 spacing requirement for disposal wells?

24 A. No. There is not, to my knowledge.

25 Q. Is there any minimum well-spacing requirement

1 **in the EPA about the regulations?**

2 A. In Region 6, I don't think there are any.

3 **Q. Does Region 6 cover --**

4 A. Yes.

5 **Q. -- New Mexico and other states, correct?**

6 A. (Indicating.)

7 **Q. Are you aware of any minimum well-spacing**
8 **requirements that relate to Class 1 injection wells?**

9 A. No.

10 **Q. Are you aware of any minimum spacing**
11 **requirements at any state regulatory agency in terms of**
12 **disposal wells?**

13 A. No, I'm not.

14 **Q. Do you think a bright line half-mile spacing**
15 **requirement is appropriate?**

16 A. In general, I do, but I do not think it's
17 appropriate because I think it depends on the
18 site-specific conditions. But I think in this
19 site-specific condition, I think we're okay.

20 **Q. Okay. Why is that? Are you talking about the**
21 **geology?**

22 A. Yes. I'm talking about the geology.

23 **Q. So as geology changes throughout a region or**
24 **state, it creates an apples-to-oranges comparison,**
25 **correct?**

1 A. Yeah. As the conditions change, yeah, I think
2 it will. It will have to be evaluated separately based
3 on its own merit.

4 Q. That's why you look at localized conditions in
5 terms of permitting a disposal well even though it may
6 be one-half mile away from a permitted location?

7 A. Yes.

8 Q. Let's move on to Exhibit 17. What is this
9 exhibit?

10 A. So it's a notice affirmation that we filed
11 subsequent to the original filing for the permit
12 application that said that we expanded the area for
13 notice by 250 feet in every direction.

14 Q. Was Exhibit 17 generated in response to the
15 request at the examiners' day-one hearing?

16 A. Yes.

17 Q. Okay. Did you find any new parties to notify?

18 A. I found no new parties. No.

19 Q. And this is in relation to an expected new
20 bottom-hole location, correct, because you are
21 sidetracking the well?

22 A. That's right.

23 Q. Okay. And this is just further assurance in
24 Exhibit 17 that the BLM, as landowner, and other parties
25 have been notified by you for your permit application,

1 **correct?**

2 A. Yes.

3 **Q. Let's move forward with Exhibit 18. What is**
4 **this?**

5 A. So Exhibit 18 is a proposed logging and testing
6 program for the well during the re-entry phase to
7 evaluate whether we can proceed forward with the
8 saltwater disposal completion and then also in the
9 sidetrack drilling and completion phases to ensure that
10 we have wellbore integrity and that the geologic strata
11 that we expect are there so that we can design a
12 completion program to fit the existing geologic
13 conditions.

14 **Q. Did you prepare Exhibit 18 in response to the**
15 **hearing examiners' request at the day-one hearing?**

16 A. Yes.

17 **Q. Do you have any experience re-entering wells to**
18 **prepare [sic] for saltwater disposal?**

19 A. I do.

20 **Q. Have you been successful?**

21 A. Yes.

22 **Q. Do you have anything else to discuss with the**
23 **examiners in terms of the specific details in Exhibit**
24 **18, or is it pretty self-explanatory?**

25 A. I think it's self-explanatory. And I'm open to

1 additional discussions with the examiners if they have
2 some additional concerns about the proposed testing, but
3 I think it pretty well speaks for itself.

4 Q. Okay. Anything else on Exhibit 18?

5 A. No, sir.

6 Q. Okay. A few more questions.

7 Do you believe re-entering and converting
8 this well to saltwater disposal will be protective of
9 groundwater and hydrocarbon-bearing formations?

10 A. Yes.

11 Q. Do you believe Key Energy's disposal well will
12 confine fluids to the injection interval?

13 A. Yes.

14 Q. Do you believe that the Key Energy disposal
15 well or the accumulative disposal in this -- in this
16 area would have an adverse impact on Solaris or on the
17 Key Energy wellbores?

18 A. No.

19 Q. Is there anything else you'd like to offer to
20 the examiners at this time?

21 A. No. I think that's about it.

22 MR. NANCE: Okay. Examiners, I move for
23 admission of Exhibits 15 through 18 into the record.

24 EXAMINER GOETZE: Ms. Bennett?

25 MS. BENNETT: No objection.

1 EXAMINER GOETZE: Mr. Domenici?

2 MR. DOMENICI: I'd like to voir dire the
3 witness.

4 EXAMINER GOETZE: Which exhibit are you --

5 MR. DOMENICI: 15, 16, those two exhibits.

6 EXAMINER GOETZE: Well, let's start off
7 with Exhibit 15.

8 (Key Energy Services, LLC Exhibit Numbers
9 15 through 18 are offered into evidence.)

10 VOIR DIRE EXAMINATION

11 BY MR. DOMENICI:

12 Q. Is there anything on Exhibit 15 that was
13 unavailable to you prior to the last hearing?

14 A. I'm not sure -- I don't think there -- I don't
15 think there was. No.

16 Q. If I understood correctly, this is a summary of
17 a well file that's been available throughout Key
18 Energy's efforts to obtain this permit, correct?

19 A. I think so.

20 Q. And Key Energy or perhaps yourself chose not to
21 do this analysis for the last hearing, correct?

22 A. No, that's not correct. What we did is we
23 provided what we believed was the current wellbore
24 configuration based on that data set of records. And so
25 this additional data just wasn't included in that just

1 by oversight.

2 Q. I think you testified and so did the other Key
3 witness -- Key Energy witness that the well file had not
4 been examined for the last hearing, correct?

5 A. No, I don't think so. The Key well file?

6 Q. Yes.

7 A. No. It had been examined.

8 Q. And you chose not to provide that information?

9 A. Didn't choose not to. It just wasn't included.

10 Q. Okay. I'll turn to the second page of that
11 exhibit. What is the angle of the sidetrack?

12 A. The angle of the sidetrack is yet to be
13 determined, but my estimate would be 10 degrees or less.

14 Q. So how far would that put the bottom hole of
15 the disposal well from the existing wellbore?

16 A. So the proposed well plan will be that the well
17 will be control drilled by directional drilling
18 techniques and that we will keep the bottom of the well
19 within a 200-foot -- 250-foot radius of the well.

20 Q. And what direction will the sidetrack go in
21 relation to Solaris' well?

22 A. So it will go in the opposite direction, which
23 I believe will be southwest.

24 Q. Is that stated anywhere in these documents?

25 A. No.

1 MR. DOMENICI: That's all I have.

2 EXAMINER GOETZE: So at this point, I will
3 still go ahead and accept Exhibits 15, 16, 17 and 18
4 into record.

5 And I will note that Key Energy does note
6 the orientation of the well in their directional survey
7 and drilling control section, and so that question has
8 been answered.

9 (Key Energy Services, LLC Exhibit Numbers
10 15 through 18 are admitted into evidence.)

11 EXAMINER GOETZE: At this point we'll turn
12 the witness over to Mr. Domenici.

13 Any other questions?

14 MR. DOMENICI: Yes, just a couple.

15 CROSS-EXAMINATION

16 BY MR. DOMENICI:

17 Q. So I think you just testified that you had
18 re-entered plugged wells to transform them to disposal
19 wells?

20 A. That's correct.

21 Q. In how many of those cases have you used the
22 sidetrack method?

23 A. Probably three or four times.

24 Q. Out of how many --

25 A. Out of dozens.

1 Q. Any of those in New Mexico?

2 A. No.

3 Q. Are you aware of any other sidetrack wells in
4 New Mexico?

5 A. No, I'm not.

6 Q. Now, you talked a little bit about the half
7 mile -- whether there was a half-mile limit in the state
8 rules and regulations or federal, correct?

9 A. Yes.

10 Q. Were you here last time when Key Energy's
11 business witness testified that they don't typically --
12 I think the testimony was they haven't drilled a
13 disposal well within a half mile of another disposal
14 well.

15 A. Yes.

16 Q. And that they do not allow disposal wells
17 within a half mile of their wells?

18 A. I don't -- I don't think that I recall hearing
19 that. No, sir.

20 Q. Are you aware of Key Energy not protesting or
21 objecting to a disposal well within a half mile of one
22 of their saltwater disposals?

23 A. I'm not aware of them protesting or not
24 protesting, in either case.

25 Q. So when you were talking about the regulations,

1 you weren't talking about Key Energy's practices,
2 correct?

3 A. I was talking about state and federal
4 regulations.

5 Q. And you weren't talking about industry
6 practices either, were you?

7 A. No.

8 Q. What is the reason, if you know, why Key Energy
9 does not locate a well typically within a half mile of
10 another saltwater disposal well?

11 A. I don't know the answer to that.

12 Q. Where did the -- where did the half-mile
13 setback come from?

14 A. I'm not aware of any half-mile setback.

15 Q. And before the last hearing, just to refresh
16 me, how -- how far before the last hearing were you
17 aware that Solaris had a permit for a disposal well
18 within a half mile of this location?

19 A. So Mr. Nance had said that there's been an
20 approved permit, and I believe it was several weeks
21 before the hearing, a couple of weeks maybe, but I don't
22 remember the exact date.

23 Q. So looking at Exhibit 16, again the pressure
24 buildup tables, if you will; is that correct?

25 A. Yeah, the plots. Yeah.

1 Q. Plots.

2 If I understand correctly, you had the --
3 you used the same formula that you used for a single
4 plot that you did for the last hearing?

5 A. That's correct.

6 Q. And there was no -- you haven't developed any
7 data since the last hearing or uncovered any data that's
8 necessary for you to develop these plots, correct?

9 A. Except for the distance between the wells, no.
10 That's correct.

11 Q. And why didn't you have the distance between
12 wells at the last hearing?

13 A. Well, let me back up. So the distance between
14 the wells with the 250-foot offset, in the original
15 calculations from the original hearing, we had the
16 distance between those wells, and I've continued to use
17 that data on this -- on these plots as well.

18 Q. So that didn't change?

19 A. No.

20 Q. So nothing's changed other than you did some
21 additional analysis?

22 A. That's correct.

23 MR. DOMENICI: That's all I have.

24 EXAMINER GOETZE: Thank you.

25 Ms. Bennett?

1 CROSS-EXAMINATION

2 BY MS. BENNETT:

3 Q. I just have a couple of follow-up questions
4 about Exhibit 16 and Exhibit 17.

5 Good morning.

6 A. Hello.

7 Q. On Exhibit 16, just so I'm clear, this just
8 takes into account Solaris and Key Energy -- Key
9 Energy's Queen well; is that right?

10 A. Yes.

11 Q. No other SWD wells in the area?

12 A. That's correct.

13 Q. How did you determine -- and I think the answer
14 to this is probably that you were asked to do this. But
15 how did you determine which wells to include in your net
16 pressure buildup?

17 A. Well, so I was asked to include the permitted
18 Solaris location in conjunction with the proposed Key
19 location.

20 Q. And so this doesn't include any other SWDs,
21 though, that are operating or proposed to operate in the
22 basin?

23 A. No, it doesn't.

24 Q. Okay. And then just turning quickly to Exhibit
25 17 -- I understand, again, this was prepared based on a

1 request from the Division, but does this show -- I see
2 your proposed well here in Section 19. But does this --
3 this doesn't show any other SWDs except the Solaris
4 well; is that right?

5 A. That's correct.

6 Q. Okay. So it doesn't show any SWDs that might
7 be proposed to be located if Sections 23, 24 of the
8 adjoining township and range?

9 A. No, it doesn't.

10 MS. BENNETT: Those are all the questions I
11 have. Thank you.

12 EXAMINER GOETZE: Thank you.

13 Ms. Murphy?

14 EXAMINER MURPHY: No questions.

15 CROSS-EXAMINATION

16 BY EXAMINER GOETZE:

17 Q. Just one question with regards to the cementing
18 of your liner. Are you going to participate [sic]
19 that in that process, or are you aware of the process?

20 A. If I'm asked to do so, yes, sir. I'm aware of
21 that.

22 Q. So what do you think will be the process in
23 general to cement this?

24 A. So -- so given the -- the reach distance in --
25 in the sidetrack borehole and tying it back to surface,

1 what I've done successfully in the past is we've
2 sidetracked the well through the whipstock, drill to
3 total depth, we do our open-hole logging, and then we
4 run a liner that goes back up -- some distance back up
5 inside the log-string casing. In this case it'll be the
6 7-inch. We cement that in place. We let that cement
7 cure. We come back. And that liner's got a tie-back
8 sleeve at the top. We go back in with what I consider a
9 tie-back liner that stings into the tie-back sleeve, and
10 then we have a cementing port just above that, and we
11 cement that back to surface.

12 **Q. So you've got proposed CBL on the liner, and**
13 **you're still committed to that?**

14 A. Yes.

15 **Q. I have no further questions.**

16 EXAMINER GOETZE: Attorney?

17 EXAMINER DAVID: I have no questions.

18 EXAMINER GOETZE: With that, do you have
19 any other witnesses or --

20 MR. NANCE: I have no other witnesses.

21 REDIRECT EXAMINATION

22 BY MR. NANCE:

23 **Q. Do you have anything in response to what the**
24 **attorneys asked you?**

25 A. I don't think so.

1 MR. NANCE: We rest our case.

2 EXAMINER GOETZE: Would you like this taken
3 under advisement?

4 MR. NANCE: We would. We appreciate your
5 time in these last couple of hearings.

6 EXAMINER GOETZE: We get paid for it.
7 Therefore, Case Number 20583 is taken under
8 advisement.

9 (Case Number 20583 concludes, 9:00 a.m.)

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1 STATE OF NEW MEXICO
2 COUNTY OF BERNALILLO

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4 CERTIFICATE OF COURT REPORTER

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

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

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

20 DATED THIS 9th day of October 2019.

21

22

23 MARY C. HANKINS, CCR, RPR
24 Certified Court Reporter
25 New Mexico CCR No. 20
Date of CCR Expiration: 12/31/2019
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