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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:
Case Nos. 23614-17, 23775,
24018-20, 24025, 24123

Docket No.
D-1-GN-24-006094

HEARING

DATE: Friday, April 25, 2025
TIME: 9:03 a.m.
LOCATION: State Of New Mexico Oil Conservation
Commission
Pecos Hall, First Floor
Wendell Chino Building
1220 South Saint Francis Drive
Santa Fe, NM 87505
REPORTED BY: Nicole Johns
JOB NO.: 7225931

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A P P E A R A N C E S (Cont'd)

ALSO PRESENT:

- Sheila Apodaca
- Jose Amaya
- Baylen Lamkin
- John McBeth
- Gerasimos Razatos
- David White
- Joe McShane
- Amanda Rabon
- Julia Caldaro-Baird,
- Preston McGuire
- Jim Davidson
- Kerby Hunt
- Johnathan Markell
- Patrick Ryan
- Patrick Walker
- Carl Chavez
- Rachel Chapul
- John Waymeyer

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I N D E X

PAGE

VOIR DIRE of Thomas Tomastik

By Mr. Rankin

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VOIR DIRE of David White

By Mr. Rankin

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WITNESS(ES):

DX

CX

RDX

RCX

LARRY LAKE

By Mr. Rankin

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THOMAS TOMASTIK

By Mr. Rankin

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By Ms. Hardy

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By Mr. Suazo

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By Mr. Lamkin

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By Dr. Ampomah

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DAVID WHITE

By Mr. Rankin

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By Mr. Moander

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By Dr. Ampomah

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E X H I B I T S

NO.	DESCRIPTION	ID/EVD
Empire:		
Exhibit 1	Papers and Slides with SPE Paper	17/17
Exhibit 2	Goodnight Fluid-Level Data with Graphic Representation of Data	17/18
Exhibit 3	Kinder Morgan Screening Tool Dimensionless Curve	18/**
Exhibit 4	Water Saturation from the EMSU Working Interest Owners Meeting, 1990	22/23
	(**Exhibit rejected.)	
Goodnight:		
Exhibit 1	Slide Number 10	22/23
Empire Cross:		
Exhibit 1	Simulation Model Vertical Permeability Spreadsheet	47/47
Exhibit 2	Simulation Model Vertical Permeability Distribution	47/47

E X H I B I T S (Cont'd)		
NO.	DESCRIPTION	ID/EVD
3	Empire Cross:	
4	Exhibit 3	1959 Pressure Calculation For
5		Eme Number 20 47/47
6	Exhibit 4	Rice's EME 20 Bottom Hole
7		Pressure Survey 47/47
8	Exhibit 5	Rice's EME 20 Wellboard
9		Diagram 47/47
10	Exhibit 6	Pressure Depletion From EME
11		20 BHP in 1959 to RFT
12		Pressure Points in 1986 47/47
13	Exhibit 7	Impact of Rock Facies on Oil
14		Saturation, Three Slides 47/47
15	Exhibit 8	Grayburg Conventional Core
16		Measurements, Four Slides,
17		EMSU 649, 650, 653 and 710 47/47
18	Exhibit 9	SPE 122921 Estimates of
19		Potential CO2 Demand for CO2
20		EOR in Wyoming Basins 47/47
21	Exhibit 10	Goodnight Fluid Level Data,
22		04/07/2025 47/47
23	Exhibit 11	Water Saturation From EMSU
24		Working Interest Owners
25		Meeting, 1990 47/47

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P R O C E E D I N G S

MR. RAZATOS: Good morning to everybody. Happy Friday. Can you hear me in Pecos Hall?

MS. APODACA: Yes, we hear you.

MR. RAZATOS: Excellent. Thank you.

My name is Gerasimos Razatos. I am the acting director for the Oil Conservation Division, and also the acting chair for the Oil Conservation Commission. Today is Friday April the 25th. This is the continuation of our evidentiary hearing for the consolidated cases by Goodnight Midstream and Empire New Mexico.

The case numbers are case numbers 24123, 23614-17, case number 23775, and case numbers 24018 through 24020, and 24025.

I am remote. Acting Commissioner Lamkin is also on the platform as well, and he is remote just to let everybody know.

So, Mr. Hearing Officer, we transfer it over to you. Just as a reminder, we do have the timeframes for this afternoon to make sure that we finish on time.

THE HEARING EXAMINER: Thank you, Chairman Razatos.

1 Yes, the timeframes being, I believe,
2 we need to be out of here by 3 p.m. And I have the --
3 set for 2:45 as a fifteen-minute warning.

4 MR. RAZATOS: Excellent. Thank you.

5 THE HEARING EXAMINER: Are we ready in
6 the back there, Sheila?

7 MS. APODACA: Yes. We are.

8 THE HEARING EXAMINER: And good
9 morning, Madam Court Reporter. Are you ready to
10 start?

11 Let's see. I see some --

12 THE REPORTER: Okay. There.

13 THE HEARING EXAMINER: There you go.

14 THE REPORTER: There you go.

15 THE HEARING EXAMINER: So --

16 THE REPORTER: Yes.

17 THE HEARING EXAMINER: All right.

18 Let's go on the record when you're ready.

19 THE REPORTER: Give me one second. Let
20 me just get one more thing. All right.

21 THE HEARING EXAMINER: Okay. Thank
22 you.

23 THE REPORTER: Today -- oh, I'm sorry.

24 THE HEARING EXAMINER: No, go ahead.

25 THE REPORTER: Today is April 25, 2025.

1 The time is 10:03 a.m., and we are on the record.

2 THE HEARING EXAMINER: 10:03 a.m.

3 wherever you are.

4 THE REPORTER: Oh, I'm sorry.

5 9:03 a.m. Mountain Standard Time.

6 THE HEARING EXAMINER: Okay. Great.

7 All right.

8 Mr. Rankin, are there any preliminary
9 matters before we get on with the redirect of
10 Dr. Lake?

11 MR. RANKIN: There are some
12 housekeeping matters that we'll raise after Dr. Lake
13 is redirected, but Dr. Lake has a flight in
14 Albuquerque and we're trying to get him out of here so
15 he can make his flight.

16 THE HEARING EXAMINER: Well, that'll be
17 up to you, I guess.

18 MR. RANKIN: Yeah. He will.

19 THE HEARING EXAMINER: All right. The
20 plan will rest squarely on your shoulders.

21 MR. RANKIN: Dr. Lake is staring me
22 down right now.

23 THE HEARING EXAMINER: Dr. Lake, I'll
24 just remind you -- not that I need to, but I'll just
25 remind you, you're under oath.

1 Mr. Rankin?

2 MR. RANKIN: Thank you, Mr. Hearing
3 Officer.

4 REDIRECT EXAMINATION

5 BY MR. RANKIN:

6 MR. RANKIN: Dr. Lake, do you recall a
7 question from the Commission yesterday about
8 Dr. Buckwalter's [ph] relative permeability curves
9 that you presented on Slide 8 of your summary slides?

10 DR. LAKE: Can you show it?

11 MR. RANKIN: Yeah. Is this your Slide
12 8 from your summary slides?

13 DR. LAKE: Yes.

14 MR. RANKIN: And do you recall
15 questions yesterday from the Commission about the
16 relative permeability curves from Dr. Buckwalter's
17 [ph] model relating to the Grayburg?

18 DR. LAKE: Yes.

19 MR. RANKIN: Do you recall that you
20 were asked whether you thought it was possible that
21 Dr. Buckwalter [ph] adjusted or changed the endpoints
22 on his relative permeability curves for his final
23 model fit?

24 DR. LAKE: When you say "endpoint," do
25 you mean the saturations of the -- of the endpoints on

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1 the relative perm.?

2 MR. RANKIN: Yeah. And I'm
3 specifically addressing the irreducible water
4 saturation that he set at .35.

5 DR. LAKE: Yeah. We -- I recall that,
6 yes.

7 MR. RANKIN: Okay. And you said it was
8 likely. Do you recall that?

9 DR. LAKE: Yes.

10 MR. RANKIN: Now, your Slide 8 shows
11 Dr. Buckwalter's [ph] relative permeability curve for
12 the Grayburg used an irreducible water saturation of
13 35 percent; correct?

14 DR. LAKE: Yes.

15 MR. RANKIN: Okay. And I'm going to
16 bring up the slide that Dr. Buckwalter [ph] presented
17 to the Commission as part of his summary testimony
18 that you listened to. Is that correct, Dr. Lake?

19 DR. LAKE: Yes.

20 MR. RANKIN: Okay. This is a slide
21 from Dr. Buckwalter's [ph] summary testimony to the
22 Commission showing what his input parameters were for
23 his final model. This is his Slide 10. Do you recall
24 seeing this from Dr. Buckwalter's [ph] presentation?

25 DR. LAKE: I think so. Yeah.

1 MR. RANKIN: Now, it shows -- does it
2 show that the irreducible water saturation on his
3 relative permeability curve used in his model
4 simulation was set to 35 percent?

5 DR. LAKE: Yes.

6 MR. RANKIN: Okay. And it was also the
7 relative permeability curve that he provided to you;
8 correct?

9 DR. LAKE: Yes.

10 MR. RANKIN: Okay. And what does that
11 indicate to you was the goal of the simulation?

12 DR. LAKE: Well, it's fairly common to
13 adjust parameters on the input of a simulator. I --
14 I'm going to strike "fairly common." It's inevitable
15 that you adjust parameters to make it match a given
16 target. And so it seems to me that he's loaded too
17 much water into the simulation here, and I think that
18 may be to basically force the simulator to take water
19 from the -- the San Andres formation or somewhere.

20 MR. RANKIN: And input it where?

21 DR. LAKE: Into the -- into a
22 simulator, into a Grayburg.

23 MR. RANKIN: Thank you, Dr. Lake.

24 Mr. Hearing Officer, I have no further
25 questions for Dr. Lake.

1 THE REPORTER: I'm sorry. Can someone
2 let my -- my audio into the room? I just noticed that
3 my audio is still in the waiting room, my backup
4 audio. It should say "reporter audio."

5 MS. APODACA: Can you try to join it
6 again?

7 THE REPORTER: Yes. I will join with
8 the meeting directly give me one second. I apologize.

9 THE HEARING EXAMINER: Madam Court
10 Reporter?

11 THE REPORTER: Yes.

12 THE HEARING EXAMINER: Let's solve this
13 after we excuse this witness, if you don't mind. He's
14 trying to catch a plane in Albuquerque.

15 THE REPORTER: Absolutely.

16 THE HEARING EXAMINER: All right.
17 Empire, may Dr. Lake be excused?

18 MS. SHAHEEN: Absolutely.

19 Thank you, Dr. Lake.

20 THE HEARING EXAMINER: OCD?

21 MR. MOANDER: No objection.

22 THE HEARING EXAMINER: Rice?

23 MR. BECK: No objection.

24 THE HEARING EXAMINER: Pilot?

25 MR. SUAZO: No objection.

1 THE HEARING EXAMINER: Dr. Lake, thank
2 you for your time and safe travels.

3 MS. APODACA: Ms. Johns, I see your
4 audio's on the platform now.

5 THE REPORTER: Yes, it is -- yes, it
6 is. Sorry. Thank you.

7 THE HEARING EXAMINER: Okay. So are
8 you ready to proceed, Madam Court Recorder?

9 THE REPORTER: I am. Thank you.

10 THE HEARING EXAMINER: All right.

11 And who is your next witness,

12 Mr. Rankin?

13 MR. RANKIN: Good morning, Mr. Hearing
14 Officer. Our next witness will be Mr. Tomastik. But
15 we do have some housekeeping matters. I think
16 Ms. Shaheen has some exhibits that you would like to
17 move. And at the pleasure of the Hearing Officer, we
18 can deal with these housekeeping matters now or at a
19 more appropriate time.

20 THE HEARING EXAMINER: Go ahead,
21 Ms. Shaheen.

22 MS. SHAHEEN: Thank you, Mr. Hearing
23 Officer. These are papers and slides that were used
24 with the cross-examination of Dr. Lake, the first one
25 being the SPE paper that he relied on. And I can show

1 that to everyone if they would like.

2 (Empire Exhibit 1 was marked for
3 identification.)

4 THE HEARING EXAMINER: Any objection
5 from Goodnight?

6 MR. RANKIN: No objection.

7 THE HEARING EXAMINER: OCD?

8 MR. MOANDER: No objection.

9 THE HEARING EXAMINER: Rice?

10 MR. BECK: No objection.

11 THE HEARING EXAMINER: Pilot?

12 MR. SUAZO: No objection.

13 THE HEARING EXAMINER: Okay. That will
14 be admitted.

15 (Empire Exhibit 1 was received into
16 evidence.)

17 MS. SHAHEEN: Thank you. The second
18 thing is the fluid-level data that Goodnight recently
19 provided to Empire, along with the graphic
20 representation of that fluid-level data. That was the
21 slide that was used in our cross-examination of
22 Dr. Lake yesterday.

23 (Empire Exhibit 2 was marked for
24 identification.)

25 THE HEARING EXAMINER: I doubt if

1 you'll object to that, but --

2 MR. RANKIN: Let me think about it. No
3 objection.

4 THE HEARING EXAMINER: OCD?

5 MR. MOANDER: No objection.

6 THE HEARING EXAMINER: Rice?

7 MR. BECK: No objection.

8 THE HEARING EXAMINER: Pilot?

9 MR. SUAZO: No objection.

10 THE HEARING EXAMINER: It will be
11 admitted.

12 (Empire Exhibit 2 was received into
13 evidence.)

14 MS. SHAHEEN: Third is the slide of the
15 dimensionless curve that Mr. West used in his
16 testimony, and that illustrates it came from the
17 Kinder Morgan screening tool.

18 (Empire Exhibit 3 was marked for
19 identification.)

20 MR. RANKIN: We do have an objection on
21 that, Mr. Hearing Officer. We were not -- we asked
22 repeatedly the source of that curve. We were not told
23 it was the Kinder Morgan screening tool. We asked for
24 them to provide us with the paper, the backup, the
25 data that supported it.

1 We were never provided any of that
2 information repeatedly. It took us weeks to get them
3 to tell us where it came from, what the basis for it
4 was. We couldn't get any data that substantiated
5 whether it was a main pay zone or an ROZ.

6 I strenuously object to it being
7 entered into the evidence, because it was part of his
8 direct case, and it was not part of his testimony that
9 he was required to submit back in August of 2024. It
10 took us months to get that information, and only
11 yesterday did we learn that it came from Kinder
12 Morgan.

13 It's unreasonable, totally unfair. We
14 had no notion of where it came from, and we asked
15 repeatedly.

16 THE HEARING EXAMINER: Let me ask. Not
17 to put you on the hotspot, Mr. Shandler, but do you
18 think that this exhibit would be useful to
19 the Commission?

20 MS. SHAHEEN: And I'm happy to respond
21 to Mr. Rankin's statement, because I disagree with his
22 representations of what's --

23 THE HEARING EXAMINER: Well, why don't
24 you do that, and that'll give Mr. Shandler more
25 information.

1 MS. SHAHEEN: Mr. West specifically
2 testified that he used the SPE paper that we reviewed
3 yesterday with Dr. Lake for his dimensionless curve,
4 and he also testified that it came from the Kinder
5 Morgan screening tool. So Goodnight has clearly had
6 the SPE paper, because it was produced by Goodnight as
7 a paper that Dr. Lake himself relied on.

8 MR. RANKIN: To be 100-percent clear,
9 we had the SPE paper. We only learned from this
10 hearing that it was part of the screening tool, and we
11 asked repeatedly where it came from. And we were
12 given that SPE paper, which did not reference, to my
13 knowledge, that it was a Kinder Morgan -- part of the
14 Kinder Morgan screening tool.

15 MS. SHAHEEN: And I'm happy to respond
16 further if it would be helpful to the Commission.

17 THE HEARING EXAMINER: Go ahead.

18 MS. SHAHEEN: Thank you, Mr. Officer.
19 Dr. Lake had the SPE paper and produced it as a
20 document that he relied on. It seems to me that with
21 Dr. Lake's experience that he would have been well
22 aware of where that dimensionless curve came from that
23 was represented in the paper that he produced that he
24 relied on.

25 THE HEARING EXAMINER: Does the paper

1 itself referenced the source?

2 MS. SHAHEEN: That --

3 THE HEARING EXAMINER: Does the paper
4 itself reference the source?

5 MS. SHAHEEN: The source of the curve?

6 THE HEARING EXAMINER: Right. The
7 Kinder Morgan.

8 MS. SHAHEEN: That, I don't recall.

9 THE HEARING EXAMINER: Does it?

10 MR. RANKIN: No. And we've asked.
11 They just tell us. We asked repeatedly.

12 MS. SHAHEEN: And Mr. West told you in
13 his testimony.

14 THE HEARING EXAMINER: Okay. Well, I
15 think -- my thoughts on the subject are it sounds to
16 me like an unfair surprise. I mean, the testimony
17 is -- I mean, we can't unring the bell on the
18 testimony, but it sounds to me like it's going to be
19 limited to being a demonstrative exhibit unless
20 Mr. Sandler thinks we really need it.

21 All right. So the objection is
22 sustained. That one will not be admitted.

23 MS. SHAHEEN: The final slide is the
24 shot of the initial water saturation from the EMSU
25 working interest owners meeting in 1990.

1 (Empire Exhibit 4 was marked for
2 identification.)

3 THE HEARING EXAMINER: Mr. Rankin?

4 MR. RANKIN: Well, let me address that.
5 I have no -- that's part of the Commission's -- I
6 believe it's part of the Commission's administrative
7 record. I will add that it was also part of
8 Dr. Buckwalter [ph] Slide Number 10.

9 And at the time Dr. Buckwalter [ph]
10 represented his testimony in slides, I believe that
11 the Hearing Officer made the point that that Slide
12 Number 10 would be part of the record, so I don't know
13 that we need a separate admission of that.

14 But I do want to also make clear
15 that -- and I discussed this with Ms. Shaheen -- that
16 we would want to make sure -- and I didn't see it
17 separately admitted as an exhibit by Empire -- but I
18 would want to make sure that that Slide Number 10 is
19 part of the record in this case.

20 (Goodnight Exhibit 1 was marked for
21 identification.)

22 MR. RANKIN: That does also include
23 that image from the technical committee meeting
24 minutes from -- or working interest owner meeting
25 minutes from 1990.

1 THE HEARING EXAMINER: Ms. Shaheen?

2 MS. SHAHEEN: No objection to admission
3 of Dr. Buckwalter's [ph] Slide 10.

4 THE HEARING EXAMINER: All right. So
5 we'll treat that exchange as a stipulation.

6 Based on that stipulation, OCD, any
7 objection?

8 MR. MOANDER: No objection.

9 THE HEARING EXAMINER: Rice?

10 MR. BECK: No objection.

11 THE HEARING EXAMINER: Pilot?

12 MR. SUAZO: No objection.

13 THE HEARING EXAMINER: All right. It
14 will be admitted subject to Empire Exhibit 10 being
15 admitted as well, if it isn't already.

16 (Empire Exhibit 4 and Goodnight
17 Exhibit 1 were received into evidence.)

18 MR. RANKIN: Just to be clear for my
19 colleague, because he's keeping track, both would be
20 admitted; correct?

21 THE HEARING EXAMINER: Yes.

22 MR. RANKIN: Okay.

23 Anything else, Ms. Shaheen?

24 MS. SHAHEEN: That's it for me. Thank
25 you.

1 MR. WAYMEYER: We do have additional
2 sets of exhibits to admit.

3 Can you please publish the slides?

4 Mr. Hearing Officer, you'll recall
5 yesterday that there was quite a fuss over brand new
6 slides, brand new analyses that the commission
7 acknowledged was brand new analysis conducted by
8 Mr. Knights [ph].

9 Those were the slides where he'd gone
10 in and created new barriers with the blue shading on
11 them, and there were some related exhibits that,
12 again, were brand new analyses. And over Empire's
13 objection, those slides were received in evidence, and
14 we don't fuss with that.

15 I think Mr. Moander -- and I may be
16 misattributing this -- has cited the goose and gander
17 doctrine as part of these proceedings. And so what we
18 have here -- and I'll go through the same fashion
19 through all of the exhibits the way Mr. Rankin did,
20 and then if the commission wants his response -- the
21 first slide that we'd be offering was used in the
22 testimony of Mr. West [ph].

23 It just required the correction. The
24 explanation was made where the zeroes were changed to
25 dots. And when the zeroes were changed to dots for

1 presentation, the decimal just carried over. So this
2 is the corrected 99-grid block out of 34,500-grid
3 block slide.

4 Additionally, this was used and
5 testified to in the testimony of Mr. McBeth.

6 If we can go to the next slide.

7 This slide is also the --

8 THE HEARING EXAMINER: Hold on just a
9 second, Mr. Waymeyer.

10 So, Mr. Rankin, make notes of these.

11 MR. RANKIN: I'm trying, yeah.

12 THE HEARING EXAMINER: So I appreciate
13 your approach. I'd like to go through all of them,
14 and then we'll go through any objections to all of
15 them. Go ahead, Mr. Waymeyer.

16 MR. WAYMEYER: Thank you. The second
17 slide, again, this was just the corrected one. This
18 was visited about with Mr. West prior to correction
19 with Mr. McBeth after correction.

20 This was just showing in graphical
21 display the grid blocks that had the vertical
22 permeability adjustments made to them to clarify the
23 confusion that there was a uniform blanket adjustment
24 to vertical permeability that was made. That was not
25 the case.

1 If we can have the next slide.

2 This was the pressure calculation that
3 was testified to in Mr. McBeth's testimony. Again,
4 this EME Number 20, the Rice data came in late. This
5 is just showing that in comparison to the existing
6 Buckwalker [ph] model, using the brand new information
7 on that Rice owl, Dr. Buckwalter's [ph] model would've
8 only been off by 12 PSI.

9 Again, this was visited about under
10 oath with Mr. McBeth.

11 Next slide.

12 This was testimony visited on with
13 Mr. McBeth. This is working the Rice pressure data
14 from surface down. These were -- this is Rice data
15 here.

16 If we can have the next slide.

17 Also, Rice data just showing with a
18 diagram to decide where this is in vertical depth.
19 And this is showing the pressure calculation from the
20 EME Number 20 if you work it vertically down. And,
21 again, this was all visited about during Mr. McBeth's
22 testimony.

23 If we can have the next slide.

24 The next three slides come from
25 Mr. Scott Birkhead [ph], and this is just showing the

1 impact of rock facies on oil saturation and water
2 saturations. These were visited about both with
3 Mr. Knights [ph] and with Mr. McBeth.

4 If we can have the next slide.

5 This shows the suspicious data that was
6 excluded from the core analyses as part of
7 Mr. Birkhead's [ph] analysis for the reason that they
8 had unreasonable end values. This was visited about
9 with Mr. McBeth and with Mr. Knights [ph].

10 It also provides the average oil
11 saturations, both on a corrected basis and an
12 uncorrected basis and with suspicious data out and
13 with suspicious data in that Dr. Ampomah had asked
14 about in terms of just show me what the core
15 saturations are.

16 Next slide.

17 This is uncorrected core average
18 saturations for Grayburg and San Andres with and
19 without the suspicious, you know, really high end
20 values in versus out. This was, again, material that
21 was inquired about by Dr. Ampomah. This was visited
22 about with Mr. Knights [ph] and Mr. McBeth. I believe
23 it certainly, at least with Mr. McBeth.

24 And this accords reasonably closely
25 with the information that we got from Mr. McBeth in

1 response to testimony from Mr. Rankin's questioning.

2 This was the economic sensitivity
3 graphical display. This was visited about with
4 Mr. McBeth in illustrating his testimony. And then we
5 showed the Grayburg conventional core measurements out
6 of the EMSU 649 and vertical perms.

7 Next slide.

8 MR. RANKIN: Sorry. I need to -- can
9 you go back one slide just so I may I'm -- you are
10 moving quickly. I just want to make sure I catch
11 this. So this is slide 16. There was one before
12 this, slide 15?

13 MS. SHAHEEN: Yeah. These -- the
14 last -- sorry. I'm going the wrong way. I think this
15 is the first of the conventional core measurements.
16 There's four of these slides.

17 MR. RANKIN: And what would -- okay.
18 And remind me who these were presented to.

19 MR. WAYMEYER: I know these were
20 visited about with Mr. McBeth. And these are starting
21 to blend together. I just -- with taking these
22 witnesses out of order, I can't say with certainty if
23 it was Mr. Knights [ph] and Mr. McBeth, but certainly
24 Mr. McBeth. I believe we visited on these.

25 These are conventional core

1 measurements on the 650, the 653, the 710, and the
2 649.

3 Are we to the end of it, Ms. Shaheen?

4 So, again, one, we were presented with
5 brand new analyses that we'd never seen, had a chance
6 to test, do anything with. All of these slides were
7 visited about in detail with Goodnight's witnesses.

8 We would move for their admission. I
9 also think it would be very helpful to the Commission
10 in terms of illustrating the verbal testimony. So on
11 this flat testimonial record that'll come back on a
12 transcript, these are necessary to give fairness to
13 the verbal testimony.

14 And I would also just add with the
15 manner of presentation we have, Empire does not have a
16 rebuttal case here. I think everybody in here would
17 vomit if we had a case in chief, a responsive case,
18 and then a rebuttal case.

19 So Empire is a bit hamstrung in terms
20 of just the procedure because we can't bring witnesses
21 back behind the Goodnight witnesses. We're not asking
22 to do that. But to the extent that the commission has
23 any concerns about these coming in through Goodnight
24 witnesses, that's largely just the function of us not
25 having a typical rebuttal case.

1 So that would be our offer. Thank you.

2 THE HEARING EXAMINER: Okay. Thank
3 you, Mr. Waymeyer. That last point is pretty well
4 taken. You know, it's unusual in my experience at
5 least for there to be before trial all this rebuttal,
6 surrebuttal. I mean, that went back and forth.

7 But, you know, the fact of the matter
8 is no matter how well you prepare with the witness,
9 they're always going to say something unexpected. And
10 so, you know, this sort of falls within that category.
11 I've got -- by my numbering, I have 14 proposed
12 exhibits.

13 Mr. Rankin, why don't -- for sake
14 of -- to expedite things, are there any of the
15 14 -- can we go through those and you tell me if there
16 are any you do not -- give me the list of the ones you
17 don't object to, and then we'll go to the rest.

18 MR. RANKIN: May I ask accommodation of
19 Ms. Shaheen just to go back to the beginning, and I'll
20 quickly just say -- some of these I can handle very
21 fast; okay --

22 THE HEARING EXAMINER: Okay. That's
23 great. I'll make check marks and Xs.

24 MR. RANKIN: All right. So Slide
25 Number 1, no problem with this slide coming in,

1 Mr. Hearing Officer. We want the Commission to
2 understand what the actual values were in the model in
3 every matter.

4 I just want to make sure the record is
5 clear whether this slide is representative of all the
6 KV values or is it just a sampling? Because I wasn't
7 100-percent clear, but I think that this is intended
8 to be representative. And then the next slide shows
9 the distribution of all the KV values.

10 THE HEARING EXAMINER: Mr. Waymeyer, is
11 that correct?

12 MR. WAYMEYER: It has all the KV
13 values, so those are two-acre grid blocks across
14 34,500.

15 MR. RANKIN: So the first slide shows
16 all the KV values that were used in the model. I have
17 no problem with that.

18 Second slide, that shows the
19 distribution of those modified KV values across the
20 model grids. I have no problem with that.

21 This slide here, Mr. Hearing Officer, I
22 have a problem with it only because we were only given
23 certain output files from the model, and we were not
24 given this date.

25 I understand that the H-20 pressure

1 survey came in late and if Dr. Buckwalter [ph] had
2 that data at the time he was testifying, he would've
3 likely checked his model to see where it came up. So
4 I don't think I can strongly object to this, because I
5 think it's reasonable, so this is fine to come in.

6 Okay. This data is -- yeah. Okay.
7 This one is fine. Yeah.

8 Sorry. The previous slide that you
9 showed, Sharon, was one that we already admitted;
10 correct?

11 Okay. All right. This next slide
12 here, Slide 5 shows Rice's EME bottom hole pressure
13 survey. I don't have any problem with this. However,
14 there are -- there's additional information on here
15 that didn't relate just to the survey. Somebody
16 inserted some values of chloride. I don't know where
17 that came from.

18 Is that from the -- was that from the
19 survey report itself? I don't have it in front of me,
20 the actual document. So I don't know if that was
21 inserted or if it came from the document, and that's
22 my problem with this slide.

23 Otherwise I don't have a problem with
24 it. I just don't know where that insertion box came
25 from and if it is from the survey report itself or

1 not.

2 THE HEARING EXAMINER: Mr. Waymeyer,
3 can you clear that up?

4 MR. WAYMEYER: It's a reasonable value
5 that's representative of the composition of Grayburg
6 water.

7 MR. RANKIN: I don't know where that
8 came from. There's no foundation for it. If they
9 redact that or take it out, I have no problem with it
10 coming in. I just don't know what that is or where it
11 came from.

12 MR. WAYMEYER: And by way of reply,
13 there's been plenty of testimony about the TDS and
14 chlorides in Grayburg water as a representative
15 matter. This is certainly in line with the testimony
16 about the composition of that water.

17 MR. RANKIN: I have no problem with it
18 coming in if it just comes off. I don't know where
19 that came from.

20 THE HEARING EXAMINER: Well, what
21 witness put in the numbers or these -- what witness
22 put in these additions?

23 MR. WAYMEYER: Mr. West. And, again, I
24 would be sick to ask to have to bring him back in a
25 rebuttal case to offer something of such pedestrian

1 value.

2 MR. RANKIN: If he's -- Mr. Hearing
3 Officer, if I may, he's testified to what Grayburg
4 values are. He's got historical ranges in his
5 testimony already in his direct. I don't see any need
6 to put it in here.

7 THE HEARING EXAMINER: Well, if he
8 testified to it and it's just written in here and it's
9 consistent with his testimony, that's not enough of an
10 objection.

11 MR. RANKIN: I just don't
12 know -- that's my point.

13 THE HEARING EXAMINER: All right.
14 Well, I've marked that as an -- well, I'll rule on it
15 in a minute. For now, it's objected to. Next?

16 MR. RANKIN: I don't have an objection
17 to this. It appears to be taking OCD data and putting
18 it on a slide, so no objection.

19 The pressure depletion from EME 20
20 bottom hole pressure showing calculated pressures with
21 what Empire has represented as the top of the
22 San Andres -- their pick for the top of the San Andres
23 and then an existing slide from Mr. West.

24 I don't have an -- I understood this
25 served as a demonstrative for Mr. McBeth. I think

1 it's cumulative, because the data on the left has
2 already been admitted now and the RFT has already been
3 admitted.

4 So I don't see the purpose. I think
5 this served its purpose for crossing Mr. McBeth, and
6 so I don't see the purpose for his submission. That's
7 an objection.

8 THE HEARING EXAMINER: Next.

9 MR. RANKIN: Okay. These were a bunch
10 of slides that -- I think the next series of slides
11 all go to petrophysics. That should have been
12 properly directed to Dr. Davidson. Instead, they
13 attempted to -- I have no problem with them crossing
14 Mr. Knights [ph] or Mr. McBeth on these issues, but
15 they should have been properly directed to Dr.
16 Davidson

17 And I've seen no -- there's no
18 foundation for it. These were new and created by
19 Dr. Birkhead [ph]. And I understand situation with
20 the sequencing. That said, this should have been
21 directed to Dr. Davidson.

22 These are petrophysical issues that go
23 to Dr. Davidson's petrophysical analysis, and it
24 should have been properly directed to him to address.
25 Instead they chose to address it to Mr. McBeth and

1 Mr. Knights [ph] who relied on aspects of
2 Dr. Davidson's analysis. And it was proper for
3 purposes of a demonstrative cross.

4 But I don't see any basis for
5 admission, because there's been no foundation laid.
6 We don't know exactly how Mr. Birkhead had did it.
7 And, again, it should have been directed to
8 Dr. Davidson.

9 So this slide and -- Sharon, the next
10 one -- this slide, this slide. Those three
11 slides -- those slides we just addressed all go
12 petrophysics. Don't have the foundation for how they
13 were created, include characterizations of values that
14 don't -- are not substantiated by Empire's own
15 witnesses.

16 And I believe that they're proper for
17 demonstratives and they were useful for cross -- but I
18 don't see any basis for them to come in and as actual
19 evidence.

20 THE HEARING EXAMINER: Mr. Waymeyer,
21 some of these -- two of these look familiar to me.
22 The first one -- was the first one used with -- this
23 one, was that used with any witness?

24 MR. WAYMEYER: Yes. All of these were
25 used. And I just don't want to misrepresent to the

1 Commission. I know they were used with
2 Mr. Knights [ph] who, again, his testimony wraps its
3 arms around the testimony of Dr. Davidson. And he
4 said he understood these and was familiar with them.

5 So he could have said, "I have no clue
6 how this would work into my testimony that wraps its
7 arms around Dr. Davidson's for validity." He didn't
8 say that. We talked through it at length. I think
9 two of them were also -- not this first one, but the
10 second two were also visited about with Mr. McBeth.

11 But the first one -- with
12 Mr. Knights [ph]. He didn't claim ignorance of them,
13 didn't claim he didn't know how they work or what they
14 demonstrate by way of his testimony. And then the
15 second two were also with Mr. McBeth.

16 THE HEARING EXAMINER: All right.
17 Thank you. Let's move on to the one on -- what I have
18 labeled "Economic Sensitivity." There we go.

19 MR. RANKIN: Okay. So this slide, I
20 think -- just so I maybe can group them, Sharon, is
21 there another one about economics too after this?

22 MR. WAYMEYER: No.

23 MR. RANKIN: Okay. So this one here,
24 so I do have a serious concern about this, because it
25 is Empire's case in chief to demonstrate that there is

1 an economic basis for their proposal for this ROZ.
2 And this -- Mr. West dedicated two paragraphs to that
3 in his direct testimony and none in his rebuttal;
4 okay?

5 He did one model run for two different
6 sets of patterns. That was it. And if he wanted to
7 present, as he now feels he should have, a more robust
8 economic analysis with greater sensitivities across a
9 greater range of scenarios, that should have been done
10 in his direct when he filed it in August of 2024.

11 That was not done. And now they're
12 using cross to try to get that into the record, which
13 is improper. It should have been done in the direct
14 case. We pointed out the failures of the economic
15 model in our rebuttal, and we pointed it out again
16 here and on -- with Mr. McBeth's summary.

17 And my point about this is that it is
18 not appropriate to try to get in and to bolster their
19 direct case now with this additional exhibit.

20 THE HEARING EXAMINER: Mr. Waymeyer,
21 was this exhibit used with Dr. West?

22 MR. WAYMEYER: It was not used with
23 Mr. West; it was used with Mr. McBeth. And may I
24 reply very, very briefly?

25 THE HEARING EXAMINER: Okay.

1 MR. WAYMEYER: First, we disagree with
2 the characterization of an economic burden here by way
3 of this commission proceeding for Empire. We
4 vigorously disagree with that.

5 Secondly, again, you know, this is just
6 a math exercise based on the data that's -- the
7 underlying data that's already there.

8 Additionally, the Commission will
9 recall it allowed surrebuttals in the middle of this
10 proceeding by Dr. Davidson, by Mr. Knights, and I
11 think Mr. McBeth did a surrebuttal, too. Certainly
12 Preston McGuire did a surrebuttal.

13 So we've got brand new testimony on
14 economic things that came in three weeks ago and,
15 again, this is not controversial. This is a math
16 exercise. It's incredibly helpful to the Commission.

17 THE HEARING EXAMINER: Was it
18 testified -- did a witness testify about these
19 numbers?

20 MR. WAYMEYER: Mr. McBeth did. We went
21 through them with him.

22 THE HEARING EXAMINER: Okay. All
23 right.

24 Next?

25 MR. RANKIN: So this next series of

1 slides all relate to Grayburg values, core
2 measurements in the Grayburg. So I think as to these,
3 as long as it's clearly marked for each of these that
4 they're Grayburg, no -- I mean these are all in, in
5 what everybody would call Grayburg. Every one of
6 these.

7 If I go through, I
8 think -- Ms. Shaheen, if you wouldn't mind scrolling
9 forward.

10 These are all within what everybody
11 would call Grayburg and I think they're all labeled as
12 such.

13 Is that the last one?

14 MS. SHAHEEN: Yes.

15 MR. RANKIN: Okay. Yeah. No objection
16 to these coming in.

17 THE HEARING EXAMINER: All right. So
18 let's go back to Slide Number 1, 99-grid block.
19 That'll be admitted. Number 2, the vertical
20 permeability distribution slide, that'll be admitted.
21 Number 5, the Rice -- I have Rice EME depletion.

22 MR. RANKIN: Oh, maybe this one is
23 first, Mr. Hearing Officer, Exhibit Slide 3. Oh, I'm
24 sorry. You're just going over admissions. I
25 apologize for interjecting.

1 THE HEARING EXAMINER: Right. So okay.
2 I believe you agreed to this one with -- no, you
3 didn't, because of the additions; right?

4 MR. RANKIN: Right.

5 THE HEARING EXAMINER: What's the next
6 one? Next slide. Is this the one you agreed to?

7 MR. RANKIN: Correct.

8 THE HEARING EXAMINER: That'll be
9 admitted, Rice's EME-20 wellbore diagram.

10 Then -- okay. And then the last four,
11 the Grayburg core measurements for EMSU 649, 656, 653,
12 and 710.

13 Okay. Then let's go back to Slide
14 Number 3. The 1959 pressure calculation for EME
15 Number 20. Okay. Now, I recall seeing this being
16 used as a demonstrative exhibit with some witness.
17 Who was this used with?

18 MR. WAYMEYER: This would've been used
19 with Mr. Knights who, again, his whole testimony wraps
20 itself around Dr. Davidson.

21 MR. RANKIN: Actually, I believe it was
22 Mr. McBeth, because it was about the model and, and
23 Mr. McBeth testified about the model. I believe this
24 was cross on Mr. McBeth. Not that it makes much of a
25 difference, but this is relating to

1 Dr. Buckwalter's [ph] model --

2 THE HEARING EXAMINER: Okay. It'll be
3 admitted over your noted objection, Mr. Rankin.

4 Next slide.

5 And this is -- my understanding is you
6 object to this because it has the written-in comments
7 that weren't on the original?

8 MR. RANKIN: Correct. I don't mind the
9 calculations that were done, but I don't know a basis
10 or foundation for that and if it's merely meant to be
11 representative of Mr. West's testimony, which is
12 already in the record and is more accurate, because it
13 includes the range of historical values. And I don't
14 see the purpose of this, and I can't verify as I sit
15 here right now.

16 THE HEARING EXAMINER: Okay. Well, at
17 best -- your objection is cumulative of what the
18 witness said, so that goes to the -- this slide will
19 be admitted.

20 Next.

21 Okay. This one was admitted.

22 Next.

23 And my understanding is you object to
24 this one as well, Mr. Rankin, basically because it's
25 cumulative of other exhibits?

1 MR. RANKIN: That's correct.

2 THE HEARING EXAMINER: All right.
3 It'll be admitted over that objection.

4 Then the next three are the rock
5 facies, and -- all right. So I'm sorry. Refresh my
6 recollection on why you object to this.

7 MR. RANKIN: Sure. These were
8 directed -- these are petrophysical issues. I have no
9 problem with Mr. Waymeyer crossing Goodnight's
10 witnesses who did not prepare the petrophysical
11 analysis on this for their basis for relying on
12 Dr. Davidson and probing them on that.

13 However, I don't have the foundation
14 for the creation of these documents, and I do think it
15 was more appropriate -- should have been at least
16 directed to Dr. Davidson. If he was challenging the
17 basis for the petrophysics, these should have been
18 directed at least to Dr. Davidson to establish on a
19 petrophysical basis what they mean.

20 Instead, he used them against a
21 geologist and a reservoir engineer. And my point is,
22 like, if he wants to establish the validity and
23 reliability of these as representative of -- geologics
24 analysis or whether they're even reasonable, it should
25 have been directed to a petrophysical expert.

1 Instead, he avoided that and used them
2 against other folks who don't have that expertise.
3 Now, it's fair to use them for cross. I have no
4 problem with that. But my point is simply that it's
5 not a basis for laying a foundation for admission, and
6 for that reason it should be not admitted.

7 THE HEARING EXAMINER: Okay. And I
8 take it that objection goes to all three of those
9 sides?

10 MR. RANKIN: Yeah.

11 THE HEARING EXAMINER: Let me have a
12 brief response from you, Mr. Waymeyer.

13 MR. WAYMEYER: Again, Mr. Knights and
14 Mr. McBeth testified to their understanding of the
15 information communicated. None of them said: "We
16 don't understand it. We disagree with it." There was
17 none of that. They testified at length about it and
18 identified no inaccuracy in it.

19 And, again, we don't have a rebuttal
20 case. If he wants these super formalities, we just
21 don't have that format here. And to Mr. Moander's
22 goose and gander these are appropriate under what
23 happened yesterday.

24 THE HEARING EXAMINER: Okay. Well, you
25 know, the criticism that these were used with the

1 wrong witness, you know, you can certainly make that
2 argument, Mr. Rankin. I think that that goes to the
3 weight and not the admissibility of these exhibits.

4 And, you know, you can make the
5 argument that the Commission should disregard them
6 because they were brought up with the wrong witness.

7 I'm going to admit those three
8 exhibits. That takes us to the last objected one, the
9 economic certificate slide.

10 Okay. And -- all right. And, again,
11 this was, this was used with at least one of the
12 witnesses in the case, and so there's testimony about
13 all this information that's in the slide, is three
14 not, Mr. Rankin.

15 MR. RANKIN: Well, I think I'd have to
16 go back and review exactly what Mr. McBeth said. I
17 think he said he didn't know, hadn't seen these, so he
18 had to run the model. So he doesn't know -- he can't
19 represent the veracity or validity of these numbers,
20 is my recollection.

21 He was asked about them. He was
22 queried on them. I do believe he said he didn't know.
23 because he didn't have the model. These were -- my
24 point, again, is that they're attempting to back in
25 information and testimony that they failed to put in

1 on a direct case. And that's my point about this, and
2 it's improper.

3 And if -- you know, Mr. McBeth
4 addressed the, the in his rebuttal and there was no
5 discussion up until this cross exhibit from them about
6 the need or desire to put anything else in the record,
7 and so they're trying to back this in at the last
8 minute to bolster their economic case, and I think
9 that's inappropriate.

10 THE HEARING EXAMINER: So this was used
11 as a demonstrative exhibit with Mr. McBeth; is that
12 right?

13 MR. WAYMEYER: Yes. You're correct.
14 We went through all of these columns and rows with
15 Mr. McBeth in detail.

16 THE HEARING EXAMINER: All right.
17 Well, I'm going to give this one to Mr. Rankin. It's
18 cumulative of whatever testimony was elicited from the
19 witness with respect to this. So we won't admit this
20 economic sensitivity. That will be excluded.

21 MR. WAYMEYER: May I make an
22 alternative motion? I respect the decision. May we
23 alternatively request that this be appended to the
24 record as a demonstrative exhibit, not an exhibit
25 accepted for the accuracy of its context, but a

1 demonstrative exhibit to assist those reviewing the
2 flat testimonial record?

3 THE HEARING EXAMINER: Well, you know,
4 that's a very creative motion. I've never heard it
5 before. I've never seen it entertained. I mean, the
6 reason it's a demonstrative exhibit is it's not a part
7 of the record in any way, shape, or form.

8 I mean, there's a distinction between
9 demonstrative aids and exhibits that have enough of a
10 foundation to be made part of the record. So motion
11 denied. Nice try.

12 MR. WAYMEYER: Thank you.

13 (Empire Cross Exhibits 1 through 11
14 were marked for identification and
15 received into evidence.)

16 THE HEARING EXAMINER: Anything else?
17 It's 9:47. Do we have any other preliminary matters?

18 MR. RANKIN: I think we have another
19 matter, but I prefer to bring it up at another time.
20 I think --

21 MR. WAYMEYER: Well, I think we need to
22 bring it up now. Last night, after all of -- after
23 conferring per the Commission's request and reaching
24 an -- we reached a tentative agreement on time. That
25 was retraded. And after it being retraded, we agreed

1 to that.

2 And now, last night, after we all made
3 stipulations on the record in terms of buckets of time
4 to allow this to be concluded on Wednesday with time
5 for Commission questions and time for closing
6 argument, there's yet another attempt to retrade to
7 put more time into the Goodnight bucket.

8 We object strongly to that. Why we
9 have to retrade -- the stipulations could not have
10 been clearer in terms of the time buckets. And so
11 that's what he's alluding to, and we object to any
12 more time being moved around

13 THE HEARING EXAMINER: Mr. Rankin --

14 MR. RANKIN: We can address it. So
15 when we -- it's absolutely correct. We had understood
16 something different than we thought we had reached an
17 agreement on. So when we sent an email over and maybe
18 Mr. Jurgensen can put up the spreadsheet that shows
19 what we thought we intended.

20 And the bottom line is here,
21 Mr. Hearing Officer, is we are asking for one
22 additional hour so that we can cross most of these
23 witnesses. What we had proposed to counsel in our
24 email exchange was time for Goodnight to do its direct
25 and redirect.

1 We did not, unfortunately, understand
2 or apprehend that what this was going to do was going
3 to limit our time to actually cross OCD's witness. I
4 made that realization yesterday as I was considering
5 what was sent over.

6 And I raised the issue with
7 Mr. Waymeyer yesterday. I said: "Hey, Mr. Waymeyer.
8 Considering this is our understanding, is it also your
9 understanding?" He said: "No, it is not. I do not
10 agree." We asked for an additional hour.

11 And after yesterday, understanding from
12 the hearing officer that we had actually
13 undercalculated the amount of time, even through
14 Wednesday and we had some additional time on Thursday,
15 I didn't think it would be a substantial issue to ask
16 for one additional hour to make sure we had a fair
17 opportunity to cross these witnesses.

18 So that's where it stands. We just was
19 just asked for an additional hour. Did not adjust in
20 any way or affect Empire's time or any of the other
21 party's time. We just wanted a little more time to
22 make sure we had time to cross OCD's witness.

23 MR. WAYMEYER: May I respond very
24 briefly?

25 THE HEARING EXAMINER: Briefly.

1 MR. WAYMEYER: Yeah. So, again, first
2 and foremost, the Commission needs to be able to ask
3 its questions. Those are the most important
4 questions, and those have been the most focused and
5 relevant questions.

6 The reason we're in this time crunch is
7 the result of incredibly meandering cross-examinations
8 that looked far more like depositions than a
9 cross-examination. You've seen Empire's
10 cross-examinations have been to the point and tight.

11 And if we just -- let's just reality
12 check this time that we've got left. He has two
13 witnesses today, Preston McGuire on Monday, which is
14 likely to go into Tuesday. OCD has at least one
15 witness, possibly two.

16 This is an effort to just -- we agreed
17 to buckets and work within the buckets and allowing
18 sufficient time for commission questions. There's no
19 way we're going to get this done with an opportunity
20 for the closing arguments by monkeying with the time.

21 THE HEARING EXAMINER: Okay. I'm going
22 to hold you both to the times you specified. What I
23 have here is Empire agreed to a total of 13 and a half
24 hours; Goodnight agreed to a total of seven and a half
25 hours; and one and a half hours cumulative between

1 OCD, Rice, and Pilot for a total of 22 and a half
2 hours.

3 I'm going to hold you all to that.
4 There's a reason for it, and we're just going to have
5 to work within those time constraints.

6 MR. RANKIN: Mr. Hearing Officer,
7 understood. And I just want to make sure Mr. Moander
8 understands that, because I don't think he understood,
9 and I don't think Mr. Waymeyer understood that this
10 agreement was limiting OCD's ability to put on its
11 case, and that that would be the effect of this
12 agreement.

13 MR. WAYMEYER: And I want to make my
14 position clear. As part of the stipulation, we said
15 that those buckets were plus OCD having reasonable
16 time, so absolutely we do not contend that they were
17 in that bucket. My understanding is that the quote
18 unquote reasonable time they're asking for is 1.25,
19 and of course we have no problem with that.

20 THE HEARING EXAMINER: Mr. Moander,
21 what I have written down here is the one and a half
22 hours for others, which would be you, Rice, and Pilot.

23 MR. MOANDER: And from my perspective,
24 in order to get this moving forward, it is highly
25 likely I'm withdrawing one of my witnesses, because I

1 don't think they are going to do anything for any
2 parties or the Commission. That would leave my
3 primary expert, Mr. Gatz.

4 I think I've demonstrated I tend to be
5 in and out with witnesses, and my directs are frankly
6 no different. I would anticipate a maximum of an hour
7 on my direct, and I may even be able to shorten that
8 down with quick motions to admit resumes and things
9 like that in order to expedite.

10 Also, addressing my anticipation on
11 cross, despite the fact the next three Goodnight
12 witnesses have significant things to say to OCD, I
13 would be shocked if I end up taking a total of 90
14 minutes across all three of them.

15 I don't intend to spend lots of time,
16 you know, wrestling on nuance and stuff like that.
17 I've got some points I want to get in and score, and
18 that's it. So I will be running I think a tighter
19 ship than anybody thus far. Easy for me to do with
20 one witness.

21 So I think the bigger concern here is
22 going to be the cross examinations. I'm not clear on
23 what Empire may want to do with Mr. Gatz. My
24 suspicion is it'll be somewhat limited. And then
25 Goodnight will likely want some extensive time with

1 Mr. Gatz.

2 And if I were a betting man, which I'm
3 not, Dr. Ampomah is eagerly looking forward to having
4 an in-depth and lengthy discussion with Mr. Gatz.

5 THE HEARING EXAMINER: Okay. Well, I
6 didn't hear any objection from OCD or the interveners
7 yesterday to the one and a half hours --

8 MR. MOANDER: No. And I did not
9 object --

10 THE HEARING EXAMINER: -- to others, so
11 I'm going to hold you to the same agreement. You guys
12 agreed to the timeframes yesterday. Those are going
13 to be the timeframes.

14 MR. WAYMEYER: Thank you.

15 THE HEARING EXAMINER: Absent a truly
16 extraordinary or extenuating circumstances, and
17 hopefully there won't be any.

18 Anything further from the parties?

19 MR. WAYMEYER: Not from Empire.

20 MR. RANKIN: Nothing from Goodnight.

21 Thank you.

22 THE HEARING EXAMINER: All right.

23 MR. MOANDER: Nothing from OCD either.

24 THE HEARING EXAMINER: Thank you.

25 Rice?

1 MR. BECK: Nothing from Rice.

2 THE HEARING EXAMINER: Pilot?

3 MR. SUAZO: Nothing from Rice [sic].

4 Just to know that any questions that Pilot may ask are
5 going to be pretty limited probably to just one
6 witness and probably no more than five minutes,
7 Mr. Hearing Officer.

8 THE HEARING EXAMINER: Okay. Thanks
9 for the heads up.

10 Your next witness, Mr. Rankin?

11 MR. RANKIN: Thank you, Mr. Hearing
12 Officer. Next witness is Mr. Thomas Tomastik.

13 THE HEARING EXAMINER: Good morning,
14 Mr. Tomastik.

15 MR. TOMASTIK: Good morning.

16 THE HEARING EXAMINER: You know the
17 drill. If you'll raise your right hand, please.
18 WHEREUPON,

19 THOMAS TOMASTIK,
20 called as a witness and having been first duly sworn
21 to tell the truth, the whole truth, and nothing but
22 the truth, was examined and testified as follows:

23 THE HEARING EXAMINER: All right.

24 Mr. Rankin?

25 MR. RANKIN: Thank you, Mr. Hearing

1 Officer.

2 EXAMINATION

3 BY MR. RANKIN:

4 MR. RANKIN: Mr. Tomastik, will you
5 please state your name for the record.

6 MR. TOMASTIK: Thomas E. Tomastik.

7 MR. RANKIN: And by whom are you
8 employed and in what capacity?

9 MR. TOMASTIK: I'm employed by A-L-L
10 Consulting. I am chief geologist and regulatory
11 specialist.

12 MR. RANKIN: Have you previously
13 testified before the Commission?

14 MR. TOMASTIK: Yes. Approximately six
15 to eight times.

16 MR. RANKIN: And are you familiar with
17 the application filed by Goodnight in these
18 consolidated cases?

19 MR. TOMASTIK: Yes.

20 MR. RANKIN: And you're familiar with
21 the applications filed by Empire seeking to revoke
22 Goodnight's existing saltwater disposal wells?

23 MR. TOMASTIK: Yes.

24 MR. RANKIN: And is your education and
25 background included as an exhibit to your written

1 direct testimony?

2 MR. TOMASTIK: Yes.

3 MR. RANKIN: And does it outline that
4 you have a background and expertise in Safe Drinking
5 Water Act, underground injection control program, and
6 permitting?

7 MR. TOMASTIK: Yes.

8 MR. RANKIN: And regulation of
9 saltwater disposal wells?

10 MR. TOMASTIK: Yes.

11 MR. RANKIN: As well as carbon
12 sequestration and groundwater and fluid migration and
13 carbonate systems?

14 MR. TOMASTIK: Yes.

15 MR. RANKIN: And you also have
16 expertise in the evaluation of geochemistry issues as
17 it pertains to scaling and corrosion and oil and gas
18 injection operations?

19 MR. TOMASTIK: Yes.

20 MR. RANKIN: Have you conducted a study
21 of the history of production and operations at the
22 EMSU?

23 MR. TOMASTIK: Yes.

24 MR. RANKIN: And have you conducted a
25 study of the water encroachment from the edge water

1 around the EMSU and past and current geochemistry in
2 and around the EMSU?

3 MR. TOMASTIK: Yes.

4 MR. RANKIN: And are you familiar with
5 scaling issues and treatment in Class 2 injection
6 wells generally?

7 MR. TOMASTIK: Yes.

8 MR. RANKIN: And, in fact, were you not
9 previously a regulator of for State of Ohio overseeing
10 Class 2 injection operations?

11 MR. TOMASTIK: Yes.

12 MR. RANKIN: Have you also conducted
13 analysis of the history and factors affecting scaling
14 and corrosion in around the EMSU?

15 MR. TOMASTIK: Yes.

16 MR. RANKIN: And have you prepared
17 written rebuttal testimony in exhibits that are marked
18 as Exhibit C and Exhibit C1 through C27?

19 MR. TOMASTIK: Yes.

20 MR. RANKIN: Were the exhibits prepared
21 by you or compiled under your direction and
22 supervision?

23 MR. TOMASTIK: Yes.

24 MR. RANKIN: And any corrections or
25 changes to the testimony exhibits that were filed?

1 MR. TOMASTIK: No.

2 MR. RANKIN: Do you adopt the testimony
3 as your -- in your self-affirmed statement and
4 rebuttal statement that are marked as Exhibit C as
5 your sworn testimony today?

6 MR. TOMASTIK: Yes.

7 MR. RANKIN: Mr. Hearing Officer, I
8 would tender Mr. Tomastik as an expert witness in
9 petroleum geology, underground injection control
10 permitting of groundwater, and ejection wells; and has
11 been previously qualified as an expert in these fields
12 before the Commission.

13 THE HEARING EXAMINER: Any objection
14 from Empire?

15 MS. SHAHEEN: No objection.

16 THE HEARING EXAMINER: OCD?

17 MR. MOANDER: No objection.

18 THE HEARING EXAMINER: Rice?

19 MR. BECK: No objection.

20 THE HEARING EXAMINER: Pilot?

21 MR. SUAZO: No objection.

22 THE HEARING EXAMINER: He'll be so
23 recognized.

24 MR. RANKIN: Mr. Hearing Officer, I
25 would also at this time move the admission into

1 evidence of Mr. Tomastik's direct testimony and
2 rebuttal testimony and his attached Exhibits C1
3 through C21.

4 THE HEARING EXAMINER: Empire?

5 MS. SHAHEEN: No objection.

6 THE HEARING EXAMINER: OCD?

7 MR. MOANDER: No objection.

8 THE HEARING EXAMINER: Rice?

9 MR. BECK: No objection.

10 THE HEARING EXAMINER: Pilot?

11 MR. SUAZO: No objection.

12 THE HEARING EXAMINER: They'll be
13 admitted.

14 DIRECT EXAMINATION

15 BY MR. RANKIN:

16 MR. RANKIN: Mr. Tomastik, have you
17 been present for or did you listen to the summary
18 testimony, the cross examinations, and redirect of the
19 witnesses in this proceeding?

20 MR. TOMASTIK: Yes.

21 MR. RANKIN: Did you hear the direct
22 testimony and cross that has been conducted to date of
23 Goodnight's own witnesses as well?

24 MR. TOMASTIK: Yes.

25 MR. RANKIN: And did you prepare

1 summary slides reflecting your up-to-date opinions,
2 including any additional opinions formed as a result
3 of hearing that testimony and cross-examination?

4 MR. TOMASTIK: Yes.

5 MR. RANKIN: And did you prepare some
6 slides providing an overview of your testimony and
7 conclusions?

8 MR. TOMASTIK: Yes.

9 MR. RANKIN: Mr. Tomastik, I'll go
10 ahead and share my screen. If you would just walk
11 through at a very high level each of these slides so
12 we understand -- I'll direct you as we walk through
13 them -- what your opinions are and how they relate to
14 your testimony.

15 This first one, just give us an
16 overview of what topics you addressed -- Goodnight
17 asked you to address in your testimony.

18 MR. TOMASTIK: Yes. It's basically
19 addressing the issues of disagreement, water
20 encroachment, fractures in carbonate rocks, chemistry,
21 corrosion issues, the existence of the ROZ, the
22 allegations that the aids -- San Andres SWDs were in
23 communication with the Capitan Reef, the monitoring
24 wells in the Capitan Reef near the EMSU, well
25 integrity issues, and regulatory concerns and

1 solutions.

2 MR. RANKIN: Okay. Next slide here, I
3 think, gets you into the first top topic of
4 discussion, edge water encroachment into the EMSU.
5 Just give us a brief overview of the research you did
6 and the evaluation of the history of this issue in the
7 EMSU.

8 MR. TOMASTIK: Basically, I researched
9 all the historical publications, both published by the
10 Bureau of Mines and the New Mexico Bureau of Mines and
11 Geologic Survey. There's been documentation since the
12 1930s of water encroachment into the EMSU.

13 There's also states that it's both a
14 solution gas drive and a partial water drive. You
15 have Chevron publications from the 1990s and 2000s
16 that continue to show water encroachment from the
17 west, the southwest.

18 There is very strong evidence that with
19 water encroachment from the Goat Seep aquifer, which
20 is part of the Capitan Reef complex into the Grayburg
21 formation when the Grayburg production created a coat
22 of depression. The fracture systems in the Grayburg
23 and the carbonate rocks do not extend hundreds of feet
24 from in Goodnight's injection wells into the Grayburg.

25 There's documented evidence of high

1 water flows in the Penrose Zone 1 that Chevron
2 documented. There is no real evidence showing plumes
3 of water coming up from the San Andres, and there's no
4 communication for hundreds of feet through those
5 formations.

6 Additionally, there's historic
7 publication documentation of wells being drilled
8 deeper into the San Andres in the 1930s. One document
9 indicates at least 500 feet into the San Andres.

10 MR. RANKIN: Before I leave this slide,
11 Mr. Tomastik, real quick. On the third-to-last slide,
12 we talk about Chevron documented high-water flows.
13 Explain to me the significance of that finding and how
14 it relates to concerns about -- regulatory concerns
15 about containment of any ROZ project in the Grayburg
16 and also potential additional source of water in the
17 EMSU.

18 MR. TOMASTIK: Yes. The EMSU
19 Number 139 was one of the ones that was on the bubble
20 map Mr. West presented with over a million barrels of
21 water produced, and I was able to find sundry notice
22 that indicated that Chevron had shown that the water
23 influx was coming through the Penrose Zone 1, which is
24 indicative of water migration higher up and no
25 confinement.

1 That actually goes back through 2000
2 Chevron order that was asked for for the pressure
3 increase. That was objected to due to alleged
4 migration of water flood fluid moving off location and
5 into the shallower reservoir.

6 MR. RANKIN: What does this next slide
7 show and how does it relate to your analysis about the
8 encroachment of edge water into the EMSU?

9 MR. TOMASTIK: This was a rebuttal
10 exhibit from Mr. West, N18, and what I've highlighted
11 is -- is it shows both actually from Mr. -- or
12 Dr. Lindsay's [ph] testimony exhibit that there is
13 edge water coming in from the Goat Seep and into the
14 Grayburg reservoir. That's well documented both by
15 those experts.

16 MR. RANKIN: Explain to us what this
17 next slide shows, especially pointing out the red
18 arrows and what it relates to in terms of your opinion
19 about vertical migration of fluids.

20 MR. TOMASTIK: This is an example, and
21 I've done extensive work when I was with the Ohio
22 Department of Natural Resources during groundwater
23 investigations of fractured carbonate rocks.

24 And what is very evident that I've
25 learned and experienced over my career doing hundreds

1 of groundwater investigations related to fractured
2 carbonate rocks is fluid migration vertically moves
3 upward, but then hits bedding planes that serve as
4 horizontal barriers to flow.

5 As you can see in this photograph, the
6 red arrows are pointing to water actually flowing out
7 horizontally from a bedding plane that's actually
8 indicating that it's -- it's a barrier to continued
9 flow upwards.

10 You can see typically driving on the
11 highway along outcrops if you look at the rocks or the
12 road cuts, you can see water flowing out of the rocks
13 when it's rained or icicles are typically horizontally
14 indicating that that's where the barrier to the flow
15 has stopped.

16 So it's -- it's -- and Mr. Knight has
17 testified to this that bedding planes serve as a
18 barrier to vertical flow.

19 MR. RANKIN: And that would include
20 both tight rock, low vertical permeability rock, and
21 also very high permeability rock intervals; is that
22 right?

23 MR. TOMASTIK: Yes.

24 MR. RANKIN: Okay. What does this next
25 slide show? And explain what it relates to your

1 analysis about the potential for containment within
2 the EMSU of an ROZ and potential source of additional
3 water into the EMSU.

4 MR. TOMASTIK: Yeah. This is -- this
5 is the Chevron sundry notice that I referenced on my
6 slide before of the high water flows from the Penrose
7 Zone 1 in EMSU 139 that was documented in 1988.

8 Chevron basically said this well was a
9 candidate for a liner due to a high water production
10 from the Penrose Zone 1, and that's one of the wells
11 that was on Mr. West's bubble map that showed water
12 production over a million barrels.

13 MR. RANKIN: This next slide here, I
14 think we're moving to a new topic. If you would just
15 give the Commission an overview of what you have to
16 say here about geochemistry issues and potential
17 corrosion and scaling issues in the EMSU.

18 MR. TOMASTIK: So basically the
19 corrosion and scaling issues have been documented in
20 EMSU since 1940s. There -- there's documentation that
21 the Grayburg oil itself is sour oil with sulfur
22 contained in it.

23 There's chemistry data both from 1966
24 that shows hydrogen sulfide levels that are fairly
25 high in the Grayburg, which is a well-known corrosive

1 agent.

2 There's also been -- with the injection
3 of the 340 million barrels of San Andres water for
4 makeup water for the waterflood has increased the
5 corrosion and scaling issues in the EMSU water flood.

6 Chevron did extensive chemical analysis
7 of this data in the early 1990s, and they clearly
8 showed variability and chemistry changes not only in
9 chlorides and sulfide concentrations from year to
10 year, so which shows that there's no geochemical
11 fingerprinting constituent that can be used in EMSU,
12 especially not chloride concentrations.

13 Chevron and XTO had extensive
14 geochemical treatment programs to try to address the
15 scaling issues and the corrosion. Empire has really
16 provided very little detail of any kind of chemical
17 treatment program.

18 And they provided no physical evidence,
19 photographs, documents showing corrosion of downhole
20 equipment, wellheads, fittings, pipelines, or pumping
21 equipment that allegedly was caused by injection
22 operations by Goodnight.

23 MR. RANKIN: Mr. Tomastik, before I
24 leave this slide, I want to make sure something is
25 very clear. I'm going to ask you two questions.

1 It's your understanding based on the
2 representation at the time the waterflood was filed
3 with the commission that the applicant represented to
4 the Commission that the source of waterflood water in
5 the San Andres was, in fact, compatible with the
6 Grayburg formation fluids; is that correct?

7 MR. TOMASTIK: Yes.

8 MR. RANKIN: And then subsequently, was
9 it represented in published papers that the San Andres
10 water was known, in fact, to be incompatible with the
11 Grayburg; correct?

12 MR. TOMASTIK: Yes.

13 MR. RANKIN: And, in fact, as a result
14 of that incompatibility, what -- did that
15 relate -- did that give rise to the scaling that
16 Chevron encountered during its operations in
17 subsequent --

18 MR. TOMASTIK: It -- it furthered
19 the -- the corrosion and scaling problem that they
20 were already addressing.

21 MR. RANKIN: Thank you. This next
22 slide here addresses your overview of the ROZ issue.
23 If you'd just give a brief overview of, in your
24 opinion, what the evidence shows about a potential for
25 an ROZ here.

1 MR. TOMASTIK: Yep. Basically, XTO
2 drilled several wells in 2005 as an effort to allege
3 it produced the -- the San Andres oil. All three
4 wells swapped uneconomic and not-paying quantities of
5 oil.

6 Additionally, none of the six water
7 supply wells that Chevron drilled that were swapped
8 and pumped any oil was reported to be from those
9 tests. In fact, no oil has been reported or
10 documented during the withdrawal of at least 340
11 million barrels of makeup water from the San Andres
12 since the 1980s.

13 And -- and pumping the San Andres
14 would've been a primary oil production attempt. This
15 is not a greenfield ROZ. It has been produced, and
16 basically very minor, if any, oil was -- was
17 documented being produced.

18 And the depressurization of the
19 San Andres during that time of dewatering would've had
20 to produce some oil if it was mobile at that point,
21 and there's no indications of any accumulations of
22 economic or paying quantities of oil.

23 MR. RANKIN: On to the next topic here,
24 Mr. Tomastik. This next slide provides an overview of
25 your analysis and opinions regarding the potential of

1 communication between Goodnight's disposal zone and
2 the overlying formation and reservoir. Will you
3 please review your determinations as to that topic.

4 MR. TOMASTIK: Yes. Basically
5 publications by multiple authors clearly shows the
6 San Andres is not in geologic or hydrogeologic
7 communication with Capitan Reef complex.

8 The eastern section of the reef, based
9 on Lewis Land's recent work shows that concentrations
10 are above 10,000 total dissolved solids, so it's not a
11 underground source of drinking water of USDW.

12 The existence of the Hobbs channel is
13 seriously in doubt as a geologic feature or a
14 hydrodynamic feature that was first identified by
15 Hiss [ph] based on chloride concentrations that were
16 improperly contoured and then cited in Wilson and
17 Hollands Groundwater Protection Association 1984
18 publication.

19 That, again, was based on chlorides.
20 There was no actual groundwater measurements or a
21 potential metric surface mapping to determine
22 sub-surface groundwater flow direction.

23 And Jones in 2016 basically shows his
24 elimination of the Hobbs channel and the Capitan Reef
25 complex is in communication with the Grayburg and

1 possibly the Penrose, but not in communication with
2 the San Andres injection zone of Goodnight's wells.

3 MR. RANKIN: And, in fact,
4 Mr. Tomastik, Empire's experts agree on this point;
5 correct?

6 MR. TOMASTIK: Yes.

7 MR. RANKIN: Next slide here relates to
8 your comment about or analysis of the Jones work.
9 Just briefly explain what this shows with respect to
10 the Jones paper in 2016.

11 MR. TOMASTIK: Yes. This is -- this is
12 from OCD Exhibit Number 19, and this is from the Jones
13 paper. As we can see on the left, there is flow up to
14 the top right towards Hobbs, which is what they were
15 calling the Hobbs channel of Hiss in -- in 1980.

16 And then Jones altered that after the
17 development of Pecos River Complex and changed that
18 flow direction in -- in the groundwater, basically
19 eliminating the Hobbs channel as a geologic or
20 hydrodynamic feature.

21 MR. RANKIN: And then this next comment
22 addresses some aspects of OCD's proposal for
23 monitoring. If you would just give us a brief
24 overview of your opinion about what the fluid levels
25 reflect in terms of potential communication with the

1 San Andres based on the pressures you've evaluated
2 base.

3 MR. TOMASTIK: Basically, in 1966, the
4 United States Geologic Survey took over and plugged
5 back a number of existing deep oil and gas wells,
6 plugging them back into the Capitan Reef complex to
7 perform fluid-level monitoring.

8 Basically, they -- they monitored the
9 fluid levels from about 1966 to 1980. Then the
10 monitoring cease. And then they did come back and
11 start monitoring again in 2012 to 2017, but there was
12 no indication that there was communication between the
13 Capitan Leaf complex and Goodnight's San Andres SWDs.

14 MR. RANKIN: Next slide here,
15 Mr. Tomastik, relates to your assessment of the
16 potential for the EMSU to qualify for CO2 injection
17 based on the existence of the well boards, quality of
18 the wellboards, and whether any of the geology would
19 suffice to seal CO2 in place; correct?

20 MR. TOMASTIK: Yes.

21 MR. RANKIN: Just give us a brief
22 overview of your assessment.

23 MR. TOMASTIK: So, basically, I looked
24 at -- at the regulatory issues, looked at a lot of
25 well files, sundry notices, Chevron's published papers

1 in 1991, 1996, and 1998.

2 There's a number of documented casing
3 and liner leaks, cement squeeze jobs, fluid migration
4 to the surface, historic frack jobs, flood backs to
5 shallow reservoirs into the Queen, the Yates.

6 There's -- and -- and it clearly shows
7 that there's well integrity issues, which I'll just
8 talk about a little bit more on the next slide coming
9 up.

10 The injection of CO2 becomes a far
11 greater risk to migration into the underground sources
12 of drinking water into the surface with injection of
13 CO2 versus the injection of fluid CO2.

14 After it reaches a depth of less than
15 2,600 feet, it goes from super critical fluid to a
16 gas, gas obviously having a greater affinity migrate
17 to the USDWs and to the surface.

18 And Empire has not identified what
19 confining zones they're going to have to prevent
20 vertical migration of CO2 out of the ROZ that
21 potentially could impact the underground sources of
22 drinking water, which is the primary goal of the
23 underground injection control program.

24 MR. RANKIN: Next slide here, just give
25 us a brief overview of what this shows relating to

1 your concerns about potential for well integrity
2 issues across the EMSU.

3 MR. TOMASTIK: So this is from Chevron,
4 Tracy Love, et al., 1998 SPE paper, and this is us
5 showing some of the conformance focus issues they've
6 had. There's a list of 26 wells on this little chart
7 here.

8 22 of the wells have showed squeeze
9 jobs, acid communications with other parts of the
10 formation behind pipe, integrity issues, leaks.
11 This -- this is -- becomes a serious concern when
12 you're going from water flooding to CO2 tertiary
13 injection.

14 The integrity, the fact that CO2 as
15 far -- going to be corrosive, not only to steel pipe,
16 but also to Portland cements, presents a higher risk
17 for loss of integrity confinement into the injection
18 interval.

19 MR. RANKIN: And, Mr. Tomastik, as it
20 relates to Empire's proposal, whether it's a
21 continuous CO2 injection or a WAG, is there a
22 difference in your opinion about the concerns with the
23 quality of these wells, whether it's WAG or continuous
24 CO2?

25 MR. TOMASTIK: No.

1 MR. RANKIN: Give us an overview of
2 your conclusions based on your assessment and
3 evaluation.

4 MR. TOMASTIK: So, basically, water
5 encroachment is well documented coming from the Goat
6 Seep, the Capitan Reef complex. There's no proof of
7 vertical fracturing communication between the Grayburg
8 and the San Andres SWDs of Goodnight. That
9 would've -- it needed to exceed hundreds of feet of
10 vertical height to reach the Grayburg saltwater
11 disposal zones.

12 Dr. Lindsay [ph] testified the maximum
13 vertical height he saw in the core was 1 to 3 feet.
14 I've gone back and looked at Dr. Lindsay's [ph] PhD
15 dissertation of his outcrop photos from the Guadalupe
16 Mountains of showing hundreds of feet of Grayburg and
17 San Andres exposure in the rocks.

18 And there's no evidence of hundreds of
19 feet of vertical fracture extension at the surface
20 where actually fractures are more likely to be open;
21 whereas in the subsurface, fractures tended to be
22 closed or mineralized with a separate mineral as a
23 secondary mineralization.

24 Corrosion has been historically
25 documented in the MSU. There's been no -- no evidence

1 provided by Empire that the corrosion of the injection
2 from Goodnight's SWDs has caused any -- any corrosion
3 issues. They provided no documentation or evidence of
4 corrosion.

5 Their chlorides -- and I've dealt with
6 chloride injection across the United States.

7 Chlorides is not a viable corrosion issue as much as
8 CO2 or microbial bacteria corrosion or hydrogen
9 sulfide corrosion or barium sulfide scale formations.

10 Additionally, Goodnight treats all of
11 their injection fluids with a very robust treatment
12 system that's documented in my self-affirmed statemen.
13 On the ROZ, we've had no confirmation of paying
14 quantities of oil, even though 340 million barrels of
15 water have been withdrawn and depressurized.

16 The formation, we would've expected
17 some kind of oil production injection operations by
18 Goodnight in the San Andres, and their injection zone
19 is not in communication with the Capitan Reef complex.

20 And then it's well documented on the
21 eastern portion of the Capitan Reef that the total
22 dissolved salts exceed 10,000 milligrams per liter, so
23 they're not a USDW.

24 The well integrity issues in the EMSU
25 are well documented. And if CO2 injection occurs,

1 they prevent far greater risk to CO2 migrating out of
2 the ROZ injection zone, converting to gas, and
3 potentially contaminating underground sources of
4 drinking water and possibly reaching the surface.

5 MR. RANKIN: Thank you, Mr. Tomastik.

6 Mr. Hearing Officer, I have no further
7 questions of Mr. Tomastik and make him available for
8 cross-examination.

9 THE HEARING EXAMINER: Okay. Thank
10 you, Mr. Rankin. It's almost 10:20 a.m. Let's take
11 our morning break and come back at 10:35.

12 THE REPORTER: We are off the record at
13 10:35.

14 (Off the record.)

15 THE REPORTER: All right. We are back
16 on -- we are back on the record. The time is -- y'all
17 are an hour behind; right? Yeah. 10:35 a.m.

18 MS. HARDY: Thank you.

19 CROSS-EXAMINATION

20 BY MS. HARDY:

21 MS. HARDY: Hello, Mr. Tomastik.

22 MR. TOMASTIK: Hello.

23 MS. HARDY: I just want to be sure that
24 it's very clear for the record what you are testifying
25 about and what you're background is. You don't have a

1 degree in any type of engineering; correct?

2 MR. TOMASTIK: I do not have a degree
3 in engineering, but I've done a lot of petroleum
4 engineering work in my career.

5 MS. HARDY: Okay. And if you would
6 just answer the question I've asked, I think this will
7 go faster.

8 You're not licensed as an engineer in
9 any state, are you?

10 MR. TOMASTIK: No.

11 MS. HARDY: And you don't have the
12 ability to stamp documents with a professional
13 engineering stamp, do you?

14 MR. TOMASTIK: No.

15 MS. HARDY: And you've never been
16 qualified as an expert in petroleum engineering by any
17 tribunal; correct?

18 MR. TOMASTIK: No.

19 MS. HARDY: And your work as a
20 petroleum geologist focuses on injection wells;
21 correct?

22 MR. TOMASTIK: No. I've done geologic
23 work in groundwater investigations, injection wells.
24 I drilled 26 oil and gas wells in the '80s. I
25 converted six wells to Class 2 injection. I've

1 plumbed up wellheads. So I've done about every aspect
2 of the oil and gas industry in my career.

3 MS. HARDY: And let me just share,
4 then, your CV that is attached to your testimony.
5 I've looked at the matters that it includes. And I'm
6 looking -- do you see my screen?

7 MR. TOMASTIK: Yes.

8 MS. HARDY: Here starting at page 2,
9 you list relevant experience; correct?

10 MR. TOMASTIK: Yes. That's my last
11 relevant experience in my over ten years with ALL
12 Consulting. My other experience below that has 25 and
13 a half years with the Ohio Department of Natural
14 Resources Division of Oil and Gas and then six years
15 as a consulting geologist drilling and completing oil
16 and gas wells and converting wells to injection in
17 Ohio.

18 MS. HARDY: And, Mr. Tomastik, I'm
19 scrolling through here, and I think, you know, going
20 from about page 2 to page 13 of your CV, you list
21 relevant experience; correct?

22 MR. TOMASTIK: Yes.

23 MS. HARDY: And I've actually looked at
24 those, and I think everything but about five of them
25 relates to injection; is that fair?

1 MR. TOMASTIK: A lot of it does, yes.

2 MS. HARDY: Okay. And you've never
3 worked on an enhanced oil recovery project in
4 New Mexico, have you?

5 MR. TOMASTIK: No.

6 MS. HARDY: And you've never been the
7 lead geologist on a carbon sequestration project, have
8 you?

9 MR. TOMASTIK: Not a lead geologist,
10 but I've been involved on a national level since about
11 2005 with all the major oil companies and also was
12 instrumental with the major companies, working with
13 US EPA --

14 MS. HARDY: Mr. Tomastik, I'm going to
15 jump in here, because --

16 And I'm going to move to strike that.

17 My question was, you've never been the
18 lead geologist on a carbon sequestration projection --

19 MR. TOMASTIK: No.

20 MS. HARDY: -- and I think your answer
21 is yes; correct?

22 MR. TOMASTIK: I have not, no.

23 MS. HARDY: Okay. Thank you. In none
24 of the matters identified on your CV involve
25 development of a residual oil zone; correct?

1 MR. TOMASTIK: Correct.

2 MS. HARDY: And you've never worked on
3 any residual oil zones anywhere; correct?

4 MR. TOMASTIK: Correct.

5 MS. HARDY: You've never been involved
6 in converting a waterflood project to a CO2 project,
7 have you?

8 MR. TOMASTIK: I regulated and
9 permitted a huff and puff that Mr. Meltzer [ph] was
10 involved with back in the mid-2000s.

11 MS. HARDY: Okay. And do you remember
12 when you were deposed in this case?

13 MR. TOMASTIK: Yes.

14 MS. HARDY: And that was on
15 December 10, 2024?

16 MR. TOMASTIK: Yes.

17 MS. HARDY: Okay. And let's look at
18 page 6 here of your testimony, starting at line 18,
19 and I'm going to read this. The question is, "Have
20 you ever been involved in a conversion from waterflood
21 to CO2"; and your answer was, "No." Did I read that
22 correctly?

23 MR. TOMASTIK: Yes. I've not been
24 involved, but I permitted one.

25 MS. HARDY: Okay. Thank you. And

1 you've never designed a waterflood, have you?

2 MR. TOMASTIK: No.

3 MS. HARDY: As a geologist, you're not
4 giving opinions here on economics, are you?

5 MR. TOMASTIK: No.

6 MS. HARDY: Okay. You've testified for
7 Goodnight in all of its New Mexico SWD hearings;
8 correct?

9 MR. TOMASTIK: Yes.

10 MS. HARDY: You're familiar with
11 New Mexico laws, rules, and regulations that apply to
12 injection wells; correct?

13 MR. TOMASTIK: Yes.

14 MS. HARDY: And wouldn't that include
15 division and commission orders that govern injection
16 and production in the area where an injection well
17 will be located?

18 MR. TOMASTIK: That was typically not
19 my part of the work on completing C108s. Typically
20 Nate Alleman or Oliver Seekins would've done that kind
21 of work.

22 MS. HARDY: Let's talk for a minute
23 about your involvement in this case. You consulted
24 with Preston McGuire in preparing your testimony;
25 correct?

1 MR. TOMASTIK: Excuse me?

2 MS. HARDY: You consulted with Preston
3 McGuire in preparing your testimony that you've
4 submitted; correct?

5 MR. TOMASTIK: I've had discussions
6 with both the attorneys and Preston McGuire. But
7 Preston McGuire did not, you know, basically write any
8 of my testimony, no.

9 MS. HARDY: Well, you consulted with
10 him, didn't you?

11 MR. TOMASTIK: I had discussions with
12 him, yes.

13 MS. HARDY: Okay. And Mr. McGuire is
14 employed by Goodnight; correct?

15 MR. TOMASTIK: Yes.

16 MS. HARDY: And you met with him three
17 to five times about your testimony; right?

18 MR. TOMASTIK: I don't know how many
19 times. Several.

20 MS. HARDY: Okay. And he reviewed
21 drafts of your testimony, and he gave you input;
22 correct?

23 MR. TOMASTIK: My drafts went through
24 the attorneys, so I don't know.

25 MS. HARDY: And let me just pull up

1 here -- and I'm looking at page 13 of your deposition
2 testimony. Starting at line 10, you stated that you
3 had meetings with Mr. McGuire; correct?

4 MR. TOMASTIK: Yes.

5 MS. HARDY: Okay.

6 MR. TOMASTIK: With -- with the
7 attorneys.

8 MS. HARDY: Right. And then here, at
9 line 19, you stated that you probably met with them
10 three to five times; correct?

11 MR. TOMASTIK: That's probably
12 accurate.

13 MS. HARDY: Okay. And then you go on
14 to state that you submitted drafts of your statement
15 for approval and discussion; right?

16 MR. TOMASTIK: Yes.

17 MS. HARDY: Okay. And how many times
18 have you talked with Mr. McGuire since you submitted
19 your testimony?

20 MR. TOMASTIK: Several.

21 MS. HARDY: You don't have a range?

22 MR. TOMASTIK: No.

23 MS. HARDY: Okay. You didn't do any
24 original work on the geology in this case, did you?

25 MR. TOMASTIK: No.

1 MS. HARDY: You didn't prepare any
2 cross-sections; correct?

3 MR. TOMASTIK: No.

4 MS. HARDY: You relied on information
5 your received from Mr. McGuire; correct?

6 MR. TOMASTIK: Yes.

7 MS. HARDY: And you didn't do any
8 independent evaluation regarding whether there is a
9 residual oil zone within the San Andres in the EMSU,
10 did you?

11 MR. TOMASTIK: No.

12 MS. HARDY: Let's talk about your
13 opinions a little bit on water encroachment, and I
14 want to pull up the slide that you showed earlier
15 during your summary. I believe it is your Slide
16 Number 6. Can you see that there?

17 MR. TOMASTIK: Yes.

18 MS. HARDY: Let me enlarge it. Okay.
19 And my understanding of your summary
20 was that this --

21 THE REPORTER: Can we go off the
22 record?

23 THE HEARING EXAMINER: I'm sorry. What
24 was that?

25 THE REPORTER: Can we go off the

1 record?

2 UNIDENTIFIED SPEAKER: The court
3 reporter wants to go off the record.

4 THE HEARING EXAMINER: Okay. Madam
5 Court Reporter, what's going on?

6 THE REPORTER: I'm having tech issues.
7 It's not registering any -- any volume or -- or
8 language. It just stopped --

9 MS. HARDY: She said she's having her
10 technical issues, but --

11 THE HEARING EXAMINER: Okay.

12 THE REPORTER: I apologize. We are off
13 the record at 10:44.

14 (Off the record.)

15 THE REPORTER: We are back on the
16 record. The time is 10:46 a.m.

17 THE HEARING EXAMINER: You want to
18 repeat that question, Ms. Hardy, please.

19 MS. HARDY: I'm not sure what my
20 last -- I think he answered my last question.

21 UNIDENTIFIED SPEAKER: Yeah. You
22 didn't ask. You were bringing this up.

23 THE HEARING EXAMINER: Oh, okay. All
24 right. Go ahead, please proceed.

25 MS. HARDY: Okay. Thank you.

1 Okay. Mr. Tomastik, during your
2 summary, you testified regarding this Slide 6 that
3 references the 139 well, the M2 139. And I think
4 you -- my understanding of your testimony was that it
5 shows evidence of high water flows from the Penrose;
6 right?

7 MR. TOMASTIK: Correct.

8 MS. HARDY: And I think you referenced
9 the bubble map that was provided by Mr. West --

10 MR. TOMASTIK: Correct?

11 MS. HARDY: And the location of the
12 139 well?

13 MR. TOMASTIK: Yes.

14 MS. HARDY: Okay. And my understanding
15 was that you were stating that this 139 well, was
16 located in the middle of the bubble map and shows high
17 water flows from the Penrose; is that correct --

18 MR. TOMASTIK: I did not say where it
19 was located. I said based on my recollection of
20 writing down the information from the bubble map of
21 Mr. West's testimony that that well produced over a
22 million barrels of water.

23 MS. HARDY: Okay. And this document
24 here, it's difficult to read, but it looks like -- I
25 guess you can see it there at the bottom. The date is

1 1988; correct?

2 MR. TOMASTIK: Yes.

3 MS. HARDY: Okay. And I'm going to
4 show Mr. West's bubble map, which has been admitted
5 into evidence. And if you look here, the 139 well is
6 over here where I'm denoting with my cursor. Can you
7 see that?

8 MR. TOMASTIK: Yes.

9 MS. HARDY: Okay. And then the 239
10 well is here more in the center where I'm now marking
11 with my cursor; is that correct?

12 MR. TOMASTIK: Yes.

13 MS. HARDY: Okay. So the 139 is
14 located to the west; correct?

15 MR. TOMASTIK: Yes.

16 MS. HARDY: Okay. And Empire has
17 agreed, hasn't it, that there is some edge water
18 migration to the east --

19 MR. TOMASTIK: Yes.

20 MS. HARDY: Okay.

21 MR. RANKIN: Ms. Hardy, just for my
22 benefit, which exhibit was this that was admitted? I
23 can't -- I don't recall the number.

24 MS. HARDY: I actually don't have the
25 number off the top of my head, Mr. Rankin, but it was

1 in Mr. West's redirect.

2 MR. RANKIN: Okay.

3 MS. HARDY: Thank you.

4 In your testimony -- and I can pull
5 that up if you'd like -- at page 8, you state there
6 was a low porosity and low permeability barrier at the
7 top of the San Andres; correct?

8 MR. TOMASTIK: Yes.

9 MS. HARDY: You didn't actually pick
10 the top of the San Andres, did you?

11 MR. TOMASTIK: No.

12 MS. HARDY: You relied on Preston
13 McGuire's pick?

14 MR. TOMASTIK: Yes.

15 MS. HARDY: Isn't it true that in some
16 locations, Goodnight has determined that the top of
17 the San Andres is below the Lovington Sand?

18 MR. TOMASTIK: I really didn't evaluate
19 that. I was evaluating confinement of their injection
20 zone and whether there was a confining interval above
21 the injection interval.

22 MS. HARDY: And at your deposition, you
23 stated that you had never heard of the Lovington Sand;
24 correct?

25 MR. TOMASTIK: That's true.

1 MS. HARDY: And you state in your file
2 testimony that there's no evidence of vertical
3 fractures extending from the Grayburg into the
4 San Andres; correct?

5 MR. TOMASTIK: I said there is no -- no
6 evidence of it extending hundreds of feet from the
7 Grayburg into Goodnight's saltwater injections zone.

8 MS. HARDY: And here I've pulled up
9 page --

10 THE HEARING EXAMINER: Madam Court
11 reporter, are we having issues?

12 UNIDENTIFIED SPEAKER: Mr. Hearing
13 Examiner, taking --

14 THE HEARING EXAMINER: Okay.

15 MS. HARDY: Okay. Thank you. That
16 seems to be resolved now.

17 Mr. Tomastik, I've pulled up your
18 direct testimony, and I'm looking at page 8 here. And
19 you state "There is no evidence of vertical fractures
20 extending from the Grayburg into the San Andres and no
21 evidence of fluids migrating between the formations."
22 Is that what your testimony states?

23 MR. TOMASTIK: That was my original
24 self-affirmed statement, yes.

25 MS. HARDY: Okay. And you didn't do a

1 geomechanical fracture study in this case, did you?

2 MR. TOMASTIK: No.

3 MS. HARDY: Okay. Regarding chemistry
4 and corrosion, you don't have a degree in chemistry;
5 correct?

6 MR. TOMASTIK: No.

7 MS. HARDY: And have you ever been
8 responsible for a chemical program in a producing
9 field?

10 MR. TOMASTIK: I have worked with a
11 number of my clients and with ChemTreat. ChemTreat is
12 the second largest chemical treatment company in the
13 United States and has been involved in the oil and gas
14 industry since probably 2015, 2016.

15 And I've worked with them with a number
16 of clients, helping them develop a treatment program
17 to ensure that the injection fluids are not causing
18 downhole plugging or scaling issues or corrosion.

19 MS. HARDY: Have you ever done a
20 geochemical fingerprinting analysis?

21 MR. TOMASTIK: I've done analysis,
22 and -- and I've done groundwater sampling analysis
23 when I was at the Ohio Division of Oil and Gas. And
24 I -- so I'm aware of sampling protocols, chain of
25 custody commands, and -- and have reviewed and

1 fingerprinted when I do have a constituent that can be
2 used as a -- as a fingerprinting mechanism.

3 MS. HARDY: So is the answer to my
4 question yes? That you have done a geochemical
5 fingerprinting analysis? Or that you haven't --

6 MR. TOMASTIK: I have not done a
7 laboratory geo-fingerprinting analysis, but I have
8 testified on geochemical fingerprinting in the
9 tall -- the K&H Partners litigation from several years
10 ago.

11 MS. HARDY: Okay. And you didn't
12 obtain a geochemical fingerprinting analysis here, did
13 you?

14 MR. TOMASTIK: I did no -- no sampling,
15 no.

16 MS. HARDY: Okay. Goodnight is
17 injecting produced water from the Delaware Basin into
18 the San Andres; correct?

19 MR. TOMASTIK: Yes.

20 MS. HARDY: And the water is from other
21 leases; correct?

22 MR. TOMASTIK: Yes.

23 MS. HARDY: And formations other than
24 the San Andres?

25 MR. TOMASTIK: Yes.

1 MS. HARDY: And those include the Bone
2 Spring and the Wolfcamp; right?

3 MR. TOMASTIK: Yes.

4 MS. HARDY: The produced water would
5 include frack fluid, wouldn't it?

6 MR. TOMASTIK: It would be some
7 intermixing of frack fluids.

8 MS. HARDY: And the TDS of the injected
9 water is higher than the San Andres formation water;
10 correct?

11 MR. TOMASTIK: Yes.

12 MS. HARDY: And Goodnight's injected
13 water also has higher salinity than the San Andres
14 water; correct?

15 MR. TOMASTIK: Yes.

16 MS. HARDY: Your testimony doesn't
17 discuss strontium sulfate scale, does it?

18 MR. TOMASTIK: No.

19 MS. HARDY: And you didn't perform a
20 water compatibility study, did you?

21 MR. TOMASTIK: No.

22 MS. HARDY: Are you aware that
23 Goodnight had to rework its rhino [ph] well?

24 MR. TOMASTIK: I think it's been
25 brought up somewhere in testimony. But I'm not

1 familiar with it, no.

2 MS. HARDY: So you don't know whether
3 that reworking was necessary due to scale?

4 MR. TOMASTIK: I do not know.

5 MS. HARDY: Okay. Regarding the
6 existence of the San Andres residual oil zone,
7 paragraph 64 of your testimony states the water supply
8 wells would've produced oil if a ROZ exists in the
9 San Andres; correct?

10 MR. TOMASTIK: Typically, when
11 you -- when you've depressurized a reservoir to the
12 point where gas starts coming out of solution, some
13 oil is produced.

14 And I actually used an example from
15 Oklahoma from the hunton limestone where they've
16 actually had depressurized a reservoir and then
17 produced hundreds of thousands of barrels of water a
18 day and started making oil from that zone after the
19 fact.

20 So you would expect to see some movable
21 oil from the depressurization of the ROZ when you
22 withdrew 340 million barrels of water out of the
23 reservoir.

24 MS. HARDY: Okay. And you have no idea
25 whether there is a ROZ at the top of the San Andrews,

1 do you?

2 MR. TOMASTIK: I've not looked into
3 that, no.

4 MS. HARDY: Okay. And I think as
5 you've already testified, you've never been involved
6 in a tertiary recovery project to produce a ROZ;
7 correct?

8 MR. TOMASTIK: No.

9 MS. HARDY: And regarding the hunton
10 limestone that you just mentioned -- and that is
11 mentioned here in your testimony -- that didn't
12 involve a ROZ, did it?

13 MR. TOMASTIK: I'm not aware if it did
14 or not. I didn't do -- look at that.

15 MS. HARDY: And regarding your
16 testimony and your summary on well integrity issues in
17 the EMSU, again, you're not an engineer; correct?

18 MR. TOMASTIK: No.

19 MS. HARDY: Let me just pull up the
20 slide I wanted to ask you about here, and I'm looking
21 here at your Slide 13.

22 And before I ask you about that, isn't
23 it true that a professional engineer stamp would be
24 required for a Class 2 injection well design?

25 MR. TOMASTIK: Some states -- lots of

1 states do not require. Class 1 injection in some
2 states do require or Class 6, but a lot of
3 states -- New Mexico does not require a PE stamp on a
4 Class 2 application.

5 MS. HARDY: Okay. And here on your
6 Slide 13, you have no idea what well reworking would
7 be done to convert the wells in EMSU to a CO2 project,
8 do you?

9 MR. TOMASTIK: I have not seen Empire's
10 plan for reworking of the wells in the EMSU.

11 MS. HARDY: Okay. And regarding this
12 slide, I think you testified earlier that this is from
13 the Love SPE paper; correct?

14 MR. TOMASTIK: Correct.

15 MS. HARDY: And the Love paper
16 addresses conformance issues in the top two zones in
17 the Grayburg; correct?

18 MR. TOMASTIK: Yes.

19 MS. HARDY: Okay. And, again, you've
20 never managed an EOR project; right?

21 MR. TOMASTIK: No.

22 MS. HARDY: And isn't it -- or do you
23 know whether in an EOR project, it's necessary to do
24 squeeze work to divert flow as part of conformance
25 work?

1 MR. TOMASTIK: That does occur, yes.

2 MS. HARDY: Okay. Thank you.

3 I have no further questions for
4 Mr. Tomastik.

5 THE HEARING EXAMINER: Okay. Thank
6 you, Ms. Hardy.

7 OCD, cross-examination for
8 Mr. Tomastik?

9 MR. MOANDER: OCD has no questions for
10 this witness and will pass the witness.

11 THE HEARING EXAMINER: Thank you.
12 Mr. Beck, for Rice?

13 MR. BECK: No questions.

14 THE HEARING EXAMINER: All right.
15 Mr. Suazo, for Pilot?

16 MR. SUAZO: Yes. Mr. Hearing Officer,
17 I do have a few questions for Mr. Tomastik.

18 THE HEARING EXAMINER: Okay.

19 CROSS-EXAMINATION

20 BY MR. SUAZO:

21 MR. SUAZO: Good morning, Mr. Tomastik.
22 My name is Miguel Suazo; I'm representing Pilot Water.
23 And I would just like to kind of clarify some of the
24 information in your slides with regard to the Hobbs
25 channel. And as I understood your slides, your

1 testimony today is that there is communication between
2 the Capitan Reef and the Hobbs channel.

3 MR. TOMASTIK: No. My testimony
4 is -- is saying that based on the published works
5 of -- or I think it was Jones, yes, 2016, his -- his
6 figures show the elimination of the Hobbes channel,
7 which is basically the two arrows coming out at the
8 top of the northwest of that figure with the
9 development of the Pecos River system that -- that
10 outflow no longer existed.

11 Basically, his work in 1976 and 1980
12 was done mapping chloride concentrations from multiple
13 reservoirs, including the San Andres, Queen. I mean,
14 there was multiple formations. And the contouring was
15 not done based on standard geologic principles for
16 contouring, and chloride concentrations have nothing
17 to do with groundwater flow direction.

18 So there's only been really two
19 publications, the Hiss -- the Hiss work and then the
20 work done in -- by Holland and the -- and the other
21 author in 1984 regarding the existence of the quote
22 unquote Hobbs channel. It's not documented in any
23 geologic or hydrogeologic or hydrodynamic publication
24 as a unique geologic feature.

25 MR. SUAZO: Okay. So then if there's

1 no Hobbs channel, there clearly can't be communication
2 between the Hobbs and the Capitan Reef; is that right?

3 MR. TOMASTIK: Yes.

4 MR. SUAZO: Okay. And did you look
5 beyond, you know, the Hobbs to other, you know, places
6 where there might be communication like the Jal [ph]?

7 MR. TOMASTIK: No, I did not.

8 MR. SUAZO: Okay. All right. Thank
9 you.

10 No further questions for this witness,
11 Mr. Hearing Officer.

12 THE HEARING EXAMINER: Thank you,
13 Mr. Suazo.

14 All right. Why don't we start with the
15 remote commission members.

16 Mr. Lamkin, questions for Mr. Tomastik?

17 MR. LAMKIN: I do have a couple
18 questions.

19 CROSS-EXAMINATION

20 BY MR. LAMKIN:

21 MR. LAMKIN: Good morning,
22 Mr. Tomastik.

23 MR. TOMASTIK: Good morning.

24 MR. LAMKIN: Thank you for your
25 testimony.

1 Did you find any wells besides the 139
2 that had a potential explanation for higher water
3 production?

4 MR. TOMASTIK: I didn't look. I mean,
5 I looked at dozens of wells, but unfortunately I
6 didn't look at every well in the EMSU and all the
7 sundry notices.

8 When I have looked at a lot of the
9 sundry notices, I have found, you know, issues with
10 well integrity, casing leaks, intermediate casing
11 flows to the surface. But I -- I had not found any
12 additional information regarding water inflows

13 MR. LAMKIN: For the issues that
14 Chevron documented with casing and cement integrity
15 previously in the EMSU, did you correlate any of that
16 to potential communication pathways between the
17 San Andres and the Grayburg?

18 MR. TOMASTIK: No. Those -- those were
19 basically well-integrity issues that they were
20 experiencing in the Grayburg. The way I looked
21 at -- and the way I'm looking at well integrity is
22 from my former career of 25 and a half years as a
23 regulatory person overseeing Class 2 and Class 3
24 injection.

25 That well integrity issue becomes a

1 critical aspect of Class 2 CO2 permitting because of
2 the corrosive nature of CO2 with steel and Portland
3 cement.

4 So the fact that we've had evidence of
5 communication on acid jobs on the back side of pipe
6 and -- and flows to surface, those are serious
7 concerns from moving from a tertiary -- or from a
8 waterflood scenario to a tertiary CO2 scenario from a
9 regulatory standpoint.

10 MR. LAMKIN: Okay. And then with
11 respect to your comment about fluid level monitoring,
12 wasn't there data presented yesterday showing that
13 fluid levels had risen in the Goodnight wells?

14 MR. TOMASTIK: That -- that has -- was
15 showed yesterday. One of the things that nobody
16 mentioned, every one of those wells were still on
17 vacuum, but what -- those were limited shut-ins other
18 than the piper [ph], which was shut in, I think, for
19 two months, and you could see a drop of about 300
20 feet.

21 Likely if all of those injection wells
22 were shut in for a longer period of time, your static
23 fluid levels would reach an equilibrium, and most
24 likely every one of those wells would be pretty well
25 balanced out at the -- pretty much the same level and

1 would drop.

2 MR. LAMKIN: Okay. Thank you.

3 Those are all my questions.

4 THE HEARING EXAMINER: Thank you,

5 Mr. Lamkin.

6 Mr. Razatos, questions for

7 Mr. Tomastik?

8 MR. RAZATOS: No, I do not.

9 Thank you, Mr. Tomastik, for your time.

10 We appreciate it.

11 THE HEARING EXAMINER: All right.

12 Dr. Ampomah, you're up.

13 CROSS-EXAMINATION

14 BY DR. AMPOMAH:

15 DR. AMPOMAH: Thank you, sir, for your
16 testimony today. I do have a couple of questions for
17 you. So we can have your slides up and then also your
18 direct testimony up. I do have couple of questions
19 through that.

20 So we'll start with your Slide
21 Number 3. You described the water encroachment and
22 then the fracture flow. Now, with regards
23 to -- you're saying that fracture system in the
24 Grayburg and San Andres carbonates do not extend
25 hundreds of feet vertically. Do you have any evidence

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1 to back this up?

2 MR. TOMASTIK: Again, I -- I looked at
3 Dr. Lindsay's [ph] outcrop photographs that show
4 hundreds of feet of Grayburg with his -- his contact
5 with the San Andres in the Guadalupe Mountains, and
6 there's no evidence of vertical fracture communication
7 extending hundreds of feet in those rocks at the
8 surface.

9 Dr. Lindsay [ph] testified or in his
10 self-affirmed statement that the vertical fracture in
11 the core extended only one to three feet, and there's
12 no evidence of vertical fracturing extending that
13 high. And as Mr. Knights testified and I've
14 testified, vertical fractures will hit a horizontal
15 bedding plane that acts as a barrier to flow and then
16 flow will go horizontal.

17 And that's likely the -- the scenarios
18 that we're seeing not only in the Grayburg, but also
19 in the lost-circulation zones in the San Andres.
20 Those are horizontal permeability zones that have been
21 stopped by a barrier above that.

22 DR. AMPOMAH: And I read that in your
23 direct testimony, so thank you for confirming that.

24 So Ms. Hardy brought up the bubble map
25 of the production history in the Grayburg. Do you

1 recall that?

2 MR. TOMASTIK: Yes.

3 DR. AMPOMAH: So here on your Point
4 Number 4, you are describing where you believe that
5 there is water encroaching into the Grayburg. Now,
6 does this section that you are presenting to the
7 Commission here explains the high water production
8 that we are seeing in isolated wells that was shown in
9 the bubble map?

10 MR. TOMASTIK: Yes. That -- although I
11 believe the one bubble map I saw from Mr. West's
12 testimony actually had volumes on it that actually had
13 showed how much water had been produced. Again, based
14 on the Bureau of Mines 1939 publication, edge water
15 encroachment had been going on since the '30s, mainly
16 from the east, but also from the south or from the
17 west and from the south.

18 But there's -- there's -- you're
19 dealing geologically with a ramp, platform-type
20 system, so water is going to -- as you're
21 depressurizing the -- the Grayburg from primary
22 production, you're going to cone water in from outside
23 lower elevation areas.

24 DR. AMPOMAH: Okay. You know, you make
25 mention of a vacuum. Yeah. You've used that term.

1 And when my other colleague commissioner asked you
2 about the fluid levels, you attributed that nobody
3 talked about the vacuum. I want to talk about the
4 vacuum. How do you define the vacuum?

5 MR. TOMASTIK: Basically vacuum
6 at -- at the surface that the injection fluid is going
7 down the tubing at no pressure other than atmospheric,
8 and sometimes you could even put your hand over the
9 tubing and it will actually suck on your tubing, so
10 it's actually pulling the fluid down the borehole.

11 DR. AMPOMAH: So you are not
12 necessarily referring to the reservoir that the fluid
13 is going in there?

14 MR. TOMASTIK: In the -- in the
15 Goodnight San Andres injection wells, yes.

16 DR. AMPOMAH: But you are not referring
17 to the reservoir itself that is in the vacuum, so it's
18 taking all the fluid that comes in it?

19 MR. TOMASTIK: I -- I
20 mean -- it -- it's under the vacuum system at the
21 surface. And also when -- when Chevron started
22 injection in the EMSU in 1986 and '87 -- you can go
23 through the sundry notices -- most of the injection
24 wells in the Grayburg started under vacuum conditions.

25 DR. AMPOMAH: Do you certainly know the

1 fluid flow path within the San Andres from Goodnight's
2 injection?

3 MR. TOMASTIK: I -- I -- from what
4 we've seen from Mr. Meltzer [ph] and
5 Dr. Trentom's [ph] testimony, the San Andres over that
6 central basin platform is basically an open system.

7 There's really no boundary to
8 horizontal flow from that standpoint, so it -- it's
9 not a closed system, although the injection zone that
10 we're -- that Goodnight is injecting to -- into in the
11 San Andres is a confined aquifer.

12 DR. AMPOMAH: It's a confined aquifer?
13 How does that square up with open system?

14 MR. TOMASTIK: Well, the -- the water
15 is moving laterally out of the system basically.

16 DR. AMPOMAH: To where?

17 MR. TOMASTIK: One of -- one of the
18 other areas of the San Andres maybe where our other
19 production is -- is pulling it in. I -- I mean, that
20 could get into a lot of complex geologic and
21 engineering development.

22 DR. AMPOMAH: Well, did Goodnight did
23 any analysis to prove to the Commission that this is
24 the flow path of the injection?

25 MR. TOMASTIK: That -- I mean -- I

1 mean, you could -- you would have to have multiple
2 wells outside of the EMSU where you had static fluid
3 levels and wells probably would be -- have to be shut
4 in to be able to reach equilibrium to try to develop a
5 potential metric sub-service groundwater flow map of
6 the San Andres.

7 But that would -- that would
8 require -- like I said, I think there's, what,
9 somebody said 60 well -- injection wells and a 5-mile
10 radius. But you have to have the data to be able to
11 map the groundwater flow out of -- out of the system.

12 DR. AMPOMAH: But you've listened to
13 other testimony. Now, do you believe that Empire
14 through their models presented an alternative
15 potential flow path to the Commission?

16 MR. TOMASTIK: A flow path in the
17 San Andres?

18 DR. AMPOMAH: Yes.

19 MR. TOMASTIK: Or a flow path
20 communication with the Grayburg?

21 DR. AMPOMAH: All of it.

22 MR. TOMASTIK: The -- if -- if
23 there -- and -- and Empire's experts have testified
24 that there's communication between the San Andres.
25 If -- if the ROZ is limited to the San Andres, then

1 you have a regulatory confining zone issue, because
2 now you're moving fluid out of the proposed ROZ
3 injection zone.

4 Again, that becomes a regulatory
5 problem, 'cause you're not allowed to migrate fluid
6 out of your confining zone.

7 DR. AMPOMAH: You know, so you're
8 saying that you believe that the San Andres is an open
9 system, but Goodnight's injection is in the closed
10 system? I mean, I don't know how that squares out.
11 But you are saying that the fluid that has been
12 displayed is more or less going horizontally.

13 Now, we've listened to testimonies
14 about fractures even from Goodnight's experts. So do
15 you have any evidence to prove to the Commission that
16 your testimony saying that the fluid path is going
17 horizontally? Taking into consideration all these
18 geological features, is there no potential vertical
19 migration?

20 MR. TOMASTIK: Well, everything that
21 we've seen between the -- the work that Chevron has
22 done with the attempts to squeeze off high
23 permeability flow zones in the Grayburg all seem
24 to -- to relate to horizontal flow. Again, as Mr.
25 Knights testified that he believes also that bedding

1 planes are acting as a barrier.

2 There -- there is a confining zone
3 within the Goodnight SWDs above the injection zone;
4 otherwise, they would not be permitted. You have to
5 have a confining zone that prohibits vertical
6 migration of fluid out of your injection zone.

7 So -- and -- and there's been no
8 evidence other than the core data that supposedly
9 shows a one-to-three-foot vertical fracture. How are
10 we extending vertical fracture height hundreds of feet
11 from Goodnight's injection zone in the San Andres into
12 the Grayburg? We don't -- we don't see that.

13 Now, as I testified, and also in my
14 self-affirmed statement, there is documentation since
15 the 1930s that there were wells drilled deeper into
16 the San Andres. Were those wells properly plugged
17 back? That, we don't know.

18 DR. AMPOMAH: So you said something
19 that I thought was very interesting. You are saying
20 that there's no way Goodnight would have been allowed
21 to inject into the San Andres if there is no caprock
22 or, let's say, any barrier?

23 MR. TOMASTIK: Yes.

24 DR. AMPOMAH: So from all the
25 testimonies that we've listened to throughout -- we

1 are in the third week. Can you show a strat column
2 delineating the well-established barrier that has been
3 presented to the Commission?

4 MR. TOMASTIK: I believe on the -- the
5 C108 permit applications and testimony at that time by
6 Steve Drake, who was the former geologist with
7 Goodnight, that they presented cross-sections showing
8 the -- the barrier zone above their proposed injection
9 zones in their San Andres SWDs.

10 DR. AMPOMAH: And has that been
11 presented to the Commissioner or tendered in as an
12 evidence?

13 MR. TOMASTIK: I suspect Mr. McGuire
14 may be presenting that.

15 DR. AMPOMAH: I'll look forward to
16 that. Thank you.

17 Let's go to your Slide Number 8. While
18 the Slide Number 8 is coming up, I want to ask you.
19 Do you have any changes to your conclusions that
20 you've made or any of the analysis that you've made
21 based on all the testimonies that you've listened to
22 throughout the whole weeks?

23 MR. TOMASTIK: No. I'm -- I'm pretty
24 well affirmed with my conclusions.

25 DR. AMPOMAH: Okay. So you're talking

1 about there's been a lot of wells being drilled into
2 the San Andres being tested and oil produced water.
3 Is that a fair description?

4 MR. TOMASTIK: There have -- have
5 been -- I don't say there's a lot, but there's been a
6 number of wells drilled into the San Andres, yes.

7 DR. AMPOMAH: Do you believe there is
8 any ROZ in the San Andres?

9 MR. TOMASTIK: I think there might be a
10 ROZ in the San Andres directly below the base of the
11 Grayburg, but I've not done any studies on that.

12 DR. AMPOMAH: So when Empire's experts
13 and also even Goodnight's experts, they've
14 all -- they've all presented to the Commission, at
15 least based on the evidence, there is an ROZ. Do
16 you -- does that change your perspective about whether
17 there is existence of ROZ or not?

18 MR. TOMASTIK: Well, as -- as we've
19 heard testimony, the ROZ changed from 400 feet to a
20 1,000 feet, so we -- I do not believe there's an ROZ
21 in the -- the part of the San Andres where Goodnight
22 is injecting in the San Andres.

23 DR. AMPOMAH: Now, within the
24 unitization, is there any distinction between what we
25 call the upper San Andres and the lower San Andres?

1 MR. TOMASTIK: I really haven't got
2 into that. I -- I focus more on the injection zone in
3 the San Andres for the Goodnight wells.

4 DR. AMPOMAH: So let me ask you. Since
5 you -- you discussed about the geochemistry and the
6 impacts, you know, and all of that, why do the
7 regulators ask for water compatibility analysis?

8 MR. TOMASTIK: Basically, I mean -- I
9 mean, the -- the C108 applications require the
10 submittal of your -- your produced water, which has
11 been shown in -- in testimony and then also an
12 analysis of your -- of your fluid within the
13 reservoir.

14 Typically, Oil Conservation Division
15 has required swabbing of the wells to see if there's
16 any -- any commercial or paying quantity oil
17 production. I know that Goodnight performed those, so
18 that's probably where the fluid analysis for the
19 San Andres came from: from their wells.

20 DR. AMPOMAH: So was Goodnight's
21 treated water chemistry and all of that presented to
22 the Commission as part of these hearings?

23 MR. TOMASTIK: In -- in my
24 self-affirmed statement, I -- I went into great detail
25 into how Goodnight is treating their injection fluid

1 prior to injection. There's basically a list of all
2 of the chemical treatments they're doing: scale
3 inhibitors, acid -- acid surfactants. They're using
4 corrosion inhibitors.

5 So in my self-affirm statement, I -- I
6 had got all that information from Goodnight, because
7 that's what I had to see. And most of your Class 2
8 saltwater disposal operators will treat their fluid.
9 Injecting produced water that's untreated or
10 unfiltered typically leads to downhole scaling or
11 plugging of the -- of the reservoir for injection
12 in -- in basically the wellbore.

13 And Chevron basically in their paper
14 that was published made that statement that the
15 scaling that they were seeing, the barium sulfate was
16 occurring within the wellbore and not within the
17 reservoir.

18 DR. AMPOMAH: Okay. Thank you for
19 that. So you do have a regulatory background; right?

20 MR. TOMASTIK: A what?

21 DR. AMPOMAH: Regulatory background?
22 You -- you've helped --

23 MR. TOMASTIK: Over my career, I've
24 done pretty much every aspect of the oil and gas
25 industry. Like I said, I -- I drilled wells, I -- I

1 ran casing, cemented, perforated, hydraulic fracture,
2 sample descriptions. When we weren't drilling, I had
3 a client -- I mean, he had me help plumb up wellheads.

4 I pumped wells, free-flowed. We didn't
5 have pump jacks. We free-flowed wells. So I
6 learned -- I learned a lot in the six -- first six
7 years of my career in the 1980s in oil and gas, and
8 then 25 and a half years of doing Class 2 and Class 3
9 injection permitting and oversight.

10 But I also would go out in the field
11 and witness mechanical integrity tests. I plugged
12 wells, and then I also conducted hundreds of
13 groundwater investigation related to --

14 DR. AMPOMAH: So sorry to interject.
15 You know, the timing. So, you know --

16 MR. TOMASTIK: I -- I have a unique
17 career.

18 DR. AMPOMAH: Okay. I appreciate that.
19 And sorry to interject, but the timing. So I just
20 wanted to know that you have experience in Class 2
21 wells?

22 MR. TOMASTIK: Yes.

23 DR. AMPOMAH: Now, you've established
24 that. Now, let me ask you. For several years of your
25 experience, have you seen any operator that does not

1 have any interest in the unit being allowed to inject
2 into the unit?

3 MR. TOMASTIK: Again, on the -- on the
4 permitting aspect here in -- in New Mexico or Texas, I
5 pretty much focus on doing the -- the geologic
6 analysis. I do look at the induced seismicity
7 potential with my geophysicist.

8 So most of the actual work on a C108
9 here in New Mexico, like I said, was done either by
10 Nate Alleman before he -- he left; and then Oliver
11 Seekins replaced him, and now he's moved on, and Reed
12 Davis is now handling most of that application
13 process.

14 DR. AMPOMAH: Okay. So you are not
15 necessarily involved with regards to whether they can
16 inject or not inject? Is that your testimony?

17 MR. TOMASTIK: Other than if there's a
18 problem well, an area of review, or there's not a
19 confining zone above the injection interval. Those
20 are the kind of things that I look at on the
21 applications.

22 DR. AMPOMAH: Okay. Yeah. So I do
23 have a question that probably I'll hold on for
24 Mr. McGuire about the rights and obligations of unit
25 operators.

1 Section 10 of Empire's Exhibit Number 1
2 that I believe that was presented to us by
3 Mr. Willow [ph] on that, so I do have a question on
4 that. And since you said that you are not involved in
5 whether they have the -- they have the opportunity to
6 inject or not; so if Mr. McGuire is in the room,
7 probably he can be ready for that.

8 Section 10 of the -- that is going to
9 be the unitization documentation. Under the last
10 Section 10, there is a rights and obligations of the
11 unit operator. So I'll move on.

12 Now, on Number 89 of your -- I think
13 we've talked about the vacuum, how you described the
14 vacuum. So I'll move on from that one.

15 Now, 91 of your direct -- that would be
16 page 28 if Mr. Rankin can bring that up. Page 28,
17 that will be item number 91.

18 MR. RANKIN: I apologize, Dr. Ampomah.
19 I was momentarily not paying attention. Direct
20 testimony?

21 DR. AMPOMAH: Yes.

22 MR. RANKIN: Page 28?

23 DR. AMPOMAH: Page 28, Item 91.

24 So on Item 91, you made a lot of
25 important statements here, and I just want to know,

1 are you -- and I don't want to read all of that. But
2 is it based on someone's testimony? Or is it based on
3 your own analysis?

4 MR. TOMASTIK: This is based on my
5 analysis of a number of existing EMSU Grayburg
6 completions and looking at the lower-most perforation
7 or the total depth of the open hole and the depth
8 below those production areas within the Grayburg to
9 the top of the perforations in the Goodnight Midstream
10 San Andres saltwater disposal wells. And those are
11 anywhere from 285 feet to 463 feet deeper than the
12 production from the Grayburg.

13 DR. AMPOMAH: So, sir, you said that
14 additionally, according to Steve Drake's [ph]
15 self-affirmed statement and cross-section exhibits
16 from 2002, there is not only a low porosity and a low
17 permeability barrier that separates the producer zone
18 in the Grayburg from the disposal zone in the
19 San Andres. Do you have evidence to support this?

20 MR. TOMASTIK: I relied on those
21 exhibits.

22 DR. AMPOMAH: And is this exhibits in
23 evidence as presented to the Commission?

24 MR. TOMASTIK: I -- I believe
25 they -- they were probably presented within Nate

1 Alleman's C108 exhibits, and it's possible Preston
2 McGuire may present them also.

3 DR. AMPOMAH: So are you saying
4 all -- so Mr. Knights testified about the barriers,
5 whether there's going to be a communication. He
6 showed some barrier. So if there is an established
7 barrier, then why did he not show the Commission? Or
8 you said Mr. McGuire will probably show us?

9 MR. TOMASTIK: That's what we're
10 assuming, yes.

11 DR. AMPOMAH: Okay. I'll move on to
12 Section 101, Item 101. So on Item 101, you are more
13 or less alluding to Dr. Lindsay's [ph] PhD
14 dissertation. Let me ask. Did you -- again, also did
15 you only depend on the analysis to substantiate this
16 as you are relying upon as part of your testimony?

17 MR. TOMASTIK: I -- I did not do my own
18 analysis, but -- but I did find that Dr. Lindsay [ph],
19 some of his self-affirmed statement or testimony
20 contradicted with statements that he had in his PhD
21 dissertation.

22 DR. AMPOMAH: So let's move on to 103.
23 You made a very important statement there, which I
24 really want to know more about it. So on
25 Item 103 -- I'm reading from line 3 -- you said that

1 Goodnight Midstream's SWD injection fluids into the
2 San Andres would not migrate upward, since the
3 San Andres formation pressure is now under pressured.

4 Do you know whether the San Andres has
5 ever been a normal-pressured reservoir?

6 MR. TOMASTIK: That, I don't know. We
7 would need -- and, I -- I mean, obviously maybe based
8 on the Rice work that they had presented from the well
9 from 1959, there was indication that it's been on
10 vacuum since. That's an indication that the
11 San Andres has been under-pressured for -- I guess for
12 time at that point.

13 With the withdrawal of 340 million
14 barrels, I'm sure it helped bring the pressure down
15 even more.

16 DR. AMPOMAH: Yeah. But -- so when you
17 say "now," so is it your testimony that you believe
18 that it has -- it has probably in the past been a
19 normal-pressured reservoir?

20 MR. TOMASTIK: I -- I mean, everything
21 that we've -- based on what data that we have on the
22 San Andres before the water flooding and before the
23 use of the San Andres for makeup water, I did not have
24 that -- that data from the Rice well when I did this,
25 so I did not know that it was under pressurized at

1 that point.

2 DR. AMPOMAH: Okay. And, you know,
3 Item 104, you went ahead and said that in order for
4 the San Andres reservoir to even start
5 repressurization all of the pore space in the
6 reservoir would need to be refilled to accommodate the
7 reconstructed estimate that over 340 million barrels
8 of water has been redrawn from the San Andres
9 formation within the EMSU alone.

10 My question to you is, has Goodnight
11 done any analysis to account for how the pressure is
12 going to change with the existing injection wells and
13 then also the proposed injection wells?

14 MR. TOMASTIK: That, I don't know.
15 Preston McGuire would be the person to ask that
16 question of.

17 DR. AMPOMAH: Do you know that Empire
18 did that analysis and presented it to the Commission?

19 MR. TOMASTIK: I believe there was a
20 slide presented showing the depressurization during
21 the withdrawal of the 300 million -- 340 million
22 barrels of water and then the start of
23 repressurization and then the dash line projecting out
24 to 2030.

25 The problem with that graph is Empire

1 is using the injection volumes from the applications
2 there. They -- they were estimating, I think, 323
3 million barrels a day. There is no Class 2 injection
4 well that I'm familiar with that injects continuously
5 the same amount day in and day out.

6 Class 1, where you have an industrial
7 waste product, that's 24/7, 365 days a year. You're
8 injecting constantly. On Class 2, it's based on
9 supply and demand.

10 When you -- when you have horizontal
11 well flowbacks that start, obviously you're going to
12 have a big increase in injection volumes. But when
13 that's slows down, then injection volume slows down.
14 So it's not a continuous day and day out at that
15 injection rate.

16 DR. AMPOMAH: And I'm glad that you
17 were able to recollect that -- that testimony or even
18 that exhibit, 'cause I don't want to pull it up to
19 delay our time here.

20 Now, you talked about the methodology
21 that Empire used. You told me that the water has been
22 displaced -- that water that has been injected has
23 been displaced. And I asked you, "Do you know where
24 it's going?" You said, "No" --

25 MR. TOMASTIK: Well, again, as my

1 statement above, like, that's why you do a waterflood,
2 you know, is -- is if you've taken fluid out of the
3 reservoir, you have to refill the pore spaces, as
4 you're aware.

5 So if we've taken 340 million barrels
6 out, you really have to refill that fluid before you
7 start seeing a pressure increase, and that's how
8 waterflood operates.

9 And that's what we see in the Grayburg.
10 The Grayburg was down to about 200 pounds when the
11 waterflood initiated, and -- and that, you know, by
12 refilling the -- the reservoir is how waterflood works
13 and how you repressurize the reservoir and move the
14 oil front to your producing wells.

15 And based on the data that I looked at
16 from the Oil Conservation Division on the
17 waterflooding in the Grayburg, they've run over a
18 billion barrels through that water flood; so --

19 DR. AMPOMAH: Well, so based on the
20 methodology that Mr. West presented to us, I mean, he
21 was just being generous in such a way that he said:
22 "Okay. You take one fluid. You put it in there." So
23 he was using the permitted rates that Goodnight, you
24 know, do have, and then even the newer ones as well
25 that they are requesting.

1 He used that to do more or less
2 material balance. You put this one in; you take this
3 one out. So I'm not sure what -- so is it your
4 testimony that Goodnight is going to present to us an
5 alternative as to how they view how the pressure is
6 going to build up as a result of their injection? Is
7 that your testimony?

8 MR. TOMASTIK: Again, I'm not sure
9 exactly how Mr. McGuire is going to present the
10 testimony on that. But like I just testified to, you
11 cannot use an injection rate on a permit as a
12 continuous injection rate for a Class 2 well. That
13 never happens. They -- they go up and down based on
14 supply and demand.

15 So one day I might be injecting 40,000
16 barrels, and the next day I'm injecting three, because
17 I don't have the supply of water to get rid of at that
18 point.

19 DR. AMPOMAH: So, sir, let me ask you.
20 Assuming we have one single pool, San Andres, and then
21 Goodnight is injecting -- they do have their
22 permit -- that they are injecting, and another company
23 comes in and also wants to inject, is Goodnight not
24 going to use the permitted injection rate to contest
25 whether they are going to have interference?

1 MR. TOMASTIK: As -- as far as I know,
2 I've not -- not seen any evidence from Goodnight that
3 there's well interference on any of the wells at this
4 point.

5 DR. AMPOMAH: Okay. Let me -- I was
6 just putting a hypothetical case, you know, because
7 you are saying that the rates that NMOCD puts on
8 permits are not relevant. Is that your testimony?

9 MR. TOMASTIK: Well, that -- no.
10 You -- you have an area of review that limits the
11 spacing of your injection wells. I mean, so
12 you're -- you're not putting injection wells right
13 next to each other.

14 DR. AMPOMAH: Well, you use your
15 injection rate to delineate your area of review?

16 MR. TOMASTIK: No -- no.
17 That's -- that's not what that's based on.

18 The area of review is -- is based on
19 either a fixed radius that is part of the UIC primacy
20 program, or it's based on a zone of endangering
21 influence calculation, which I don't -- have not seen
22 in New Mexico, anybody actually going in and doing a
23 zone of endangering influence calculation, which is
24 basically a modified Theis [ph] equation, which is
25 based on homogeneous rocks and -- and that -- that

1 really doesn't work in the geologic realm. So -- so
2 basically your area of review is based on a fixed
3 radius.

4 Now, there has been changes in New
5 Mexico to the Delaware Mountain Group where you're now
6 moving a mile between two wells due to the potential
7 of not well interference between the injection well,
8 but pressuring the formation up that would impact
9 producing wells drilling through the injection
10 interval.

11 DR. AMPOMAH: You know, I will hold it
12 on there, and then probably we will have more
13 discussion with Mr. McGuire, so I'll just leave it
14 there.

15 Now, just to confirm, on your Item 105,
16 you talk about -- 105, you talk about these verticals.
17 So you describe that there is 285 feet to 463 below
18 the lowest producing Empire's Grayburg oil production.
19 I know you've talked about this, but I just want to
20 put it on record.

21 You're saying that this vertical
22 separation comprised of tight intervals with low
23 porosities and higher resistivities with anhydrate
24 immediately above the top of the injection zone would
25 serve as an additional barrier to vertical fluid

1 migration into the Grayburg formation.

2 My question to you is, do you have any
3 evidence where you've mapped what you are alluding
4 here and showing to the Commission?

5 MR. TOMASTIK: Again, that is based on
6 the -- the cross-section work that Steve Drake [ph]
7 did in 2022 for -- with the submittal of the
8 applications.

9 DR. AMPOMAH: And Mr. McGuire will show
10 us?

11 MR. TOMASTIK: Yes.

12 DR. AMPOMAH: Okay. Thank you, sir,
13 for your time.

14 THE HEARING EXAMINER: Thank you,
15 Dr. Ampomah.

16 Redirect examination, Mr. Rankin?

17 REDIRECT EXAMINATION

18 BY MR. RANKIN:

19 MR. RANKIN: Mr. Tomastik, do you
20 recall questions from Ms. Hardy regarding whether or
21 not the produced water that Goodnight is disposing
22 would contain fracture fluids from the Delaware Basin?

23 MR. TOMASTIK: Yes.

24 MR. RANKIN: Do you recall in your
25 review of the history of well completions and

1 production in the EMSU whether or not the EMSU
2 operators in the Grayburg also fractured their wells?

3 MS. HARDY: I'm going to object to the
4 question. I think that Mr. Rankin is testifying about
5 information that Mr. Tomastik has not testified about.
6 I don't think you can put words in the witnesses
7 mount.

8 THE HEARING EXAMINER: Overruled.

9 MR. RANKIN: Mr. Tomastik, I didn't get
10 the chance to finish my question. But you reviewed
11 the well completion history of the operators in the
12 EMSU and the Grayburg; correct?

13 MR. TOMASTIK: Yes.

14 MR. RANKIN: Did those operators
15 fracture their wells?

16 MR. TOMASTIK: Yes. There's not only
17 hydraulic fracturing that's been performed in the
18 Grayburg, but also in the Penrose and the Queen and
19 the Yates.

20 MR. RANKIN: Ms. Hardy asked you about
21 strontium scaling. Do you recall those questions?

22 MR. TOMASTIK: Yes.

23 MR. RANKIN: Did Mr. West address
24 strontium scaling in either his direct testimony or
25 his rebuttal testimony?

1 MR. TOMASTIK: I believe he mentioned
2 it. I don't know if it was in testimony. But
3 I've -- I've seen no indication of strontium sulfate.
4 Barium sulfate seems to be the main scale problem that
5 has been addressed in the EMSU.

6 MR. RANKIN: Do you recall questions
7 from the Commission regarding the potential direction
8 or pathway of flow in the San Andres?

9 MR. TOMASTIK: Yes. And -- and that's
10 just totally relying on that -- that Jones paper from
11 2016.

12 MR. RANKIN: Well, actually I -- I
13 think what I was asking you about was the Commission's
14 questions to you about which direction the flow in the
15 San Andres may go; right? Which direction it is
16 going?

17 MR. TOMASTIK: Oh, horizontally
18 basically, and it's an open system.

19 MR. RANKIN: Okay. I'm going to ask
20 you a couple questions about that.

21 MR. TOMASTIK: Yes.

22 MR. RANKIN: But do you recall
23 Dr. Trentom's [ph] testimony about the ROZ, the
24 creation of the ROZ in the EMSU through the San Andres
25 fairway?

1 MR. TOMASTIK: Yes.

2 MR. RANKIN: And do you recall that
3 Dr. Trentom [ph] identified the flow pathway in the
4 San Andres through that fairway?

5 MR. TOMASTIK: Yes.

6 MR. RANKIN: Which direction was that
7 flow?

8 MR. TOMASTIK: To the east mainly, some
9 to the south.

10 MR. RANKIN: Okay. So looking at this
11 chart where he's identified the EMSU and AGUB, which
12 direction is that pathway, that flow?

13 MR. TOMASTIK: It looks -- in the EMSU,
14 it looks like he has it going from the west to east
15 and then to the south.

16 MR. RANKIN: Okay. And through
17 the -- from the EMSU, which direction is it going?

18 MR. TOMASTIK: South.

19 MR. RANKIN: You referred to, I
20 believe, Mr. West's exhibit where he showed the
21 volumes of water. He did a mass balance of volumes of
22 water injected and withdrawn from the San Andres in
23 and around the EMSU. Do you recall that?

24 MR. TOMASTIK: Yes.

25 MR. RANKIN: And those volumes, do

1 those volumes equate to pressure? Is there an
2 equation -- I mean, you don't know what the effect on
3 pressure is going to be based those --

4 MR. TOMASTIK: I -- I didn't look at
5 that, no.

6 MR. RANKIN: But did Mr. West look at
7 that in that --

8 MR. TOMASTIK: I believe he did.

9 MR. RANKIN: In that exhibit, was it
10 just addressing volumes? Or was it also addressing
11 pressures?

12 MR. TOMASTIK: I recall -- I definitely
13 remember volumes. I don't remember if there was
14 pressure on there or not. It may have been.

15 MR. RANKIN: Okay. But you don't
16 recall as you sit here today?

17 MR. TOMASTIK: No. I'd have to see
18 the -- the diagrams.

19 MR. RANKIN: The exhibit speaks for
20 itself that we're referring to?

21 MR. TOMASTIK: Yes.

22 MR. RANKIN: Okay. Mr. Hearing
23 Officer, I have no further questions for Mr. Tomastik
24 at this time.

25 THE HEARING EXAMINER: Okay. Thank

1 you. It's 11:41. I'm assuming you have one last
2 witness, Mr. McGuire; is that correct?

3 MR. RANKIN: Mr. Hearing Officer, we're
4 going to do Mr. David White today because of the time
5 frames. We don't have a lot of time to do Mr. McGuire
6 today. We can finish Mr. White, and that we would
7 give us uninterrupted time for Mr. McGuire on
8 May 19th.

9 THE HEARING EXAMINER: Mr. White?

10 MR. RANKIN: Yeah.

11 THE HEARING EXAMINER: I don't have him
12 on your list.

13 MR. RANKIN: Mr. White is our rebuttal
14 witness to address the Capitan issues. He's on our
15 list as a rebuttal witness.

16 THE HEARING EXAMINER: Okay. All
17 right. Empire's on board with that.

18 Let me ask you, Mr. Rozatos. What
19 would be the Commission's preference on this?

20 MR. MOANDER: So, Mr. Hearing Officer,
21 I've got an issue. Are we releasing this witness?
22 That's first question, and then I got an issue I do
23 want to bring up, but I want to do these in order.

24 MR. RAZATOS: That was going to be my
25 question, too, Mr. Hearing Officer. Are we releasing

1 this witness?

2 THE HEARING EXAMINER: Any objection to
3 that, Empire?

4 MS. HARDY: No objection.

5 THE HEARING EXAMINER: Mr. Tomastik,
6 thank you for your time. You're free to go or stay.
7 All right. Okay.

8 MR. MOANDER: I do need to bring this
9 up now, Mr. Hearing Officer. So in
10 Mr. Tomastik's -- it's both his rebuttal and his
11 amended rebuttal -- OCD needs to move to strike
12 paragraphs 28 through 39 and exhibits C23 through C27.
13 Those were not testified to in any way today.

14 And OCD's position is they are highly
15 prejudicial. They were not brought up on direct, and
16 so were not a subject of cross-examination. My
17 concern here is if this were before a jury, it would
18 be very easy to give an instruction to the jury to
19 disregard something like that.

20 In this instance, the OCD -- or the OCC
21 has seen these. In this case, we've had a couple
22 months where these documents have been out floating.
23 They've been filed.

24 And I've got a concern at this point
25 that it -- I don't have any assurances or what I would

1 maybe otherwise describe as a corrective instruction
2 that could be issued to basically instruct the jury or
3 a decision maker that these were not actually
4 statements that were put into evidence, nor were the
5 exhibits.

6 And I would like to see some type of
7 remedy crafted for that, if possible.

8 THE HEARING EXAMINER: Okay. Well, can
9 we see what we're talking about here? Can you bring
10 them up?

11 MR. MOANDER: Well, my concern is if I
12 put it up, I'm actually just making my situation
13 worse --

14 THE HEARING EXAMINER: Okay. Let's
15 hear from Mr. Rankin.

16 MR. RANKIN: Mr. Moander, can you tell
17 me what paragraphs you're talking about?

18 MR. MOANDER: It would be
19 paragraphs -- and this is for both the original
20 rebuttal and the amended -- paragraphs 28 through 39
21 and Exhibits C23 through C27.

22 MR. BECK: Okay. Mr. Hearing Officer,
23 weren't these admitted into evidence the beginning of
24 Mr. Tomastik's presentation of evidence?

25 THE HEARING EXAMINER: Well, that's a

1 good question, Mr. Beck.

2 Mr. Rankin, were those moved into
3 evidence?

4 MR. RANKIN: They were.

5 MR. MOANDER: And I was not entitled to
6 the knowledge that that would not be covered until
7 pretty much the end of testimony, so I had no ability
8 to -- I would've had no basis to object at that point.
9 I was only alerted to this at the end -- essentially
10 the end of his direct --

11 THE HEARING EXAMINER: Well, you
12 could --

13 MR. RAZATOS: Mr. Rankin, before you
14 speak. Mr. Rankin, you're sharing your screen. Since
15 there is that concern, you may want to stop sharing
16 your screen.

17 MR. MOANDER: I mean, Mr. Hearing
18 Officer, I had no -- there was no way of me knowing
19 this until those had already been entered into
20 evidence; otherwise, I would've quite obviously
21 objected. And this is the only remedy I'm left with.

22 THE HEARING EXAMINER: Well, weren't
23 these provided to OCD by Goodnight --

24 MR. MOANDER: Absolutely.

25 THE HEARING EXAMINER: -- for the

1 hearing?

2 MR. MOANDER: They were.

3 THE HEARING EXAMINER: All right. And
4 then you heard Mr. Rankin move the exhibits into
5 evidence?

6 MR. MOANDER: Absolutely. But at this
7 point --

8 THE HEARING EXAMINER: And you didn't
9 object?

10 MR. MOANDER: Of course not, because I
11 didn't realize there would be no testimony. I
12 couldn't even examine. I would've been objected to if
13 I had started examining that witness about --

14 THE HEARING EXAMINER: Yes. But your
15 remedy was to try and make the record and then rebut
16 Mr. Rankin's objection; instead, you didn't question
17 the witness about it, and you're asking me to strike
18 the testimony.

19 MR. MOANDER: Of course I wouldn't have
20 asked the -- I would not have asked a question about
21 something that was totally outside the scope at that
22 point of the direct.

23 THE HEARING EXAMINER: It's not outside
24 the scope of the exhibits that were presented --

25 MR. MOANDER: All right. Well, I'm

1 making my record on this, because it's prejudicial
2 regardless.

3 THE HEARING EXAMINER: All right.

4 MR. MOANDER: So I guess we got one
5 more appellate issue we'll be dealing with in a few
6 weeks.

7 THE HEARING EXAMINER: Okay. I'm not
8 going to strike the evidence. Anything further,
9 Mr. Moander?

10 MR. MOANDER: No, Mr. Hearing Officer.

11 THE HEARING EXAMINER: Okay. All
12 right. So let's see. That brings us back to the
13 issue of timing. It's now 11:47.

14 Mr. Razatos, so what are your thoughts?
15 Should we break now and come back a little earlier
16 than 1:15 for the next witness?

17 MR. RAZATOS: Yeah. Why don't we break
18 now, and we'll come back? Let's do 1:05 just to give
19 some time, 'cause one o'clock sometime gets a little
20 rough for people. So we'll be back at 1:05.

21 THE HEARING EXAMINER: All right.
22 Great. With your next rebuttal witness, Mr. White?

23 MR. RANKIN: Mr. White. We don't have
24 a Mr. Green today, but sometimes we've had that
25 situation. We've had a Mr. Green and Mr. White, but

1 today it's just Mr. White. And hopefully we'll get
2 done with him by the end of the day.

3 THE HEARING EXAMINER: Thank you,
4 Mr. Rankin.

5 (Off the record.)

6 THE REPORTER: We are back on the
7 record. The time is 1:06 p.m.

8 THE HEARING EXAMINER: Okay.
9 Mr. Rankin, you have another witness, David White; is
10 that correct?

11 MR. RANKIN: Thank you, Mr. Hearing
12 Officer. Yeah. Mr. David White will be our next
13 witness.

14 THE HEARING EXAMINER: And I'm assuming
15 he's remote? I don't --

16 MR. RANKIN: No. Actually, Mr. White
17 is here. He drove from Albuquerque this morning.

18 THE HEARING EXAMINER: All right. I
19 thought I saw a new face in the audience.

20 Mr. White, if you'll raise your right
21 hand.

22 WHEREUPON,

23 DAVID WHITE,
24 called as a witness and having been first duly sworn
25 to tell the truth, the whole truth, and nothing but

1 the truth, was examined and testified as follows:

2 THE HEARING EXAMINER: Thank you, sir.

3 Mr. Rankin?

4 MR. RANKIN: Thank you, Mr. Hearing
5 Officer.

6 EXAMINATION

7 BY MR. RANKIN:

8 MR. RANKIN: Mr. White, good afternoon.
9 Will you please state your full name for the record.

10 MR. WHITE: David Allen White.

11 MR. RANKIN: By whom are you employed
12 and in what capacity?

13 MR. WHITE: I am employed by Geolex,
14 Incorporated. I serve as the vice president and
15 senior geologist.

16 MR. RANKIN: And have you previously
17 testified before the Commission?

18 MR. WHITE: I have.

19 MR. RANKIN: Are you familiar with
20 Goodnight's application filed in these consolidated
21 cases?

22 MR. WHITE: I am.

23 MR. RANKIN: Have your credentials as
24 an expert witness in saltwater disposal and acid gas
25 injection, well permitting and design, petroleum

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1 geology, hydrogeology, seismic interpretation, and
2 fault-slip probability modeling been accepted and made
3 a matter of record before the Commission?

4 MR. WHITE: Yes.

5 MR. RANKIN: Did you conduct an
6 independent review of the geology and stratigraphy in
7 the area of Goodnight Midstream's SWDs within the
8 EMSU?

9 MR. WHITE: Yes, I did.

10 MR. RANKIN: And did you also
11 investigate the relationship between the San Andres's
12 Formation and the geologic formations adjacent to and
13 overlying it?

14 MR. WHITE: Yes, I did.

15 MR. RANKIN: And did you do a peer
16 review of Goodnight's analysis of its updated regional
17 evaluation of the San Andres Formation groundwater
18 characteristics?

19 MR. WHITE: Yes, I did.

20 MR. RANKIN: Any corrections or changes
21 to the testimony exhibits that were filed?

22 MR. WHITE: No.

23 MR. RANKIN: Do you adopt the testimony
24 in the self-affirmed rebuttal statement marked as
25 Exhibit I as your own sworn testimony today?

1 MR. WHITE: I do.

2 MR. RANKIN: At this time, Mr. Hearing
3 Officer, I would move -- or rather tender Mr. White as
4 an expert witness in saltwater disposal and acid gas
5 injection, well permitting and design, petroleum
6 geology, seismic interpretation, and fault-slip
7 probability modeling.

8 THE HEARING EXAMINER: That's a long
9 list.

10 MR. RANKIN: It is.

11 THE HEARING EXAMINER: Empire, any
12 objection?

13 MR. PADILLA: No objection,
14 Mr. Examiner.

15 THE HEARING EXAMINER: Thank you,
16 Mr. Padilla.

17 OCD?

18 MR. MOANDER: No objection.

19 THE HEARING EXAMINER: Rice?

20 MR. BECK: No objection as long as I
21 get a list of what those things are afterwards.

22 MR. RANKIN: I didn't want Mr. White to
23 be downgraded, because he's got a list. And then I
24 want to make sure that every time he appears, he's
25 always qualified on that list; so --

1 THE HEARING EXAMINER: Okay. Fair
2 enough.

3 Pilot?

4 MR. SUAZO: No objections.

5 THE HEARING EXAMINER: He'll be so
6 recognized.

7 MR. RANKIN: At this time, also,
8 Mr. Hearing Officer, I move the admission into
9 evidence of Mr. White's rebuttal testimony in Exhibit
10 I, Attachment 1, and Exhibits I one through I13.

11 THE HEARING EXAMINER: Empire, any
12 objection?

13 MR. PADILLA: No objection, Mr.
14 Examiner.

15 THE HEARING EXAMINER: OCD?

16 MR. MOANDER: I'm going to object to
17 this to be admitted until the completion of his full
18 examination to confirm that it actually reflects his
19 testimony.

20 THE HEARING EXAMINER: Okay.
21 Mr. Beck?

22 MR. BECK: No objection.

23 THE HEARING EXAMINER: And Pilot?

24 MR. SUAZO: No objection.

25 THE HEARING EXAMINER: All right.

1 We'll reserve -- well, I'm not sure how to -- I'm
2 going to admit the exhibits over OCD's objection.

3 OCD, you're going to need to keep track
4 of what is and isn't covered in that objection -- I
5 mean in the exhibits. And, you know, you're welcome
6 to cross-examine on all of it, including stuff that
7 wasn't covered; okay?

8 MR. MOANDER: I'm acutely aware of
9 that, Mr. Hearing Officer. Thank you, though.

10 THE HEARING EXAMINER: All right.

11 Mr. Rankin?

12 MR. RANKIN: I guess if I -- depending
13 on what happens with his objection, I just wanted to
14 reserve the right to respond to anything, because my
15 understanding has been that we're simply providing a
16 summary opinion and/or any additional responses to
17 testimony provided. So yeah.

18 THE HEARING EXAMINER: Absolutely.
19 You'll have the right to respond. I guess, you know,
20 if you tender an exhibit from an expert witness that
21 has listed areas that -- you know, of testimony and
22 information that are covered, basically you're opening
23 the door, in my view, to cross-examination on that,
24 whether you examine the witness on direct on those
25 points or not.

1 MR. RANKIN: I understand. That's my
2 understanding as well.

3 THE HEARING EXAMINER: Okay. Good.

4 DIRECT EXAMINATION

5 BY MR. RANKIN:

6 MR. RANKIN: Mr. White, did you prepare
7 summary slides reflecting your analysis and opinions?

8 MR. WHITE: I did.

9 MR. RANKIN: I'm going to move to these
10 slides. I'll walk you through them. And if you
11 would, Mr. White, at a high level just review for the
12 commission -- one second. Not working. Give us an
13 explanation of what you did with -- your analysis was
14 with respect to the stratigraphic analysis and what
15 are your opinions based on your work.

16 MR. WHITE: Yeah. So as we'll -- we'll
17 cover in -- in some of the slides in this overview
18 presentation, one of our objectives was to review the
19 stratigraphy of -- of what we'd refer to as the
20 project area, the area in and around Goodnight's SWD
21 injection wells for the purposes of confirming
22 stratigraphic relationships that have been delineated
23 in -- in regional stratigraphic models.

24 To provide a little bit of overview in
25 the slide that's currently shown, we summarize

1 information relevant and opinions relating to that
2 stratigraphic analysis, first being that Goodnight's
3 existing and proposed wells are located on the western
4 edge of the central basin platform, which to the west
5 transitions into the Delaware Basin.

6 Strata of the Capitan Reef and the Goat
7 Seep are not present or have not been identified in
8 Goodnight's well locations and the San Andres margin
9 and Capitan Reef complex from our stratigraphic
10 analysis appear to be separated laterally by about two
11 to 2.6 miles.

12 In reviewing regional stratigraphic
13 models and -- and as demonstrated by local well
14 control, we interpret that the -- and confirm that the
15 San Andres formation is not stratigraphically or
16 temporarily equivalent to the Capitan Reef Complex.

17 Down towards the basin, San Andres
18 shelf facies, which are utilized as -- as saltwater
19 disposal injection zone grade to slope carbonates and
20 basinal equivalent strata.

21 Specifically the San Andres is
22 more -- is correlative to the lower Cherry Canyon and
23 Brushy Canyon, members of the Delaware Mountain Group,
24 all of which, as we'll see, underlie the Capitan Reef
25 Complex.

1 The San Andres formation in general
2 reflects cyclic deposition of shallow marine
3 carbonates and fore-slope carbonates, which grade, as
4 we mentioned, into the deeper basin to fine-grained,
5 low-porosity, and low-permeability slope carbonates
6 and further to tight silt stones, shales in some
7 instances, and fine sandstones further from the shelf
8 basin -- shelf-edge and basin-equivalent strata.

9 Porosity within the San Andres
10 Formation, as I think some of the testimony has -- has
11 mentioned at times in this case, is generally
12 facies-specific. As sediments transition basin-ward
13 to more slope fine-grained carbonates, we see a
14 general diminishment of porosity from that
15 shelf-to-slope transition and fore-slope environments.

16 And ultimately facies tracks,
17 and -- and as shown in some of the work of other
18 authors, ultimately preserves porous and non-porous
19 zones in a particularly torturous way.

20 MR. RANKIN: Just for clarification,
21 Mr. White, I think I heard you say "temporarily
22 equivalent," but I think you meant to say
23 "temporally"?

24 MR. WHITE: Temporally. That's
25 correct.

1 MR. RANKIN: Thank you. Explain what
2 this next image shows and how it relates to your
3 stratigraphic analysis.

4 MR. WHITE: So as I mentioned, what
5 we -- one of our objectives was ultimately confirm
6 results of regional stratigraphic models that are more
7 modern and are commonly presented in -- in literature
8 and -- and what we view as being -- reflecting the
9 best understanding of stratigraphic relationships.

10 This slide shows work by multiple
11 authors, including Charlie Kerans [ph], which is
12 presented in recent conferences and literature and
13 would be one of the most widely accepted stratigraphic
14 models.

15 In this model, which as you can see
16 from some of the annotations, is an exhibit that has
17 been submitted already as part of this case by other
18 experts. It shows the has annotations for the
19 Grayburg formation as well as the San Andres
20 formation.

21 And my apologies that that some of the
22 detailed information in this is probably a little
23 difficult to read.

24 But ultimately showing the Grayburg
25 formation being stratigraphically equivalent to the

1 Goat Seep and Bell Canyon geologic intervals as it
2 moves from shelf to basin sediments, whereas the San
3 Andres is stratigraphically equivalent to the Brushy
4 Canyon and the Cherry Canyon portion of the
5 stratigraphy.

6 MR. RANKIN: And just for
7 clarification, Mr. White, the additional annotations
8 here were inserted by Mr. McGuire; correct?

9 MR. WHITE: I believe that's correct,
10 yes.

11 MR. RANKIN: Anything further on this
12 slide?

13 MR. WHITE: No. Only to that effect
14 that some of the -- the text on the diagram itself is
15 in accordance with those annotations.

16 MR. RANKIN: Okay. Explain what this
17 next graph shows and where it came from and what you
18 did to annotate or change it in any way.

19 MR. WHITE: Absolutely. And this
20 is -- what is shown in here is -- is a more simplified
21 stratigraphic model that has similar interpretations
22 of the relation -- the stratigraphic relationships
23 published as noted there in Mellum and Shoal [ph],
24 which, again, in a more simplified way and -- and
25 probably easier to read, shows the stratigraphic

1 relationships of the Grayburg formation adjacent to
2 the Goat Seep Formation and Bell Canyon members as
3 well as the San Andres and -- and Cherry Canyon tongue
4 being equivalent to the Cherry Canyon and Brushy
5 Canyon Formations.

6 Now, what was modified from this
7 diagram was the portion of the diagram to the left of
8 the vertical red bar. The original publication did
9 not include the San Andres. But as we're using this
10 as a means to more clearly show those relationships,
11 that area was filled in -- in accordance with the
12 stratigraphic relationships shown in the Kerans [ph]
13 model.

14 MR. RANKIN: Anything further on this?

15 MR. WHITE: No.

16 MR. RANKIN: Okay. In this next graph
17 here or slide here, explain what these cross-section
18 lines are and how they relate to your analysis that
19 you're going to address in the subsequent slides.

20 MR. WHITE: Sure. In the general
21 location map shown to the right, we have wells in the
22 greater project area plotted as well as the transect
23 lines of four cross-sections, which were evaluated
24 to -- with the -- the primary objective of
25 confirming -- or with an objective of confirming that

1 regional stratigraphic model interpretations are what
2 is observed and the relationships of the San Andres
3 and the Capitan Reef Complex are in agreement with
4 those regional interpretations.

5 MR. RANKIN: Anything further on this
6 slide?

7 MR. WHITE: No.

8 MR. RANKIN: Next slide here, is this
9 one of the cross-section lines that you showed on the
10 previous map?

11 MR. WHITE: That's correct.

12 MR. RANKIN: Will you review what this
13 shows in your analysis?

14 MR. WHITE: Yes. And -- and this is
15 one of the cross-sections from the written testimony
16 that was submitted previously. This cross-section is
17 cross-section T1 through T2 -- T1 prime, which would
18 be the northernmost cross section in the location map
19 on the previous slide.

20 And just to make sure everybody's clear
21 with this, the cross-sections move from east to west
22 or towards the basin, such that for clarity of -- of
23 reviewing them and comparison to regional models, they
24 are both oriented in the same way.

25 So what we see as we move from the left

1 side of the cross-section, you see various colored
2 lines connecting well log information, in which
3 various geologic formations have been identified.

4 The interval that is a matter of this
5 hearing, the San Andres formation, has been
6 illustrated with the -- the background and -- and
7 annotation for disposal zone.

8 Where we interpret the transition of
9 the San Andres into various basinal-equivalent facies
10 or slope-to-basin facies have been illustrated with
11 brown and various infilled backgrounds.

12 MR. RANKIN: And just to be clear, Mr.
13 White, if I'm looking at this from -- on the left side
14 is east and the right side is west; correct?

15 MR. WHITE: That is correct. Moving
16 from shelf to basin environments.

17 MR. RANKIN: And that's true for each
18 of the following cross sections; right? Is that true
19 for each of the following --

20 MR. WHITE: That would be -- that would
21 be correct. However, for -- for the purposes of -- of
22 this overview presentation, this is the only cross
23 section that is included in this presentation.

24 MR. RANKIN: Got it.

25 MR. WHITE: However, the other

1 cross-sections that were shown in the location map are
2 included in the written testimony.

3 MR. RANKIN: Thank you. Okay. What
4 does this next slide show and, again, how does it
5 relate to your analysis regarding es stratigraphy in
6 the area?

7 MR. WHITE: Could we -- could we also
8 go back to the previous slide so I can make one more
9 kind of description?

10 MR. RANKIN: Oh, yeah.

11 MR. WHITE: So overall as we look at
12 the cross-section, what we interpret is that the
13 stratigraphy and through the analysis of -- of other
14 cross sections as we moved from basin -- or from shelf
15 to basin, north to south across the project area is
16 that we do see results that are in agreement with
17 regional stratigraphic models where
18 Delaware Basin-equivalent strata are -- are
19 stratigraphically equivalent to San Andres Formation
20 in the way of the Brushy Canyon member and the
21 Cherry -- the lower Cherry Canyon member of the
22 Delaware Mountain Group.

23 We also see in the westernmost portion
24 of this cross section the last and the previous wells
25 as being the wells where we interpret the Capitan Reef

1 and/or Goat Seep brief being present.

2 MR. RANKIN: Thank you. Anything
3 further on this slide, Mr. White?

4 MR. WHITE: No.

5 MR. RANKIN: Okay. Next slide here,
6 explain what these two diagrams show and how they
7 relate to your analysis of the San Andres.

8 MR. WHITE: So in conjunction with the
9 stratigraphic analysis, we also want to understand any
10 potential connectivity to overlying an adjacent
11 strata.

12 And what our research and log analysis
13 has yielded is ultimately we expect that towards the
14 basin -- as San Andres formation shelf deposits
15 transition to finer grain muds and slope transitional
16 sediments into the deeper basin, we expect and
17 literature would support a diminishment of porosity in
18 that direction.

19 And what is shown in Panel A of this
20 slide is a figure modified from Sarge and Leman [ph]
21 1986 in which San Andrew's formation facies tracks
22 were -- were assessed in about -- described. And the
23 Panel A shows the facies tracks associated with the
24 San Andres from left, more landward facies progressing
25 to the right to more basinal facies or basin-ward

1 facies.

2 And I think it's been provided in
3 testimony and in characterization of the San Andres
4 formation, porosity generally is most frequently found
5 in grainstone-dominated facies; whereas more landward
6 evaporite facies, porosity is less developed and also
7 less developed within the basin or -- or the
8 shelf-to-basin transition intervals.

9 And so what's shown here
10 diagrammatically in Panel A is as the San Andres
11 formation is a progradation or a reflection of
12 progradation systems, these facies, of which porosity
13 develops at times and facies in which -- are less
14 likely to have porosity development, as these shelf
15 systems prograde basin-ward, it ultimately can produce
16 complex vertical units of porous and non-porous
17 carbonates.

18 MR. RANKIN: Anything further on that
19 slide, Mr. White?

20 MR. WHITE: Yeah. I'd like to move to
21 Panel B.

22 MR. RANKIN: Oh, yeah.

23 MR. WHITE: Panel B is the result of
24 the work of one of our geologists in a consulting
25 fashion, which was completed on the Penwell field in

1 Ector County, Texas.

2 And what we're seeing is the resultant
3 interpretation of that work, which included the
4 description and collection of core from the San Andres
5 as well as the description and investigation utilizing
6 cuttings.

7 And based on these spacing -- or -- or
8 based on this analysis, the final interpretation was
9 in accordance with the -- the reservoir
10 characteristics in Panel A in that the interpretation
11 included intervals of stacked and more complicated
12 intervals of porous and -- and non-porous carbonates.

13 MR. RANKIN: Didn't mean to cut you off
14 on Panel B. Anything further on this one?

15 MR. WHITE: No. I don't think so.

16 MR. RANKIN: Okay. This next slide
17 here, Mr. White, explain what these two images show
18 and how they relate to your assessment about the
19 San Andres relative to the Capitan Reef.

20 MR. WHITE: So the diagrams included in
21 this slide are ultimately a product of -- of
22 demonstrating the results of our stratigraphic
23 analysis.

24 The first shown in the top left, which
25 is annotated as Panel B illustrates a cross-sectional

1 view of the project area as we understand it from well
2 log analysis; whereas we see the approximate western
3 extent of the San Andres shelf, the approximate
4 western extent of the Grayburg shelf, and an
5 annotation of the lateral distance between the
6 San Andres shelf margin and the back reef extent of
7 the Capitan Reef Complex. That's denoted by the red
8 double-ended arrow.

9 Also, what is shown is diagrammatically
10 the vertical offset and the intervening strata of the
11 Bell Canyon member that separates basinal equivalent
12 San Andres Formation sediments from the base of the
13 Capitan Reef Complex.

14 In the panel to the right, which is
15 labeled as A, we see a map view of that interpretation
16 where based on the well log data we approximate the
17 San Andres shelf edge we -- and to approximate the
18 basin-to-slope transition area and the -- the
19 eastern-most edge of the Capitan Reef Complex.

20 MR. RANKIN: Anything further on this
21 one, Mr. White?

22 MR. WHITE: No.

23 MR. RANKIN: Review for us what you did
24 in terms of reviewing and confirming the work that
25 Goodnight had done evaluating the chemistry aspects of

1 the San Andres.

2 MR. WHITE: Sure. And similar to one
3 of the previous slides, the information in this slide
4 just provides a review of some of the critical
5 information about this work as well as our opinions
6 regarding this work.

7 And as stated here, Geolex was asked to
8 conduct essentially what would be a peer review of
9 Goodnight's methodology for verification of
10 groundwater data.

11 This was based ultimately on their
12 objectives to better characterize what available
13 groundwater data they had for the San Andres
14 formation, which as part of our peer review included
15 USGS-reported sampling, the NATCARB, gotech databases
16 as well as review of the Hiss 1975 data within the
17 greater project area.

18 In completing this review data, you
19 know, reported samples were scrutinized to gather as
20 much information about the well construction history.
21 Well documents were reviewed to verify if the
22 circumstances of each particular well or sample was
23 adequate for identifying it to be solely sourced from
24 the San Andres formation rather than being a
25 commingled sample, a sample that was incorrectly

1 reported or incorrectly transcribed.

2 And as part of this, the -- Goodnight
3 had, I believe through a FOIA request, attained some
4 of the supplemental tabulated information from the
5 Hiss 1975 work. So those data were crosschecked
6 against map data to -- to ensure that all of the data
7 could be confirmed.

8 So some of the examples of a sample
9 that couldn't be verified is -- I -- I briefly
10 mentioned would be looking at the data and seeing that
11 a well never was drilled to the depth to reach the
12 San Andres. In those instances, those data would not
13 be included in a regional analysis, as they could not
14 be verified to be solely reflective of San Andres.

15 Additionally, if well documents or
16 records suggested that the sampling was done in an
17 open hole that -- that appeared to be commingled with
18 another formation, those would not be included in
19 Goodnight's kind of regional compilation of data and
20 verification of data.

21 With respect to the area that we
22 reviewed, which is, I believe, 14 contiguous sections
23 in the area of -- of Goodnight's wells near Hobbs,
24 New Mexico, we have on a sample-by-sample basis
25 reviewed those documents and -- and agree with

1 Goodnight's verification of those data.

2 MR. RANKIN: Anything further on this
3 slide?

4 MR. WHITE: Yes. But -- but there's a
5 little bit of -- one more thing. So kind of separate
6 from this, moving to a different topic, as described
7 in the last bullet point here, as the topic of
8 potential communication with the Capitan Reef and
9 underground sources of drinking water, we also
10 reviewed and did brief -- brief review of -- of
11 documents in and around the Hobbs and Eunice,
12 New Mexico, area to understand if those communities or
13 municipalities had any reliance on the Capitan Reef.

14 MR. RANKIN: And you'll address that in
15 a subsequent slide?

16 MR. WHITE: That's correct.

17 MR. RANKIN: Okay. Anything further in
18 this slide?

19 MR. WHITE: No.

20 MR. RANKIN: Okay. Here, explain what
21 you've done to verify the data and what the results
22 show.

23 MR. WHITE: Shown in this slide is the
24 result of our peer review, which show the mapped
25 locations for groundwater sample data that were

1 available to us for the review. Ultimately, this
2 verification process was applied, as I mentioned
3 previously, to the USGS data, the NATCARB, and -- and
4 gotech data.

5 And in this map, we show those data
6 points which have -- can be confidently verified as
7 being sourced from the San Andres formation. This map
8 also includes additional data that have been reported
9 in -- in published literature, for example, of
10 Strickland, et al, and samples that were the analysis
11 records were provided and are reflective of Goodnight
12 Midstream's SWD wells.

13 MR. RANKIN: Anything further on this
14 slide?

15 MR. WHITE: Only that the -- it may be
16 a little difficult to see -- but kind of the -- the
17 pinkish, reddish polygons that are coloring in certain
18 township and ranges are the location -- or are the
19 locations for which our review was completed.

20 MR. RANKIN: Okay. I think this is
21 your last slide. Mr. White, just explain what you did
22 in addition to the chemistry study to evaluate
23 potential reliance on drinking water in the
24 communities around this area.

25 MR. WHITE: Yes. This slide shows

1 essentially three excerpts and -- and sources of
2 information about groundwater supplies or water
3 supplies for areas of Hobbs, New Mexico; Eunice,
4 New Mexico; and a quick excerpt from a regional water
5 plan developed by the office of the State engineer.

6 What excerpts of the text of these
7 reports is included is for Hobbs and Eunice,
8 respectively, statements in these reports that confirm
9 that these municipalities currently have no reliance
10 on the Capitan, solely sourcing their municipal water
11 supplies from shallow groundwater of the Ogallala
12 aquifer.

13 These reports are -- were -- or were
14 distributed in 2023. Since submittal of my written
15 testimony, I have reviewed 2024 Hobbs, New Mexico,
16 reports that -- that show that this is still in
17 accordance.

18 The Lea County regional water plan, the
19 excerpt that is included here ultimately speaks to the
20 quality of groundwater resources in the Capitan being
21 characterized as very poor and as has been
22 communicated by other experts in this case, ultimately
23 that total dissolved solids concentrations range in
24 excess of 10,000 parts per million or milligrams per
25 liter and ultimately exceed thresholds required for

1 USDW groundwater.

2 MR. RANKIN: Anything further on this
3 last side, Mr. White?

4 MR. WHITE: No.

5 MR. RANKIN: Now, Mr. White, this
6 testimony you just provided is a summary of the
7 testimony that you've adopted as your own in your
8 Rebuttal Exhibit I; correct?

9 MR. WHITE: That is correct.

10 MR. RANKIN: And each of these reports
11 that you refer to, they're included in their entirety
12 and as attachments or exhibits to your testimony?

13 MR. WHITE: That is correct.

14 MR. RANKIN: And you didn't address
15 every one of your exhibits in your testimony, but
16 through the adoption of your rebuttal testimony, those
17 exhibits are incorporated and referenced in your
18 testimony; correct? In your written testimony?

19 MR. WHITE: That is correct.

20 MR. RANKIN: Mr. Hearing Officer, I
21 don't believe I have any further questions of
22 Mr. White and make them available for
23 cross-examination on not only what he said here, but
24 on his written rebuttal testimony as well.

25 THE HEARING EXAMINER: Thank you for

1 making that perfectly clear.

2 Empire?

3 MR. PADILLA: Mr. Examiner, we've
4 agreed with Mr. Moander that he be allowed to go
5 first. We don't have any cross-examination of
6 Mr. White unless Mr. Moander can come up with
7 something dramatically different.

8 THE HEARING EXAMINER: That piques your
9 interest? All right.

10 Mr. Moander, you're up.

11 MR. MOANDER: And I'll represent that
12 that is correct from Mr. Padilla. I don't anticipate
13 going into areas that will arouse a need for further
14 examination or any examination by Goodnight.

15 CROSS-EXAMINATION

16 BY MR. MOANDER:

17 MR. MOANDER: Mr. White, I'm going to
18 need just a second to get my screens up, and my poor
19 computer is really tired of my PDF collection. All
20 right. There we go. All right. And can -- do I need
21 to zoom in for you a little bit, Mr. White? Because
22 that's -- I realize I highlighted it. It also doesn't
23 look great on the screen.

24 MR. WHITE: No, sir. I can -- I can
25 navigate it.

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1 MR. MOANDER: Excellent. And I think
2 you could probably guess just reading this that this
3 comes from your rebuttal testimony; is that right?

4 MR. WHITE: That is correct.

5 MR. MOANDER: And that'd be -- at this
6 point we're looking at paragraphs 13 and 14, so
7 paragraph 13 outlines what I'll describe here as sort
8 of data sources that both, I'd say, you and Goodnight
9 relied upon; is that correct?

10 MR. WHITE: That's correct.

11 MR. MOANDER: That includes -- and this
12 won't be a comprehensive list, but to give some
13 examples and particularity -- USGS data?

14 MR. WHITE: That's correct.

15 MR. MOANDER: Gotech data?

16 MR. WHITE: That's correct.

17 MR. MOANDER: NATCARB as well?

18 MR. WHITE: That's correct.

19 MR. MOANDER: Independent well data?

20 MR. WHITE: That's correct.

21 MR. MOANDER: And we saw just saw the
22 municipal reports on the last document; is that right?
23 We'll call them municipal or county documents that
24 you --

25 MR. WHITE: You -- you mean summarized

1 on the last slide?

2 MR. MOANDER: Yes.

3 MR. WHITE: Oh, yes. That's correct.

4 MR. MOANDER: And then you had some
5 test data from individual wells?

6 MR. WHITE: That's correct.

7 MR. MOANDER: So then going to
8 paragraph 14, this is what I've labeled sort of the
9 methods or methodology. For example, one of the
10 things that was done is data was controlled through
11 screening for confirming formations and interval
12 depth?

13 MR. WHITE: That's correct.

14 MR. MOANDER: Would it surprise you to
15 hear that OCD thinks this is a good model, and we
16 appreciate the work that was done on it?

17 MR. WHITE: No. I don't think so.

18 MR. MOANDER: And in your opinion,
19 would you construe this as comprehensive, your report
20 and your analysis?

21 MR. WHITE: I mean as a -- as a
22 scientist, I think it is comprehensive in -- with
23 respect to the available data.

24 MR. MOANDER: That's an excellent
25 point, Mr. White. I appreciate that. So more quality

1 data improves analysis, doesn't it?

2 MR. WHITE: Absolutely. And -- and I
3 think ultimately that is some of the motivation for
4 this work in making sure however these reservoirs
5 and -- and relationships are interpreted, they are
6 based on data that there is a confidence in.

7 MR. MOANDER: And OCD absolutely agrees
8 with you. And, in fact, if we look at paragraph 13,
9 the second sentence says "Goodnight has completed a
10 review of available groundwater data for the purpose
11 of developing a more thorough spatial assessment of
12 regional groundwater characteristics and building upon
13 the work of prior investigators"; right?

14 MR. WHITE: That's correct.

15 MR. MOANDER: And then Geolex also
16 seems to really believe in that, because the first
17 sentence in paragraph 15 says "As part of our
18 retention, Geolex completed a peer review of Goodnight
19 Midstream's methodology for the verification of
20 groundwater chemistry data"; right?

21 MR. WHITE: That's correct.

22 MR. MOANDER: I do not have any
23 additional questions for this witness. I will pass
24 the witness.

25 THE HEARING EXAMINER: All right.

1 We're going to call him one of OCD's witnesses based
2 on that cross-exam. Just kidding.

3 All right. Rice, questions for
4 Mr. White? Oh, I'm sorry.

5 MR. MOANDER: I'm going to stop the
6 sharing here, too.

7 THE HEARING EXAMINER: Thank you.

8 Mr. Padilla, was there anything there
9 that was of such significance to Empire that you would
10 like to cross examine Mr. White?

11 MR. PADILLA: Nothing, Mr. Examiner.

12 THE HEARING EXAMINER: Thank you.

13 All right. Mr. Beck, for Rice?

14 MR. BECK: No questions.

15 THE HEARING EXAMINER: And, Mr. Suazo,
16 for Pilot?

17 MR. SUAZO: No questions.

18 THE HEARING EXAMINER: Okay. Thank
19 you.

20 MR. SUAZO: Let's reverse order.
21 Dr. Ampomah, let's start with you.

22 CROSS-EXAMINATION

23 BY DR. AMPOMAH:

24 DR. AMPOMAH: Thank you, Mr. White, for
25 your testimony today. I probably will be very, very

1 short and brief.

2 So I want to know. So from -- if we
3 can have your Slide Number 3 up, I do have a quick
4 question there. Okay. Now, and probably maybe let's
5 go to the Number 4. I think that one was more or less
6 much better. Yeah. Right here.

7 So is the -- is the Goat Seep in
8 communication with the Capitan Reef based on your
9 analysis?

10 MR. WHITE: So we didn't really look at
11 the relationship of the Goat Seep Reef to the Capitan
12 and that interface and what to expect in terms
13 of -- of communication between the two.

14 In looking at the base of the Goat Seep
15 and the Grayburg, it -- it does look like the base of
16 the Goat Seep is more dolomitic. It seems a little
17 tighter, at least for a limited interval at that
18 interface. But didn't explore the relationship
19 between the Goat Seep and Capitan with respect to
20 communication.

21 DR. AMPOMAH: Now, let me ask. Is the
22 Goat Seep an aquifer that is a concern?

23 MR. WHITE: An aquifer in terms of a
24 USDW?

25 DR. AMPOMAH: Yeah.

1 MR. WHITE: I don't believe so.

2 DR. AMPOMAH: Now, you said you did not
3 really look into the relationship between the go see
4 and the Capitan Reef.

5 Now, don't you believe -- or could
6 there be a possibility where, let's say, if there is
7 any communication between the Goat Seep and the
8 reservoir, either the Greenberg, or the San Andres,
9 there could be a the point in time where there can be
10 some impact, you know, on the Capitan Reef from the
11 Goat Seep?

12 MR. WHITE: Well, I think ultimately
13 the characteristics of the -- the geologic strata that
14 separate vertically those two intervals, we have
15 confidence and they -- and they display
16 characteristics that I -- that I don't think they
17 would have much transmission capability between them.

18 As we move out of the San Andres in the
19 basin-ward direction, we expect to see and
20 facies-tracked progression would expect to see low
21 permeability, and -- and thus reduced communication in
22 the basin-ward direction.

23 Additionally, when we're transitioning
24 into the silts and the finer grain clastic sediments,
25 again, we would expect not a lot in terms of vertical

1 communication potential.

2 DR. AMPOMAH: Are there any existing
3 monitoring -- monitoring wells -- or let's say
4 monitoring capabilities that is probably in
5 the -- that exist in the Capitan Reef that you know?

6 MR. WHITE: Not that I am immediately
7 aware of at this moment. I know -- I know there's
8 limited data I think at times in terms of -- of being
9 able to monitor it.

10 DR. AMPOMAH: Now, do we know the
11 chemistry of the Capitan Reef? The water chemistry?

12 MR. WHITE: While we didn't, you know,
13 complete any comprehensive water chemistry study, I
14 think, you know, the aggregate of -- of kind of water
15 compilation data could be utilized for that.

16 DR. AMPOMAH: So if OCD is requesting
17 for monitoring in the Capitan Reef as a result of any
18 operations that is ongoing, do we have a baseline?

19 MR. WHITE: Well, I think we would -- I
20 think we would need to establish one.

21 DR. AMPOMAH: Okay. Thank you, sir.
22 No further questions.

23 THE HEARING EXAMINER: Okay.

24 Mr. Lamkin?

25 MR. LAMKIN: I do not have any

1 questions for Mr. White. Thank you.

2 THE HEARING EXAMINER: All right.

3 Chairman Razatos, questions for

4 Mr. White?

5 MR. RAZATOS: I do not have any

6 questions for Mr. White either.

7 Thank you, Mr. White.

8 THE HEARING EXAMINER: Mr. Shandler,

9 any questions from you?

10 All right. Then we come back to

11 Mr. Rankin for redirect of Mr. White.

12 MR. RANKIN: Mr. Hearing Officer, I

13 have no redirect for Mr. White.

14 THE HEARING EXAMINER: Okay.

15 Empire, may this witness be excused?

16 MR. PADILLA: Yes, sir, he may.

17 THE HEARING EXAMINER: OCD?

18 MR. MOANDER: Yes, sir.

19 THE HEARING EXAMINER: Rice?

20 MR. BECK: Yes.

21 THE HEARING EXAMINER: Pilot?

22 MR. SUAZO: Yes.

23 THE HEARING EXAMINER: All right.

24 Thank you. I think, for the record, that sets a

25 record for witness duration in this case.

1 MR. WHITE: I'm glad that I hold it.

2 THE HEARING EXAMINER: Okay. So what
3 are we going to do now, Mr. Rankin?

4 MR. RANKIN: I want to stick around for
5 the duck quack. I'm just kidding. I think we can all
6 get 15 minutes of our lives back. We will -- at the
7 pleasure of the Commission, I would ask that we resume
8 on May 19th with our final witness, Mr. Preston
9 McGuire.

10 THE HEARING EXAMINER: Okay. He's not
11 available now?

12 MR. RANKIN: No. Nor have we completed
13 a summary slide, since we haven't shared them with
14 counsel. I did not expect that we would've set a
15 record today, so I didn't know that we were going to
16 be done.

17 THE HEARING EXAMINER: Well, I'll just
18 tell you what John Conway told me a number of years
19 ago: when you're out of witnesses, you are out of
20 trial.

21 MR. RANKIN: Well --

22 UNIDENTIFIED SPEAKER: I second that
23 motion.

24 MR. RANKIN: Yeah. I understand.

25 THE HEARING EXAMINER: All right.

1 Okay. Well, you guys have done really well on the
2 timing. It makes me wish that we'd impose these time
3 limits three weeks ago.

4 MR. RANKIN: Mr. Hearing Officer, I
5 guess there's one item that's open still on the last
6 witness, and that was I guess Mr. Moander's objection
7 to admission of that Exhibit I, so -- and his
8 attachment, so I just want to make sure that that's
9 been resolved.

10 MR. MOANDER: I'll withdraw my
11 objection.

12 THE HEARING EXAMINER: Okay. Thank
13 you. They were admitted over your objection now
14 they're admitted under your objection. Thank you.

15 MR. RANKIN: I just wanted to make sure
16 that was -- I didn't know if the record was clear.

17 THE HEARING EXAMINER: Okay.
18 Appreciate it.

19 Mr. Shandler?

20 MR. SHANDLER: During the next break of
21 time, are the parties going to get together and have a
22 stipulated post-hearing schedule of findings of fact,
23 et cetera? And when would we expect to see that?

24 MR. MOANDER: Just to clarify you mean
25 not right now? Like, during the interim, prior to the

1 reconvening of the hearing?

2 MR. SHANDLER: Mr. Hearing Officer.

3 Yeah. I'm not going to put you on the spot now, but I
4 would like you during the interim to work together and
5 have a stipulated calendar post hearing.

6 MR. MOANDER: OCD will agree to work on
7 that. I don't think that should pose a problem unless
8 somebody else does.

9 MR. RANKIN: I think that's a good
10 idea, Mr. Shandler. And we will engage with parties
11 to confer.

12 THE HEARING EXAMINER: And we're just
13 talking about the timing of those submissions? Or --

14 MR. SHANDLER: Mr. Hearing Officer,
15 that's probably going to be an important point. I
16 would like the parties to think about page limits, but
17 I'm not dictating things. Hopefully, they can agree
18 to what they think they can make their presentation
19 with without being cumulative.

20 MR. RANKIN: One other item,
21 Mr. Shandler, I guess you mentioned findings of facts
22 and conclusions of law. Are there other post-hearing
23 submissions that you were contemplating we confer
24 about?

25 MR. SHANDLER: So, Mr. Hearing Officer,

1 I remember someone saying they wanted to legal briefs.
2 I don't know if that can be wrapped into the
3 conclusions. I'll let you guys figure that out.

4 MR. RANKIN: Okay. And then on the
5 assumption that we will be able to complete, I guess
6 it's an open question whether we'll be able to reserve
7 time for closing arguments. In the event we don't,
8 does the Commission prefer written closings to go with
9 the findings of fact and conclusions of law in the
10 event we do not have time for oral closings?

11 MR. SHANDLER: These are all details
12 for the lawyers to figure out.

13 MR. RANKIN: Okay. Very good. Before
14 we confer, I wanted to know if there was a preference
15 from the commission. I guess that was my -- that's
16 why I raised it; so --

17 MR. SHANDLER: I guess my last word is
18 concise and excellent findings of fact that I can cut
19 and paste.

20 MR. RANKIN: Sure. That will be all of
21 our goals. Yeah. Thank you.

22 THE HEARING EXAMINER: I think
23 Mr. Shandler's at a bit of a disadvantage, because he
24 wasn't here when these issues were first discussed.
25 So, you know, you guys wanted the oral closing

1 arguments, and if there's time, we'll hear that.

2 I think the point that was made early
3 on in these proceedings is that the Commission is
4 probably more interested in findings of fact and
5 conclusions of law than it is -- I mean, I know that
6 your erudite closing arguments will be of great
7 assistance to the Commission.

8 But by the same token, we all have
9 heard -- and cringed, probably -- at the jury
10 instruction that says that, you know, what lawyers say
11 is not evidence. So that's just to recap, you know,
12 what we discussed early on before Mr. Shandler took
13 over the reins here.

14 All right. Well, I guess you guys
15 unless you want to hang around for the duck quack.

16 MR. WAYMEYER: And I apologize. My
17 understanding was that there had been some request
18 that on the exhibits we handled earlier today, that
19 we, that we clicked through them with a number
20 assigned to them just for the record.

21 I'm happy to do that. If that's not
22 something productive, I don't need to do that. But my
23 understanding was someone made that request. Ms.
24 Apodaca. This will take two minutes or less. I'll
25 put on the record --

1 THE HEARING EXAMINER: Are these the 14
2 exhibits that we went over this morning?

3 MR. WAYMEYER: So what I have is Empire
4 Cross, all of these will be Empire Cross Exhibits.
5 Number 1 will be the simulation model vertical
6 permeability spreadsheet. Number 2 will be simulation
7 model vertical permeability distribution.

8 Number 3 will be 1959 pressure
9 calculation for EME Number 20. Number 4 will be
10 Rice's EME 20 bottom hole pressure survey. Number 5
11 will be Rice's EME 20 wellboard diagram. Number 6
12 will be pressure depletion from EME 20 BHP in 1959 to
13 RFT pressure points in 1986.

14 Number 7 will be the impact of rock
15 facies on oil saturation. Those are three slides.
16 Those are the Scott Birkhead slides. Number 8 will be
17 Grayburg conventional core measurements. Those are
18 four slides, being the EMSU 649, 650, 653 and 710.
19 Number 9 will be the SPE 122921 estimates of potential
20 CO2 demand for CO2 EOR in Wyoming basins.

21 Number 10 will be Goodnight fluid level
22 data as of April 7, 2025. Number 11 will be water
23 saturation from EMSU working interest owners meeting
24 in 1990.

25 That concludes the numbered exhibits

1 that'll be coming for filing.

2 THE HEARING EXAMINER: Okay. And that
3 doesn't include the one that I have that was not
4 admitted, the economic sensitivity?

5 MR. WAYMEYER: That's correct. That
6 one is not in that list.

7 THE HEARING EXAMINER: Okay. Well, all
8 right. Okay. Well, thank you for -- that'll, I
9 guess, make the record clear.

10 Anything further from Goodnight for
11 today, at least?

12 MR. RANKIN: No. Thank you very much.

13 THE HEARING EXAMINER: Anything further
14 from Empire?

15 MR. WAYMEYER: Nothing further from
16 Empire, and we thank the Commission and all
17 participants for their patience and time.

18 THE HEARING EXAMINER: I see OCD
19 packing up. I suspect that means nothing further
20 for --

21 MR. MOANDER: I have nothing further to
22 discuss, say, or talk about this case for the rest of
23 the day. I've said all I got to say.

24 THE HEARING EXAMINER: Rice?

25 MR. BECK: Nothing from Rice.

1 THE HEARING EXAMINER: And Pilot?

2 MR. SUAZO: Nothing further from Pilot.

3 THE HEARING EXAMINER: All right.

4 Well, thank you all for an interesting week. We'll
5 see you back again on May the 19th.

6 Mr. Razatos, any parting comments or
7 items you need to cover before we go off the record?

8 MR. RAZATOS: No, I do not have
9 anything. Thank you, everybody. Have a great
10 weekend.

11 THE HEARING EXAMINER: Okay. Thank you
12 all.

13 Madam Court Reporter, we'll be off the
14 record until May the 19th.

15 THE REPORTER: We are off the record.
16 The time is 1:59 p.m.

17 (Whereupon, at 1:59 p.m., the
18 proceeding was concluded.)

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CERTIFICATE

I, NICOLE JOHNS, the officer before whom the foregoing proceedings were taken, do hereby certify that any witness(es) in the foregoing proceedings, prior to testifying, were duly sworn; that the proceedings were recorded by me and thereafter reduced to typewriting by a qualified transcriptionist; that said digital audio recording of said proceedings are a true and accurate record to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.



NICOLE JOHNS

July 1, 2025

Notary Public in and for the
State of Texas

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CERTIFICATE OF TRANSCRIBER

I, JACOB MYERS, do hereby certify that this transcript was prepared from the digital audio recording of the foregoing proceeding, that said transcript is a true and accurate record of the proceedings to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

July 1, 2025



JACOB MYERS

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