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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 CONVERSATION
DIVISION FOR THE PURPOSE OF Docket No. 16-23 OCD
CONSIDERING:

Case Nos. 23448, 23449, 23450,
23451, 23452, 23453, 23454,
23455, 23594, 23595, 23596,
23597, 23598, 23599, 23600,
23601, 23508, 23509, 23510,
23511, 23512, 23513, 23514,
23515, 23516, 23517, 23518,
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VIDEOCONFERENCE HEARING

DATE: Thursday, August 10, 2023
TIME: 9:45 a.m.
BEFORE: Honorable Examiner Felicia Orth
LOCATION: Remote Proceeding
Albuquerque, NM 87102
REPORTED BY: Dana Fulton, Notary Public
JOB NO.: 6031756

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A P P E A R A N C E S

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

ON BEHALF OF OIL CONSERVATION DIVISION:

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ALSO PRESENT:

Marlene Salvidrez, Host (by videoconference)
John Coffman, Landman, Coterra Energy Company (by
videoconference)
Staci Mueller, Geologist, Cimarex Energy Company
(by videoconference)
Kody Murphy (by videoconference)

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E X H I B I T S

NO.	DESCRIPTION	ID/EVD
Exhibit C	Self-Affirmed Statement of Travis Macha	232/232
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P R O C E E D I N G S

THE HEARING EXAMINER: At least one more witness. Let's see.

MR. ZIMSKY: Madame Examiner, I'm calling Eddie Behm, who has just appeared on video.

THE HEARING EXAMINER: Okay. Having just a little trouble hearing you, Mr. Zimsky.

MR. ZIMSKY: Is that any better?

THE HEARING EXAMINER: Yeah. When you keep your voice up, that's better. All right.

Mr. Behm, if you would please raise your right hand. I can't hear you. Maybe decided to get off and come back on. We'll see.

MR. BEHM: Can you hear me now?

THE HEARING EXAMINER: Yes.

MR. ZIMSKY: We can't see you.

THE HEARING EXAMINER: We can't see you, though. Oh. There you are.

MR. BEHM: All right. Thank you. I'm so sorry. And my answer was yes, ma'am, to the --

THE HEARING EXAMINER: Wow. Okay. Everyone but me disappeared from the screen.

MR. ZIMSKY: I can see Adam, Madame Examiner, and Mr. Behm.

THE HEARING EXAMINER: Okay. So all I

1 see are gray boxes for all of you, who I had been
2 seeing, which doesn't trouble me that much, except
3 insofar as it indicates there's still some potential
4 connectivity issues.

5 But, Mr. Behm if I could just hear you
6 say for the transcript that you will swear or affirm
7 to tell the truth.

8 WHEREUPON,

9 EDDIE BEHM,

10 called as a witness and having been first duly sworn
11 to tell the truth, the whole truth, and nothing but
12 the truth, was examined and testified as follows:

13 DIRECT EXAMINATION

14 BY MR. ZIMSKY:

15 Q And, Mr. Behm, could you spell your name for
16 the court reporter.

17 A E-D-D-I-E, B-E-H-M.

18 Q Thank you. And you have your self-affirmed
19 statement of Eddie Behm in front of you?

20 A Yes.

21 Q And are the statements in -- is the contents
22 of your statement correct and accurate?

23 A Yes.

24 Q And the exhibits attached to your statement,
25 Exhibit D1 through D24. Were those prepared by you or

1 under your supervision or from corporate records that
2 you supervised the compilation of this data?

3 A Yes.

4 Q And are they correct and accurate, to the
5 best of your knowledge?

6 A Yes.

7 Q And, Mr. Behm, have you ever testified
8 before the division?

9 A Yes.

10 Q Have you been admitted as an expert in
11 reservoir engineering?

12 A Yes, sir.

13 Q And petroleum engineering. Is that correct?

14 A Yes, sir.

15 MR. ZIMSKY: Ms. Examiner, can you hear
16 us?

17 MS. SALVIDREZ: I can hear you all. I
18 think she's having internet issues.

19 MR. ZIMSKY: Okay. Yeah. She sort of
20 popped -- I can see her gray box. I'm not going to
21 continue with this until -- that's why, you know, I
22 didn't see her video. So I thought she might still
23 have the audio. Let's hold off and probably ask all
24 those questions again, because I didn't notice when
25 she left.

1 MS. SALVIDREZ: Yeah. Let's hold off.
2 And she said that she turned off her camera. Let me
3 call her. Hold on. She is calling in.

4 (Off the record.)

5 THE HEARING EXAMINER: I am now on the
6 phone. This is Felicia Orth. Mr. Zimsky had just
7 introduced Mr. Behm. Mr. Behm was sworn. I did hear
8 the part where Mr. Zimsky asked Mr. Behm if he had his
9 affidavit statement in front of him and was adopting
10 that. But shortly after that, I could not hear
11 anything at all.

12 Can you pick up from there, Mr. Zimsky?

13 MR. ZIMSKY: Yes, I can.

14 BY MR. ZIMSKY:

15 Q Mr. Behm, your statement. Was that prepared
16 under your direction and your input?

17 A Yes.

18 Q Are the statements set forth -- is the text
19 and the narrative set forth in your statement correct
20 and accurate to the best of your knowledge?

21 A Yes.

22 Q And the exhibits that were attached to your
23 statement, Exhibit D -- as in delta -- D1 through D24.
24 Did you prepare those or were they prepared under your
25 supervision and approval?

1 A Yes.

2 Q And are they correct and accurate to the
3 best of your knowledge and belief?

4 A Yes.

5 MR. ZIMSKY: Your Honor, I would move
6 to introduce the self-affirmed statement of Eddie
7 Behm, Exhibit D, and his exhibits attached to Exhibit
8 D1 through D24 -- I'd like to move that into evidence
9 in cases 23448 through 23451 and cases 23594 through
10 23597 and cases 23452 through 23455 and cases 23591
11 through case 23601.

12 THE HEARING EXAMINER: All right. I'm
13 going to pause for a moment. In the event Mr. Rankin
14 or any other party has an objection, please just speak
15 up. All right. The exhibits are admitted. Thank
16 you, Mr. Zimsky.

17 (Exhibit D was marked for
18 identification and received into
19 evidence.)

20 BY MR. ZIMSKY:

21 Q Mr. Behm, have you ever testified before the
22 Oil Conservation Division of New Mexico?

23 A Yes.

24 Q And have you been recognized as an expert in
25 petroleum engineering and petroleum reservoir

1 engineering?

2 A Yes.

3 MR. ZIMSKY: Madame Examiner, I would
4 proffer Mr. Behm as an expert in petroleum engineering
5 and reservoir engineering.

6 THE HEARING EXAMINER: All right. I'm
7 going to pause for a moment in the event any other
8 party has an objection. Please speak up if you do.
9 He is recognized, Mr. Zimsky. Thank you.

10 BY MR. ZIMSKY:

11 Q Okay, Mr. Behm. We're going to go -- as
12 we've agreed to do the procedure, I'm going to go into
13 your direct testimony, your statement, and exhibits.
14 But we will go back to them in response to -- we're
15 going to look at -- is it Fachtel? Is that his name?

16 THE WITNESS: Adam, can you help me out
17 with that pronunciation.

18 MR. RANKIN: Sorry. It's Fachtel.

19 MR. ZIMSKY: Fachtel?

20 MR. RANKIN: Fachtel.

21 MR. ZIMSKY: Fachtel. Okay.

22 BY MR. ZIMSKY:

23 Q Mr. Behm, have you looked at the engineering
24 exhibits F2 through F8 that Permian Resources has
25 submitted in this case?

1 A Yes. I -- I have.

2 Q Okay. I'm going to go through some of those
3 exhibits and ask you some questions about that. I'm
4 going to first share --

5 MR. ZIMSKY: Madame Examiner, will you
6 be able to see the shared --

7 THE HEARING EXAMINER: I will not.
8 Until I get full internet access back -- and I will
9 keep trying -- I won't be able to see it. But I can
10 see exhibits which I have downloaded onto my computer.
11 If you just make sure to reference the exhibit number
12 in the page.

13 MR. ZIMSKY: I will do that.

14 BY MR. ZIMSKY:

15 Q And right now I'm sharing -- or I think I'm
16 sharing the Exhibit F2, Mr. Behm. Do you use that?

17 A Yes, sir.

18 Q Okay. And I wanted to direct your attention
19 to, on the right-hand side, number one. It talks
20 about -- I guess it's area number one. Now, were you
21 here when Ms. Mueller testified about the little bear
22 wells that are referred to here at the bottom?

23 A Yes.

24 Q Do you recall what she testified to as far
25 as what formation they were completed in and producing

1 from?

2 A Yes.

3 Q And you recall what she said?

4 A Yes. This -- this looks more like a
5 Wolfcamp plastic and then a Wolfcamp A landing when we
6 look at this. One of the challenges is we're all
7 using public data. So this is an area we have good
8 control, and we're confident in where those wells are.
9 But everybody's doing the best they can with public
10 data.

11 Q And when you say control, what do you mean
12 by control?

13 A Different companies will have access to
14 different density of logs in different locations. So
15 where you have lots of logs, it's very easy to tell
16 where wells are landed. Where you don't have good log
17 control, it can be more difficult to correctly place a
18 landing zone.

19 Q And you have good control in the area where
20 little bear is being developed?

21 A Yes.

22 Q And little bear covers the south half of
23 section 28, west half of section 34, and all of
24 section 33 in the same township and range as the
25 subject lands; correct?

1 A Yes.

2 Q Okay. And now, I want to ask you a question
3 about conchos moss federals. In here, it says it's a
4 third Bone Spring co-developed with Wolfcamp in two
5 well pairs, which development delayed by more than a
6 year in the case of moss federals.

7 Do you have any comment about that
8 statement?

9 A Not particularly. Staci could speak to
10 landings better than me for the moss federal. What we
11 have here was the little bear.

12 Q And the moss federal. You would agree that
13 the proration unit for each of them, each of those
14 wells, is -- they're not stacked. In other words,
15 there's not a third Bone Spring -- Wolfcamp below a
16 third Bone Spring in the same proration unit.

17 A Well, yes.

18 Q So it's what you would call a flat
19 development?

20 A The -- the risk of vertical interference
21 would -- would not be as high as being directly --
22 directly stacked.

23 Q Okay. And I'm going to go to F3. Now, on
24 the right-hand corner, there's a chart that shows --
25 it has four different colors with third Bone Spring in

1 area of high quality. Wolfcamp. Wolfcamp in area of
2 high quality. Wolfcamp. Third Bone Spring in the
3 red. Area of low quality, Wolfcamp. And the darker
4 blue is the Wolfcamp in area of low quality Wolfcamp.
5 Do you have any comments about this slide?

6 A One of the challenges here is the -- the
7 plots are -- are broken out by landing zone. So
8 the -- the COG development in area one we show as
9 Wolfcamp without -- without third sand landings. So
10 that's -- that suggest pull the averages down on the
11 red and blue lines.

12 The -- the other thing, as far as quality
13 goes -- while there is improved PH, the Mighty
14 Pheasant in both the third and the Wolfcamp -- PH is
15 porosity times height. So what we're talking about
16 here is how to best access what we view as a single
17 reservoir. And the height difference between these
18 areas is 300 feet versus 345.

19 And this might be better covered by Staci,
20 but her exhibits B6 and B20 show those thicknesses.
21 So for us, comparing these areas and how to best
22 access them with -- with a fracture and -- and landing
23 pattern, we would view them as very similar for -- for
24 the target reservoir.

25 Q Now, I'm going to share Exhibit F4. And on

1 the left-hand side, it's matador Verna Rae. Do you
2 see that?

3 A Yes, sir.

4 Q And the commentary at the bottom is
5 immediately offset of Joker Bane -- are examples of
6 successful co-development on third bum spring at
7 Wolfcamp at the exact same spacing and targeting that
8 Permian Resources has proposed in Joker Bane.

9 Now, do you have any comments regarding --
10 in paragraph 9 of his statement, he states of both the
11 Verna Rae 134H and the Verna Rae 204H are extremely
12 strong. The Verna Rae 133H, however, does not
13 directly wine rack with the wolf camp A well. Is a
14 poor performer.

15 The Verna Rae results suggest that
16 co-developing the Bone spring and Wolfcamp A wells
17 together results in better long-term performance and
18 higher cumulative oil production than producing third
19 Bone springs well alone. Now, do you have any opinion
20 regarding Mr. Fechtel's characterization of production
21 from the Rae wells and the conclusion he draws from
22 that production?

23 A The -- the characterization of production is
24 fine. Those are good wells. The -- the concern I
25 have is they're edge wells and not in a full

1 development.

2 And additionally, they're -- they're a frac
3 test, so there is significant fluid and sand put into
4 those two edge wells, which lease line the joker.
5 Would it be better if I shared the exhibit? Can you
6 see Exhibit D13 -- my testimony. It would be -- on
7 PDF, it would be page 248.

8 Q Okay. I will pop that up.

9 A Or I can share too. Are you able to see my
10 screen?

11 Q Yes.

12 A Okay. So what I've called out here is the
13 purple and green wells -- are the wells referred to.
14 A lease line, the Mighty Pheasant, sections 5 and 8,
15 the acreage we're talking about today. And what
16 stands out to me is this is a frac test.

17 What I mean by that is, this is a
18 significant amount of energy to put into the ground in
19 this area. That's important on edge wells, because
20 you can go grab reservoir beyond what you would be
21 able to access in a bounded environment, in my
22 opinion. I think that could have a significant
23 overprint on -- on how two wells might perform versus
24 a full development.

25 Q Now, can you explain what you mean by a

1 bounded well or bounded development?

2 A I've got a map up here. It's probably
3 really hard to see. But if you look at where the
4 wells are located, there are no competing well bores
5 in the acreage we're talking about today.

6 Neither of us have drilled a third sand or a
7 Wolfcamp. So that means these wells are able to
8 access whatever this frac is able to touch. So to me,
9 some of this overperformance is coming from within our
10 section. This is lease line depletion as well.

11 Q And on Exhibit 4, there's also some
12 discussion -- let me share F4 again. And do you see
13 F4?

14 A Yes.

15 Q On the right-hand side. It talks about
16 Batman well. And you have any opinion regarding
17 his -- line 15 of paragraph 9 of his statement. He
18 states, early time production from Permian Resources
19 Batman development corroborates this observation.

20 The production profile and cumulative
21 production were co-developed third Bone Spring and
22 Wolfcamp A wells in the Batman unit. Show these wells
23 are outperforming third Bone Spring wells and they're
24 developed alone.

25 Now, do you have any -- and then in Exhibit

1 F8, he also talks about the Batman well in the lower
2 left-hand corner in the left-hand side. And I guess
3 the whole exhibit is Batman. Do you have any opinion
4 regarding his characterizations of production from the
5 Batman wells and unit and then the conclusion he draws
6 from that production?

7 A The performance from the wells early time
8 and rates is -- is very good. But early time rate
9 does not equal reserves.

10 Q Do you have Exhibit D17? Can you share
11 that?

12 A Oh, yes.

13 Q And continue with your description of your
14 opinion about the Batman production.

15 A This -- this is one thing -- is not -- I'm
16 not the operator of this. But one thing I would be
17 curious to check -- and it could not mean anything.
18 It's just there's a significant shift in water cut and
19 GOR right around when it looks like maybe an upset
20 occurs.

21 And that -- that would be something I would
22 check on my wells, just because both of these water
23 cut and GOR oil productions and input into that. Just
24 to make sure the allocation is -- is correct.

25 The other thing that I'm looking at here

1 is -- in terms of acceleration, the west half should
2 be cleaning up maybe a little bit faster than the east
3 half. I'd be curious how these wells perform with
4 more data. Maybe once ESPs are installed and we're
5 able to see some decline to verify reserves.

6 Q And ESP is the --

7 A Electric submersible pump. And the reason
8 that's important is to get good drawdown on the wells.
9 Early time when -- when wells are drilled, if I've got
10 more wells in an area, I could accelerate production,
11 'cause I'm able to drawn down the reservoir a little
12 quicker, 'cause the wells are closer together. My
13 concern is late time, does that -- does that early
14 time performance correlate to additional reserves?

15 Q Based on this data, is it 50 days of
16 production?

17 A It's -- yeah. It's a little past 50.
18 They'll have more. This is what we got last week.
19 But you need to see more of the well before reserves
20 would be a confident number in -- in my opinion.

21 Q In your opinion, how long would that take to
22 be able to make a calculation that you would deem to
23 be reliable as far as estimated ultimate recovery?

24 A I would get more comfortable throughout time
25 that I -- I would want to see the -- the wells on

1 decline post-ESP install. So that might be six
2 months, seven months of data to start having an
3 opinion and then maybe out to a year or more to -- to
4 start gaining some more confidence in that opinion.

5 And -- and what I'm showing here is Exhibit
6 D15. And -- and again, they'll have some more data.
7 I'm just showing these versus some of the other
8 developments in the area. And -- and what I'm looking
9 for here is, does this trend continue long-term, or do
10 these wind up being more similar later out in time?
11 If that makes sense.

12 Q No. That does make sense. Now, in the
13 rebuttal exhibits -- if I can find my cursor. I'm
14 going to share Exhibit -- believe it is A15.
15 Apologize for the delay here. Let's go back to D15
16 that you were just showing.

17 And so the purpose of D15 is to show
18 production from the Batman compared to these other
19 wells?

20 A Yes. And -- and this is the average well
21 oil per foot per day versus on the X axis. And what
22 you're looking for here is -- this is like a -- a
23 capital efficiency plot. If you're doing well and
24 capital efficiency space, you'll be at the top.

25 And what I mean by that is, you're "cumeing"

1 lots of oil out of your wells. If you can "cume" as
2 much oil as somebody else who's drilled additional
3 wells with less well count, then your project is more
4 profitable than somebody -- than a different
5 development that was executed.

6 So I've called out some different
7 developments on here. The Reed and Stevens North Lea.
8 This is adjacent to the Loosey Goosey Acreage at four
9 wells per section or four wells in the section.
10 And -- and we model that as an excellent third sand
11 development that is -- is one -- one of the better
12 developments in the area.

13 Q Okay. Now, going back to Exhibit F4, in
14 paragraph -- statement in Exhibit F4. And Exhibits F2
15 and F3. He asserts that co-development of the third
16 Bone Springs and Wolfcamp A is the optimum development
17 tactic with respect to the subject lands.

18 Do you have an opinion regarding this claim
19 about co-development of the third spring in Wolfcamp A
20 as being the optimal tactic for developing the subject
21 lands?

22 A The black and tan to me is a very important
23 development, because I don't have to rely on edge
24 wells, and I can see significant density drilled in --
25 in one location. And that's important to a reservoir

1 engineer to understand if the entire tank has been
2 accessed or not. But that's part of why that features
3 so heavily in -- in my slides -- is to me, it's the
4 best example there is.

5 Q And in the rebuttal exhibits, they claim
6 that the black and tan is not analogous. Let me get
7 that --

8 MR. RANKIN: Objection to the question,
9 Madame Examiner. Mr. Zimsky is listing testimony on
10 your rebuttal exhibits to which we have not yet
11 offered any testimony. This is surrebuttal, and I
12 don't think it's appropriate, number one, for Cimarex
13 to offer surrebuttal without leads. Number two, we
14 haven't even testified on that yet.

15 THE HEARING EXAMINER: Right.

16 Mr. Zimsky, I think we had an earlier
17 agreement about the fact that this would be divided
18 kind of into two parts.

19 MR. ZIMSKY: Okay. And I think I
20 emailed Mr. Rankin last night about Mr. Behm going
21 through the Exhibit K. But if he wants us to call
22 Mr. Behm back, we can just do that.

23 THE HEARING EXAMINER: All right.

24 Thank you.

25 //

1 BY MR. ZIMSKY:

2 Q And, Mr. Behm, can you explain a little bit
3 more detail why you believe the black and tan is
4 analogous to the subject lands?

5 A When I'm talking about analogous, some of
6 the things I'm looking at are -- if I were to look at
7 Staci's exhibit, B6, B20, I've got a similar thickness
8 of target. What appears to be predominantly driven by
9 the -- the sands, which would have better flow
10 properties.

11 We believe they contribute significantly
12 more than -- than the A shell down below, which --
13 which neither company is proposing the land in. What
14 I'm looking at there is it's an interesting test,
15 because six wells were drilled targeting just the
16 third sand.

17 So you're able to see -- what does a single
18 landing look like versus additional well bores? And
19 then after that, it is underfilled with significant
20 Wolfcamp development. And when -- when I look at that
21 project, it's tough to see a benefit in reserves for
22 the additional five wells targeting the Wolfcamp.

23 And -- and that's important, because if
24 reserves were missed by not landing in the Wolfcamp, I
25 would expect to see incremental barrels show up on the

1 wells landed in the -- on the new wells landed in the
2 Wolfcamp.

3 Q So now, you were here when Mr. Rankin was
4 asking Ms. Mueller about the difference is the PH
5 between the subject lands being about an average of
6 ten, I recall, and the black and tan being average of
7 seven.

8 Do you have any comment about that
9 difference? Does that make it less analogous or more
10 or -- what's your opinion about -- does that affect
11 the comparison between black and tan and the subject
12 lands?

13 A Black and -- the -- the subject lands might
14 outperform black and tan due to having some more PH.
15 But for me, when it comes to landings and targeting
16 the reservoir, I have a -- a 300 foot of pay example
17 that appears to have been entirely accessed with the
18 flat landing versus a 345 foot pay interval, but
19 without any barriers in either location. My
20 assumption is that the additional 45 feet will not
21 require a double well count.

22 Q The additional 40 feet in the subject lands
23 is not enough to justify a Wolfcamp --

24 A Another landing zone. Yes, sir. I think --
25 I think we'll -- we'll get the existing barrels

1 with -- with the landings for both.

2 Q And now, the black and tan has 11 wells per
3 section. And the Permian Resources proposal has 8 per
4 section. Is the density a factor in -- does that make
5 it affect the analogous -- the use of the black and
6 tan as an analogous development?

7 A Density on projects that've been drilled
8 denser than what has been -- what has been proposed --
9 that's very useful for setting some upper bounds on
10 what you think you're going to be able to access at
11 your analog target.

12 So if 11 wells -- and one of the wells never
13 recovers after the frac underneath, so it's 10 wells
14 later in time and 11 to start. But if 11 wells don't
15 access additional barrels in a stagger, I would not
16 expect 8 or some lower well count to -- to add
17 additional barrels.

18 Does that make sense? 'Cause there's more
19 frac energy placed at a higher well count throughout
20 the section, which appeared to offer a negligible
21 return. So doing less frac energy with less wells
22 should probably achieve a similar result.

23 Q And how about the sequencing? Did they
24 drill the third sand wells first, and then they
25 drilled the Wolfcamp wells? Does that have an effect

1 on whether this is a -- black and tan is a good
2 analogous situation?

3 A I -- I would expect sequencing to -- to make
4 degradation a little bit worse, but I would not expect
5 it to -- to look like negligible barrels. And I guess
6 what I'm trying to say there is -- is it's odd to me
7 to go add another landing and not see a material
8 improvement in recovery. That -- that tells me that
9 that was one tank that was largely accessed initially
10 in time.

11 Q And what happened to the production from the
12 third sand wells when the Wolfcamp wells were
13 completed? I think that's your Exhibit D6 maybe.

14 A Yeah. Exhibit D7 is my post. I can share
15 that.

16 Q Yeah. Please.

17 A Everyone knows which -- this is page 242 as
18 well.

19 Q Okay. Can you explain this? This is part
20 of your black and tan analogous situation in response
21 to, you know, my question about whether the optimal
22 tactic for developing the subject lands is claimed by
23 the engineer for Permian Resources as the optimum
24 tactic. And so with black and tan, you're using it as
25 an analogous situation.

1 So can you, you know, further explain what
2 happened here and --

3 A Yes. On Exhibit D6, what I'm doing is I've
4 got stable production I'm forecasting a decline
5 through. There is some offset frac impact here. And
6 then additional, on the OCD records, these wells were
7 all drilled in a row.

8 So what that means is when I come back to
9 drill within the same row, what operators will do
10 sometimes is they will cut their casing and lower it
11 below grade so it's out of the way of the drilling rig
12 for, like, safety.

13 There -- there are operational issues in
14 here impacting production, but this is my best
15 estimate for what this project would've done had no
16 additional wells been added. D7 --

17 Q I have a question. Now, in 2019, there seems
18 to be like, a dip in the production vis-a-vis your
19 prediction, I guess. Your forecast. Can you explain
20 what that difference is, what generated that
21 difference?

22 A There -- there is an offset frac nearby.
23 One of the things we do is if we have ESPs down a
24 hole, we might go change lift if we're worried about
25 getting hit.

1 Additionally, you might be expanding your
2 battery, doing some additional work to be able to
3 bring those wells on. So you can have some -- some
4 runtime and operations over print. And then, what I
5 was talking about earlier was before these wells are
6 drilled, based off the filings on the OCD, going off
7 public data, it looks like a request is made to drop
8 the well heads below grades so you can have your tree
9 and all your pressurized equipment below ground.

10 So that means you'd have to shut in your
11 wells and -- and go work on them as well. So there is
12 an operational overprint, in my opinion, on this -- on
13 this data here. But prior to that, I feel fairly good
14 about this forecast being an accurate assessment of
15 the barrels touched by these wells prior to the
16 Wolfcamp wells.

17 Q Now, the black and tan P02H last produced in
18 May of 2020 -- it was permanently abandoned in August
19 of 2022. Does that have any effect upon using the
20 black and tan as an analogous development?

21 A I -- I don't believe so. To me, it would
22 highlight the risks that you would have if you came in
23 and landed -- the 402 has landed very close to the
24 302. If you come in and underfill that close
25 together, you would have more well bore risk at that

1 density.

2 So that -- so that would be an operational
3 risk if somebody did third and then came right back in
4 underneath and did the very top of the Wolfcamp.
5 But -- but as far as analog goes, it's -- it's 11
6 wells. At the end, it's 10. That's still a very good
7 end point for what may be maximum recovery target or
8 a -- a total reservoir should be able to produce.

9 Q Now, Exhibit D12, I think, is your parry
10 results. If you can share D12 with us. And could you
11 explain how this supports your contention that the --
12 rebutting Mr. Fechtel's claim regarding the
13 co-development of third spring in Wolfcamp?

14 A In our position, it's not that there's no
15 oil in the Wolfcamp. It's that the majority of the
16 oil appears to be best accessed by the third sand. So
17 for me, fracs had improved over time as operators have
18 learned by executing.

19 And the -- the blue well, which is the third
20 sand landing -- this is very old, vintage frac. This
21 is 478 pounds per foot. That's very small. 2,000
22 pounds per foot. 2500 pounds per foot. Those are
23 more normal fracs with a modern slick water
24 completion.

25 And -- and this is an important edge well

1 comparison for us, because this Wolfcamp A landing
2 down in the top of the A1, despite having
3 significantly better frac applied to it, more energy,
4 more clusters, which you would expect to outperform a
5 legacy frac, appears to not be any better. So if --
6 if the choice is which landing zone do you target with
7 a flat development, to us, this strongly supports
8 third sand as the optimum landing.

9 Q Now, the paloma 214H well was drilled maybe
10 5,000 feet or 5100 feet west of the parry 221A12?

11 A It's -- it's a lease line well offsetting
12 the parry 4H at about 760 feet. So a little looser
13 than a permeance proposed spacing.

14 Q And did the production from the paloma have
15 any effect on the parry wells, to your knowledge?

16 A I -- I don't believe so. FDIs will happen,
17 and that's a fracture-driven interaction. When we put
18 a lot of energy into the ground and we're producing on
19 primary, you can get some short-term rate benefits on
20 your wells. And then what's important to look at
21 is -- is the decline afterwards.

22 When I look at these two wells, I could
23 pretend the -- the lease line was not there, and I was
24 choosing between drilling either the paloma or the
25 parry 4H. I -- I would choose one of those wells.

1 'Cause to me, this -- that'd be another example where
2 you see some significant interference once there's two
3 wells there that are able to interact and fight for
4 the barrels that they're both accessing.

5 Q And so the parry wells are -- are they an
6 example of -- you talked about no edge?

7 A Yes. I would not apply this prediction to
8 a -- a significantly denser development. As you add
9 boundaries to the wells, the performance will change
10 if -- if -- as you over space, it will change more,
11 which will show up as steeper and steeper decline
12 after the initial acceleration benefit of having more
13 wells.

14 Q Now, if you could share Exhibit D14. And
15 does this support your contention that third Bone
16 Spring development in the subject lands is the optimal
17 method to produce hydrocarbons of the subject lands?

18 A In my opinion, it does. The way I look at
19 these plots, is I'm looking at the project oil
20 normalized for length that's been "cumed" versus time.
21 And if I drill additional wells, you can accelerate
22 barrels, because you're spreading pressure drop out in
23 the reservoir faster. I'm looking further out in
24 time.

25 Am I seeing a long-term reserves benefit

1 where new barrels touch, or is it primarily
2 acceleration? And -- and so I look at for wells per
3 section developments -- like the -- the purple, which
4 is adjacent to the loosey-goosy with four wells per
5 section -- as very competitive versus some of these
6 denser developments.

7 It's six or eight wells per section. And so
8 instead of drilling additional wells in something that
9 looks like it's already been contacted, we would go
10 drill additional wells to add new reserves in a
11 different bench that doesn't look like it's been
12 accessed.

13 Q And the black and tan Wolfcamp are graphed
14 separately than the Wolfcamp. Does that have any
15 effect on the purpose of this block?

16 A Not in my opinion. This was an incremental
17 decision made that the value of that incremental
18 decision -- to me, I would not have drilled those
19 wells, which -- which is -- isn't really fair, 'cause
20 I'm looking at the results after they already happen.

21 So the -- the point here is this addition of
22 barrels with the shift that you get in black and
23 tan -- to me, I -- I would not have done a stagger
24 there. I -- I don't think it's supported. I would
25 rather have a -- a project like the Enverus or Reed

1 and Stevens, the north Lea 3 wells. That is a much
2 more efficient use of capital in this area.

3 Q And Exhibit D15. Can you explain how this
4 supports your opinion that a third Bone Spring
5 development is the superior tactic with the subject
6 lands?

7 A What I'm looking at here is I can see -- and
8 again, what we consider the Wolfcamp landings, like
9 the little bear. So if -- if I shift lower in the
10 potential tank and move all my landings down in the
11 section, is that accessing more barrels or less
12 barrels?

13 That's an important test to me that says
14 most of the oil should be located further up -- up in
15 the column where most of these other wells are landed.
16 And I can see the -- the four wells per section
17 perform very well early time. Again, there's some
18 acceleration benefit from drilling additional wells.
19 But I -- I don't see that maintaining over the life
20 of -- of the well.

21 Q And at D16.

22 A What I'm looking at here is I've got wells
23 that have been on for a long time. And -- and the way
24 this works is, when we drill wells, you -- you don't
25 make any money off of IP. And you have to recover

1 your initial investment.

2 So we can see some of these denser projects
3 do have higher IPs. What I'm looking at is the
4 long-term slope of this line. And what we're doing
5 here is if a project came on in two steps, we -- we
6 are normalizing that, and it's just producing days
7 times well count.

8 So what I'm looking at here is, if I have a
9 nice, flat profile, that well further out will access
10 more EUR. It should "cume" more at project level. If
11 I get a high IP and I've got a steeper decline, to me,
12 that's -- I've got some rate benefit, and my
13 production guys did a good job accelerating some
14 production.

15 But in aggregate, the EUR of the project did
16 not increase with the wells. So -- so I'm looking at
17 wells like the Reed and Stevens, again, which is
18 adjacent to the subject lands at four wells per
19 section. And I see a nice, flat profile on that. The
20 initial IP is not as high, but the reserves access by
21 that project are -- are comparable to the denser
22 developments, in my opinion.

23 Q In this Exhibit D16, did you merge the daily
24 and monthly production?

25 A Well, I have the daily production that was

1 provided for the Batman. This is rate per foot versus
2 "cume" for the project.

3 Q And could that be misleading, you using the
4 daily and the monthly, mixing them in this chart?

5 A I don't -- I don't believe so. This -- this
6 is a standard way we look at a lot of our developments
7 when we're assessing spacing and whether something's
8 acceleration or additional reserves.

9 Q Now, I'm going to direct your attention to
10 paragraph 10 of his statement. And talking about the
11 results. Strongly supports the conclusion that
12 co-developing the third Bone Spring in Wolfcamp A in
13 this acreage with thicker, higher quality Wolfcamp A
14 rod is necessary to recover incremental reserves that
15 would otherwise risk being left unproduced if this
16 acreage -- I think there's a missing line, at least on
17 the PDF I had.

18 Do you have an opinion as to whether the
19 incremental reserves that your Cimarex proposal
20 would -- is at risk of not producing by just using a
21 third Bone Spring well?

22 A I believe it's minimal, based off the whole
23 development result that we looked at with black and
24 tan and the third sand. I expect to capture the
25 majority of economic barrels. So I -- I would

1 disagree with that.

2 Q And if we could go to your Exhibit D9. If
3 you could share that.

4 A Are you able to see my screen, Bill?

5 Q Yes. I want to look at the table 1.0. And
6 the bottom line. Estimated ultimate recovery and then
7 BO. Third sand. And then you have the column under
8 Wolfcamp plus 089. Can you explain what that -- does
9 that mean you're going to recover -- what does that
10 mean as far as your Wolfcamp recovery?

11 A What I'm doing here is I'm trying to
12 summarize the prior three exhibits of forecasts into
13 hopefully a more digestible table. So initially, the
14 third Bone Springs had a high IP. It wasn't competing
15 with other wells landed in the Wolfcamp. Then
16 Wolfcamp wells were added.

17 Competition begins, and I see a decrease
18 in -- in the third sand. If I look at the EUR on the
19 Wolfcamps, to me, the -- the barrels that are coming
20 out of the Wolfcamp wells look roughly equivalent to
21 the barrels that are coming out of the third sand.

22 So for me, that says this is likely a single
23 tank, as Staci Mueller testified to yesterday. And so
24 the question is: Where do you best put your wells in
25 that single reservoir to most efficiently access all

1 the barrels?

2 Q And in Exhibit D11, you indicate that in the
3 bullet point to the right of table 1.3, in order
4 create equivalent PV10, Wolfcamp landings must add
5 approximately 40 percent more reserves versus the
6 reserve estimate in table 1.3 and 31 percent more
7 reserves versus P50 expectation in table 1.4.

8 Now, what's your opinion, whether you could
9 get those extra 40 percent more reserves if you
10 drilled -- you co-developed this with the Wolfcamp
11 wells?

12 A The intent of this is a sensitivity around
13 that, so I have black and tan with a full development
14 that in my opinion, added negligible uplift.
15 Different reservoir engineers will forecast things
16 differently. This is a sensitivity showing exactly
17 how much do I need to produce in full development mode
18 to -- to just break even on that extra capital I've
19 put in the ground?

20 So -- so for me, given I've got 0 percent,
21 in my opinion, at black and tan, getting 30 to -- to
22 40 percent just to break even seems low probability
23 and high risk in -- in my opinion.

24 Q Now, going back to Exhibit D9 where you have
25 that in the bottom and the table 1.0 estimated

1 ultimate recovery under the Wolfcamp, the bottom 0.89.
2 Could you use that to justify drilling the Wolfcamp?
3 Would that mean the Wolfcamp recovery would be an
4 extra, you know, 40 barrels a foot?

5 A That would say across all the wells drilled,
6 those barrels that I believe were already contacted by
7 third sand would now be redistributed to the Wolfcamp.
8 So -- so for paying out wells and supporting
9 development, it's important to touch new barrels and
10 additional reserves. So I -- I would say this example
11 says absolutely do not stagger in the Wolfcamp and
12 expect to pay out those wells.

13 Q Okay. And you remember testimony yesterday
14 with -- or I guess Mr. Coffman. And I'm going to
15 share from hearing packet 4, Exhibit A3. Let me share
16 that. There was some questioning about that. And can
17 you see the letter that's dated June 15, 2023?

18 A Yes.

19 Q Okay. And I want to go into the second
20 paragraph. Is that highlighted?

21 A Yes, sir.

22 Q That sentence there.

23 A Yeah.

24 Q Okay. And the fourth line of the highlight
25 says the wells -- which as proposed, the Bone Spring

1 wells -- and quote, will produce the primary
2 concentrations of hydrocarbons in the Wolfcamp, those
3 being in the upper Wolfcamp. And Cimarex believes
4 that they will do so more optimally, given their
5 current location within the third Bone Spring, than if
6 additional unnecessary wells were drilled in the
7 Wolfcamp itself.

8 How do you interpret that language? Does
9 that mean that the Bone Spring -- let me rephrase
10 that. The Bone Spring wells that you're proposing.
11 What's the breakdown between production between what
12 you have estimated production between Bone Spring and
13 Wolfcamp?

14 A We would expect close to three quarters of
15 the production to be coming from the third sand. So
16 the majority of the barrels captured by the well are
17 from the third sand.

18 Q And would those Bone Spring wells capture
19 most of the Wolfcamp hydrocarbons in the sand?

20 A Within the sands, based off the -- the full
21 analog development that we have -- so that'd be the XY
22 and then the aggregate third sand -- I would expect
23 the -- the Wolfcamp XY to have been captured largely
24 by that third sand landing.

25 Q And so how do you read this sentence? Do

1 you interpret this to mean that these Bone Spring
2 wells will be -- most of the production will be coming
3 from the Wolfcamp or that they will get most of the
4 hydrocarbons in the Wolfcamp?

5 A They will get most of the hydrocarbons in
6 the Wolfcamp. I do think this could've been worded a
7 little bit better to make that more clear.

8 Q Thank you. And going back to the paragraph
9 10 of this statement. He states that Cimarex's plan
10 will particularly impair the correlative rights of
11 owners, including Reed and Stevens, who own a greater
12 share of interest in the Wolfcamp. Will only own in
13 the Wolfcamp.

14 Do you have an opinion as to whether that
15 statement about protecting relative rights is correct?

16 A From a -- a sensitivity standpoint, the
17 purposes of some additional exhibits we made were to
18 try to quantify that risk and where that would be
19 true. So that is Exhibit B20. And in our opinion, we
20 wanted to solve for all the possible land combinations
21 you can have to make sure this was a win for
22 everybody. And I don't know if I should share that.

23 Q Yeah. Why don't you share it.

24 A Let's find it. So again, we see it as a
25 single batch target or single landing target. And

1 what we're doing here is we're trying to quantify --
2 well, how bad of an imbalance do you have to do
3 before -- you would lose out on the competing proposed
4 plan.

5 And I've got the two worst acreage
6 imbalances highlighted in this table just to show
7 that -- and to be fair, this is our model. This is
8 what we expect to happen. It shows that as long as my
9 acreage imbalance isn't close to six where it would be
10 very similar proposals, in terms of money and -- and
11 PV10 made, the Cimarex plan would outperform despite
12 the imbalance.

13 Q And so you have specific examples, I think,
14 in Exhibit D21?

15 A Yes. Yes. So we're -- we're solving for
16 the -- the worst imbalance in each acreage block just
17 to show that in order to money PV10 made, there's --
18 we see a significant benefit in not drilling two wells
19 within the proration unit. And -- and that shows up
20 as additional PV10 under our plan.

21 Q And when you were calculating the PV10, can
22 you go to Exhibit D18?

23 A Yes.

24 Q And you were using what's June current costs
25 for those figures?

1 A Yes.

2 Q And what was the reason you used those
3 instead of the older costs from --

4 A Our June costs were higher. The AFEs that
5 companies create through time are a function of the
6 contracts that they have at that time. This reflects
7 our current update for AFEs specifically in this area.

8 So we -- we would propose this at these
9 costs today. And -- and the reason for that is
10 there's a significant delta between the two capitals
11 proposed, and I wanted to make sure we had our most
12 accurate updated cost available to compare the
13 differences in those two numbers.

14 Q And when you were making those PV10
15 calculations, you explained that in your testimony, I
16 think, at paragraphs 55 and 56 -- just refer to that
17 in case there's questioning on that. Now, can we go
18 down to maybe -- and can you define the significant
19 delta cost between the delta cost -- the cost between
20 what Cimarex is proposing and Permian Resources?

21 A So our most current cost estimates put full
22 development cost at 148,000,000 per 1280 at
23 148,000,000 per 1280 developed. The equivalent 1280
24 would be 269,000,000. I do not have permeance current
25 June cost, so I've got a question mark there. This is

1 their February and March AFE cost that -- that were
2 provided.

3 Q Yeah. But if we were just comparing the
4 third Bone Spring under Permian under your plan, that
5 would be 37,000,000, I believe, and third Bone Spring
6 and Wolfcamp, which is in red -- that's 92,000,000;
7 correct?

8 A Yes. And -- and the red are the landing
9 zones. We don't -- we would not drill. We don't
10 recommend those at this time, if that helps.

11 Q Yes. Okay. Can we go to -- I believe it's
12 D22? Okay. And D21 was a comparison between Might
13 Pheasant and Joker. Now, can you explain what this
14 comparison is?

15 A Yeah. This is in our -- the Loosey Goosey
16 bane lease. We have a -- a single imbalance that --
17 that does not favor our proposed plan. But that
18 imbalance is -- is very close together. It's a 1.37
19 ratio of Wolfcamp interest to Bone Spring interest.
20 So -- so for this one owner, we would model
21 significantly more PV by not overdrilling the section.

22 Q And so looking at the PV10, can you explain,
23 you know, in layman's terms? PV10. Is that something
24 that you use in decision making at the company to
25 decide whether to develop certain lands or formations?

1 A ATAX PV10 or after tax present value
2 discounted at 10 percent would be a common metric
3 that -- that most companies would look at.

4 Q And so in determining that, Cotera, like any
5 other company, has a finite amount of resources to
6 spend on development; correct?

7 A Correct.

8 Q And do you allocate that when somebody wants
9 to develop an area subject lands to get approval from
10 whoever's in charge of handing out the capital? Do
11 you make a presentation on PV10 estimates for the
12 development?

13 A Yes. That is one of the numbers provided.

14 Q And now, let's go to paragraph number 11 of
15 this statement. While Reed and Stevens in Permian
16 have undertaken a thoughtful, analytical approach to
17 testing and planning its development in this acreage
18 with flexibility built into its proposal to quickly
19 respond to updated data and analysis, Cimarex has not
20 demonstrated a similar level of planning or analysis
21 in its development in this area to date or in the
22 competing proposal.

23 Do you have any evidence that Cimarex has
24 demonstrated a thoughtful analytical approach to
25 testing and planning?

1 A Our approach would be to see if there's
2 offset tests. If somebody else has deployed capital
3 to re-risk something, looking at those results rather
4 than risking your own capital to see if that can get
5 you to maybe the same conclusions would be our first
6 step there. The other piece of this, the flexibility
7 built into its proposal. Let me find the reference.

8 The APD extensions of the process for that
9 is kind of changed where you're no longer -- the
10 two-year extension you used to be able to get is no
11 longer kind of a given. So instead of permitting
12 everything, what we do is we look really hard at the
13 next two years for what we're sure we're going to
14 execute, and we will permit that development. And
15 then, the plan is to turn in additional permits every
16 year.

17 Q And are you referring to BLM -- instruction
18 memorandum IM --

19 A Yes. Thank you. I'm sorry. I couldn't
20 remember the number.

21 Q We shouldn't talk over each other. But BLM
22 IM 2023-011. Is that what you were referring to?

23 A Yes.

24 Q And so explain. So the BLM is no longer
25 granting these extensions as they used to as a matter

1 of routine?

2 A Yes.

3 Q Now, with respect to his statement that you
4 haven't demonstrated similar level of planning and
5 analysis in this area, could you bring up Exhibit D1?
6 Okay. And can you explain what this is?

7 A This is the top 15 operators in Lea County.
8 This is your average per well, a 12-month queue. And
9 BOE for 1,000 foot. So -- so there are differences
10 in -- in where you own acreage that can be an
11 overprint on this data. But our activity over the
12 last five years is -- is very good compared to the top
13 operators in the county.

14 Q And so this is the -- Enverus. That's a
15 company that they track production data in New Mexico
16 and Texas?

17 A Public data. Yes. You'll commonly see them
18 referenced in investor presentations where people are
19 comparing large sets of public data.

20 Q And can you go to Exhibit D2.

21 A This is the same plot in average. But this
22 is oil instead of BOE for 1,000 foot. But again,
23 we -- we compare favorably with -- with all our peers.

24 Q And now, the X axis is on the left; right?

25 A The X axis is on the bottom, and that would

1 be your lateral length. So this is showing, what
2 length wells do you normally drill on average? So
3 this can be a blend of 1 miles and 2 miles. Or like,
4 occidental out here would be primarily 2-mile wells,
5 'cause they're close to 9500 feet. The Y axis is your
6 "cume" per well.

7 Q So the higher you are on the Y axis, the
8 better?

9 A Yes. In -- in first-year "cume."

10 Q Okay. And the same goes with Exhibit D1?

11 A Yes, sir.

12 Q Now, do you believe this reflects a
13 thoughtful and analytical approach to testing and
14 planning development in Lea County by Cotera Cimarex?

15 A Yes, sir.

16 Q Now, I'm going to show Exhibit F5. Do you
17 see that?

18 A Yes.

19 Q And it talks about the Lea 7 federal unit.
20 And his commentary is about improper sequencing and
21 destroyed value. And he points to the Lea 7. Can you
22 explain the Lea 7 to the hearing examiner?

23 A Yes. That is a black swan event. And what
24 I mean by that was that it is a bad event that
25 happened where we lost the well. We -- we got frac

1 hit, so that would be the sequencing comment. And
2 then, the sand wedged our ESP down, and we were unable
3 to retrieve it.

4 After this happened, we changed our
5 procedures throughout Permian for what to do when
6 you're being offset frac with an ESP in the hole as
7 well as some casing design changes. So we changed all
8 our operations practices and some of our well bore
9 design around this single event, and it has not
10 happened since.

11 Q I'm going to show F6. Operator activity.
12 Says drilled one well in five years. Can you discuss
13 Cimarex's activities in the area of interest over the
14 past five years?

15 A Over the past five years, we have not been
16 as active up here. We were -- we were an early play
17 delineator and drilled a lot of the -- the blocked up
18 acreage that we were able to drill early between 2010
19 and -- and 2016.

20 But the -- the well drilled was the single
21 2-mile location we have that was not impacted by a
22 hearing or the federal unit issue that we're working
23 to resolve. So it -- we can drill acreage that's set
24 up and ready to go, but we're still working to get
25 that federal set up and obviously to resolve the

1 hearing.

2 Q And so could you explain a little bit about
3 the federal unit that's causing the delay in some
4 development?

5 A We're not the designated operator of it. So
6 what we have to do is we have to dissolve that and
7 then create a new one. Our goal there is to try to
8 develop the half township to the north with a single
9 facility under that federal unit. But -- but we're
10 not allowed to drill through lands that are part of an
11 existing unit that we're not the designated operator
12 of, so that is delaying things.

13 Q And you obviously proposed this development,
14 but we're in the hearing because there's a competing
15 application; correct?

16 A Yes.

17 Q Okay. Is Cimarex in any other hearings that
18 they're proposing to develop wells, but subject to the
19 OCD's decision on competing development proposals?

20 A We have the show biz development and then
21 some additional trades working in the area, just
22 trying to resolve issues. So we have drillable well
23 bores.

24 Q And in Exhibit F6, on the third bullet
25 point. Permanently abandon one horizontal producing

1 for just seven months. Can you respond to that?

2 A Yes. That is the -- the Lea well that we
3 touched on earlier. That -- that was a bad well
4 result for losing the well bore. But we have changed
5 our operational practices off that single occurrence
6 to ensure that that doesn't happen again.

7 Q And in 2020 and 2021, did economic
8 conditions have any -- was there a general slowdown of
9 capital expenditures in the basin during that time
10 period?

11 A Yes. Everyone slowed down in 2020 and 2021.

12 Q And why was that?

13 A Price crash and pandemic.

14 Q Now, in the fourth bullet point. Not tested
15 to co-development of the third Bone Spring in
16 Wolfcamp A. Can you respond to that? Why haven't you
17 done that?

18 A We believe we have enough to make our
19 development decision without executing a test from the
20 surrounding wells. 'Cause -- 'cause we have lots of
21 production data.

22 Q And so you have production data that you
23 haven't risked any capital to accumulate?

24 A Yes.

25 Q Is that a reasonable financial risk analysis

1 management?

2 A Yes.

3 Q Now, HF2S2. Now, that's a study that's 43,
4 44 miles to the south. You've used that, I believe,
5 in some of your testimony. Is that some of the data
6 that you're relying upon?

7 A For our assumptions about fracs, yes.

8 Q And the fact that it's 44 miles away. Does
9 that have any -- make it less useful, or does it have
10 an effect on the use?

11 A Not in my opinion. Things that apply in
12 tighter -- may be more heterogeneous rock -- I would
13 expect to apply in places where we don't have a -- a
14 baffle and -- and maybe on higher perm sands, in my
15 opinion.

16 Q So relying on that data is -- are you
17 misplacing reliance by relying on that data?

18 A I don't believe so.

19 Q Does the fact that it's in Texas have any
20 difference?

21 A No. No, sir.

22 Q And does it include third Bone Spring
23 development?

24 A No. It -- it does not.

25 Q And does that have an effect on whether you

1 should use that data?

2 A The -- the -- I -- no. It does not. The --
3 the depletion that you see in third sand without any
4 wells landed into it gives us some ideas about height
5 that can be successfully accessed. So the fact that
6 there is third sand depletion with no wells landed
7 in -- we feel supports a single landing for the
8 subject land.

9 MR. ZIMSKY: Madame Examiner, can you
10 give me a few minutes to look through my notes to see
11 if I have any more questions?

12 THE HEARING EXAMINER: All right.

13 BY MR. ZIMSKY:

14 Q Mr. Behm, there was some questioning of
15 Ms. Mueller by Mr. Rankin about 5H porosity times
16 height and whether there's -- the pours that are
17 present -- could be a lot of pours present, but you
18 don't know if it's water or oil or a mix or
19 hydrocarbons.

20 And you're relying upon the PH for some of
21 your projects here on reserves and EUR and other
22 estimates for the development of the subject lands.
23 Can you speak to that, whether using porosity times
24 height is a valid metric or basis to predict reserves
25 in production?

1 A I -- I believe it's valid. It represents
2 your total storage, your pore space that you're
3 accessing with your wells. And then uniquely in this
4 area, as you head to the northeast, you can see your
5 water cuts decreasing in wells like the third sand.

6 And while we don't have a side wall core
7 maybe from within the subject lands, there's a wealth
8 of production data that shows improving third sand
9 water cuts as you move up the high porosity channel
10 that Staci identified in her exhibits. And lower
11 water cuts moving up structure. Water cuts indicative
12 of oil saturation. So that -- that's an important
13 aspect to the area as well.

14 Q You have high-level mapping of the basin
15 that indicates areas that have good third sand and
16 good Wolfcamp. This particular -- do you develop all
17 the Wolfcamp and any high-level outline of -- which
18 you chose a high level of good in Wolfcamp.

19 Does that mean you developed the Wolfcamp in
20 every and all the lands you own within that -- where
21 you think the Wolfcamp is good, or is it more on a
22 case-by-case basis?

23 A It would be case-by-case basis. So picking
24 the correct landing zone plus spacing plus well
25 configuration for how you're completing your wells --

1 getting those three things right are very important
2 for development throughout the county.

3 Q And when you frac in -- if you drill the
4 Wolfcamp in the subject lands and you fracked it, do
5 the fracs tend to emanate vertically towards the
6 surface more so than downward?

7 A Frac would go up in my opinion.

8 Q So if you drilled the Wolfcamp in this area,
9 specific to this geological characteristics, a
10 Wolfcamp well drilled in the subject lands would --
11 the frac would go up and capture a lot of bone -- or
12 third sand reserves; is that correct?

13 A Yes.

14 Q Earlier in your testimony, you talked
15 about -- sometimes it's hard if you didn't have all
16 the data -- if you're only using public data,
17 sometimes it's hard to determine whether a well is
18 third sand or Wolfcamp; correct?

19 A Yes.

20 Q So there could be some differences of
21 opinion between Permian Resources and Cimarex as to
22 some of those wells that you identified in Exhibit D4,
23 whether they're -- and I guess Exhibit D24, whether
24 they're third Bone Spring or Wolfcamp?

25 A Yes.

1 Q Does that have any effect -- that certain
2 amount of uncertainty on your opinion as far as the
3 third sand being the optimal landing zone?

4 A Not in my opinion.

5 MR. ZIMSKY: Believe that's all the
6 questions I have. I tender Mr. Behm for
7 cross-examination.

8 THE HEARING EXAMINER: Thank you very
9 much, Mr. Zimsky. It seems like a good time to take a
10 break, notwithstanding my early difficulties. I know
11 most of you have been on the platform for two hours.
12 Shall we take ten to fifteen minutes?

13 MR. RANKIN: Yes, Madame. I think
14 fifteen minutes would be appropriate at this point.
15 Maybe come back at --

16 THE HEARING EXAMINER: 10:40?

17 MR. RANKIN: 10:40. Yeah.

18 THE HEARING EXAMINER: All right.
19 10:40, then. Thank you very much.

20 (Off the record.)

21 THE HEARING EXAMINER: Let's come back
22 from the break. When we broke, it was time for
23 Mr. Rankin to question the witness, Mr. Behm.

24 Mr. Rankin, please.

25 MR. RANKIN: Thank you, Madame Hearing

1 Officer.

2 CROSS-EXAMINATION

3 BY MR. RANKIN:

4 Q Good morning, Mr. Behm. How are you today?
5 Don't think I heard you. Make sure that you're
6 unmuted.

7 A Good, sir. Sorry about that.

8 Q No problem. Good morning. As I walk
9 through my discussion with you, my conversation, just
10 let me know if you can't hear me, if I get cut off, or
11 what have you, so I know I can -- I'm happy to restate
12 a question if you don't understand, if I mangle it,
13 which is certainly a possibility.

14 Mr. Behm, I'm confused. And I'm going to do
15 my best to untangle my confusion. But basically, you
16 know, listening to your testimony today, reading your
17 written testimony, Ms. Mueller's testimony, and her
18 written testimony, and of course, Cimarex's position
19 in its papers and its legal papers, I'm a little
20 confused. I wish I had more time with you, and I
21 would probably be able to untangle all my confusion if
22 I had more time. But I'm going to do my best with the
23 time I have.

24 So I guess the first place I'm going to
25 start is -- I want to kind of just start getting a

1 framework. And I'm going to ask you if you have your
2 exhibit packet in front of you. I'm going to go ask
3 you to look at D3 first. I just want to make sure
4 we're on the same page in terms of language and
5 reference points; okay?

6 A Okay.

7 Q Great. I'll go ahead and share my screen,
8 for those of us who still have internet. D3. In this
9 exhibit that you prepared, you reference this as your
10 area of interest; correct?

11 A Correct.

12 Q And so I just want to make sure we're on the
13 same page. This is sort of your study area where
14 you've identified, as I understand, wells and
15 production and data that would be relatively
16 comparable in this area. Is that your premise?

17 A Yes. The development assumptions in this
18 area would be similar.

19 Q Now, that's notwithstanding the fact, as I
20 read your testimony -- and reviewing Ms. Mueller's
21 exhibits, there's a fair bit of discussion or at least
22 some, you know, acknowledgement that there's quite a
23 bit of variation within the area of interest between
24 the landing zones -- I mean, the geology between the
25 different landing zones and the different development

1 areas, even just within this area of interest. Agree?

2 A Could you restate the question?

3 Q Sure. Between Ms. Mueller's testimony and
4 your own and her exhibits and your testimony, there's
5 some discussion about how there's quite a bit of
6 variation in the geology here as between the different
7 landing zones within the area of interest; correct?

8 A Yeah. Geology will change over this many
9 townships. Yes.

10 Q But it's even within miles; correct?

11 A This is common throughout Lea County, where
12 formations will improve or you'll get lithology
13 changes. It -- it's close to the source, so it's --
14 it's kind of more variable throughout. And when I say
15 more variable, I mean versus maybe like an -- a deep
16 basin, primarily shell target.

17 Q So referring to paragraph 15 in your
18 statement, you say -- is complex across the entire
19 area. The flowing in it's changing drastically over
20 several miles. Is that still your testimony?

21 A Yes.

22 Q Okay. So within this area of interest where
23 we're talking about several townships -- there's
24 drastic changes potentially in flow units within this
25 area itself; correct?

1 A For South Lea, there's -- there's more
2 vertical targets that are being targeted. There's
3 also more thin carbonates and alternations of shell
4 and sand.

5 And trying to understand the vertical
6 interaction as you stack more and more wells to target
7 it in South Lea, in my opinion, is -- is a little bit
8 more complex than up here, where we've got a -- like,
9 the third sand and XY right next to each other.
10 That's a pretty well-defined flow unit. Does that
11 makes sense, sir?

12 Q No. I guess my question is: Do you still
13 agree with your statement that within your area of
14 review, flow units change drastically over several
15 miles?

16 A In this area or throughout the county?

17 Q Well, I'm asking you if your statement is
18 still correct in paragraph 15.

19 A Paragraph 15. Let me read that again, just
20 to make sure I'm not missing something. I -- I still
21 agree with my statement here as far as -- this -- this
22 being almost more of a convenient setup for the third
23 sand, which we see in the -- the oil cut improvements
24 moving up off a structure. And it's -- it's kind of a
25 better defined tank, in my opinion.

1 MR. RANKIN: Madame Hearing Officer,
2 I'm getting some background noise. I'm not sure if
3 there's some -- not on mute. But I would appreciate
4 it if we could go on mute. And not Mr. Behm, of
5 course.

6 THE HEARING EXAMINER: Right. It's not
7 me either. I had myself on mute.

8 Marlene, if you can see who is the
9 source of the noise, please. Mute them.

10 MR. ZIMSKY: I was the source, I
11 believe, so I'm muting myself.

12 THE HEARING EXAMINER: Okay. Thank
13 you.

14 BY MR. RANKIN:

15 Q Okay. So I just want to make sure I
16 understood that. As within this area of interest,
17 your statement on paragraph 15 still applies?

18 A Yes, sir.

19 Q Thank you. Now, you discussed to some
20 extent your exhibits D1 and D2, and I just want to
21 make sure I'm -- again, working within a framework and
22 that we're on the same page.

23 These exhibits that I'm showing here on the
24 screen that you discussed with Mr. Zimsky, they, as I
25 understand, are not limited to the area of interest,

1 that nine township area that we just discussed. But
2 are inclusive of all of the county; correct?

3 A Yes.

4 Q Okay. Now, is this all of Cimarex's wells
5 in Lea County that you used to create this exhibit?

6 A These are Cimarex -- yeah. All of Cimarex
7 wells in Lea County between 2018 and 2022 --

8 Q Sorry. Go ahead.

9 A Oh. I'm sorry. Go ahead.

10 Q We spoke over each other. You were saying
11 something.

12 A I lost what I was going to say. Sorry.

13 Q It's okay. So as to each of the other
14 operators as well, this shows all of their production
15 in Lea County?

16 A It shows wells drilled within this period
17 that have a year of production. 'Cause it's comparing
18 a year.

19 Q So all wells for these operators in Cimarex
20 between 2018 and 2022?

21 A Yes. And it's public data if the well has
22 come on production. But it's not out there, and it
23 hasn't been on for a year. Would not be included in
24 this plot.

25 Q Okay. And then, how many of the wells

1 within the area of interest that we reviewed in D3 are
2 included in this chart?

3 A Oh gosh. The Mescalero won't be in there
4 yet. So almost none. Our activity has been focused
5 throughout the county.

6 Q Okay. So essentially, this chart shows
7 everything but the area of interest?

8 A Yes, sir.

9 Q Now, let's go over to paragraph 9 of your
10 statement. Again, this is just kind of cleaning up,
11 because I want to just kind of focus on this a little
12 bit. And I don't want to spend too much time on this,
13 but I do want to just kind of, you know, understand.

14 In paragraph 9 and page 3 of your
15 self-affirmed statement, so towards the bottom where
16 you have laid out your opinions from those bullet
17 points -- the bullet point states that the spacing
18 proposed by Permian Resources is eight laterals per
19 section in the third sand. And I presume you mean the
20 third Bone Spring sand; correct?

21 A The -- the third in the Wolfcamp flow unit.
22 So we've proposed four wells. The -- the proposal
23 from Permian would be eight wells with four in the
24 Wolfcamp.

25 Q Okay. I just want to make sure I understand

1 your testimony here, because you limited it to the
2 third Bone Spring sand. Ms. Mueller testified that
3 while they're one tank, there are different
4 formations, and that -- in her testimony, she
5 specifies that it's four and four.

6 And you later discuss in the black and tan
7 that the black and tan has actually landed -- I
8 believe it's six wells in the third Bone Spring and
9 then an aggregate of five wells in the lower Wolfcamp.
10 So I just want to make sure that we're -- I appreciate
11 your clarification there, that what you mean to say in
12 this bullet is that it's four wells in the third
13 Wellspring sand and four wells in the upper Wolfcamp
14 that Permian is proposing; correct?

15 A Yes, sir.

16 Q Okay. Just want to make sure. Now, you
17 said here as well -- as I read through and
18 contemplated your testimony -- I'm going to refer you
19 here to your testimony on pages 6 and 7 under your D3
20 Exhibit heading where we're talking about, again, that
21 area of interest; okay? This area of interest here.

22 The thrust of your testimony -- and I
23 understand Cimarex's position here -- is that the
24 consensus of operators within this area is that the
25 preferred landing zone is the third Bone Spring sand.

1 Is that a correct paraphrasing of your testimony?

2 A Yes.

3 Q And I guess we talked a little bit about how
4 there may be some differences of opinion here about
5 what is the third Bone Spring, what may be the
6 Wolfcamp -- and as you explained, there may be some
7 differences of opinion, given some of the complexities
8 in the geology about what the actual landing is;
9 agree?

10 A Yes.

11 Q Okay. But even assuming that, you know,
12 there may be some, you know, differences here in
13 opinion over what's the third Bone Spring and what's
14 the Wolfcamp, isn't it the case that during the course
15 of development in an area that often operators may
16 focus on one or two targeted intervals or benches
17 initially, and as they develop those benches and
18 targets, start identifying new additional targets
19 based on data that they collect, and over time, start
20 drilling additional benches in that same area?

21 A Yes. That definitely happens.

22 Q And of course, you know, geology is complex.
23 You know, there's going to be some pockets where some
24 of those new additional benches may not be ideal;
25 agree?

1 A Yes.

2 Q But nevertheless, your position here is
3 that, you know, the consensus approach that the third
4 Bone Spring is the best target -- you contend supports
5 your position that it's the best and only target for
6 developing this acreage; correct?

7 A Yes. I believe this is a single landing,
8 and -- and the third sand would be the best way to
9 access the reservoir.

10 Q Now, as you noted in your testimony, you do
11 spend a fair bit of time and exhibits discussing and
12 analyzing past use black and tan offsetting
13 development. And you said today and in your written
14 testimony that you believe that it's the only
15 development plan in the entire area of interest that
16 is similar to what Permian is proposing; agree?

17 A Yes. For -- for full development without
18 edge wells where you can get a good idea of sectioned
19 performance where there's history.

20 Q And you say in your testimony -- I'm going
21 to point you to -- let's see. I believe it's
22 paragraph 27. The last sentence of that paragraph.
23 You say that the development of the black and tan
24 wells was based on similar well drainage assumptions
25 and utilized outdated completion height assumptions

1 that Permian Resources appears to be relying upon.

2 Okay. First, what are those assumptions
3 that you believe Permian is relying upon?

4 A This is my assumption here. It's -- it's
5 based off of what's been proposed. So through --
6 throughout the last four or five years, people have
7 generally increased vertical separation. It's become
8 that people work on more.

9 And I was -- I tried to outline some of that
10 in my Section 14, which refers to just Lea County in
11 general, where those are some examples from our
12 company where we've increased vertical separation
13 based off the geology within an area to deliver better
14 results. 95 feet of vertical separation, in my
15 opinion, is very, very tight for -- for a staggered
16 development.

17 Q Okay, Mr. Behm. My question, though, is:
18 What assumptions specifically are you referring to?
19 What are the drainage assumptions that you're talking
20 about?

21 A It would be a height assumption that -- that
22 the Wolfcamp XY either has a 100-foot crack and is not
23 significantly or -- 100 foot height and is not
24 significantly interacting with the third sand -- that
25 the height of the third sand wells is not sufficient

1 to -- to access the reservoir. I guess simply, it
2 would be underestimating the vertical height growth
3 of -- of fractures.

4 Q All right. Last thing you said there was
5 about the third -- tell me again now. Are you
6 saying -- the assumption here is that -- I just want
7 to make sure I understand it. Okay. That it's about
8 the frac height in the XY. Correct?

9 A Or the third.

10 Q Or the third.

11 A Yeah. It would be an under -- to me in my
12 opinion, it's -- it's under -- underestimating the
13 height growth you would expect to get in this bench.
14 Because I would have to assume that I've got barrels
15 that I'm not accessing in order to add a second bench.

16 Q What's the assumption about the wells in the
17 third Bone Spring and their frac height?

18 A Well, the assumption is that fracs must be
19 significantly less than 300 feet in height in order to
20 add a second bench for -- for reserves, in my opinion.

21 Q 300 feet in height from the third Bone
22 Spring going up?

23 A Around the well bore. Yeah. There's 300 to
24 340 feet of sand, whether you're looking at black and
25 tan or Mighty Pheasant, Loosey Goosey. In my opinion,

1 based off of well performance throughout the county
2 and studies like HFTS2, I would assume that that
3 height would be sufficiently drained. And -- and to
4 me, projects like the black and tan confirm that.

5 Q Okay. Now, I'm going to come back to that;
6 okay? I appreciate your testimony there, and it's
7 always a risk to come back to something. But I think
8 I understand what you're saying, and I want to come
9 back to it. Because what you just said, I think,
10 frankly, added to my confusion. But I'm going to save
11 that for another unit of our discussion. Because I
12 have another series of questions to address that. But
13 you have set out some of the framework there.

14 Now, on the black and tan. Okay. What I
15 understand you to say is that it's the best analog and
16 that's it's predictive of what you believe will result
17 from Permian's development plan that goes forward.
18 Agree?

19 A Yes.

20 Q Okay. Now, that's approximately 2 miles
21 away from the subject development area that would be
22 the Joker Bane; agree?

23 A Yes.

24 Q And as I pointed out in your testimony in
25 paragraph 19, or rather paragraph 15, you testified

1 that the flow units will change drastically over
2 several miles -- and then you go on to say -- with
3 much more variation in rock quality within individual
4 landing zones. Agree?

5 A In -- in the beginning of Section 15 is
6 South Lea County is complex. So I'm -- we've been
7 active largely not in -- in this area for the last
8 four or five years. And that doesn't mean that we
9 don't learn things when we go drill throughout the
10 county.

11 I'm just trying to point out that this area
12 is -- is -- to me at least, simpler on the vertical
13 interaction. That -- that's a risk in all of the
14 developments where operators come in and target
15 multiple benches.

16 Q Okay. Now, when I look at the geology, I
17 believe referred to Ms. Mueller's Exhibit B6 and B10.
18 We talked about this. And you talked about it with
19 Mr. Zimsky. That there's a difference here between
20 the two benches, the third Bone Spring, and the
21 Wolfcamp XY. Agree?

22 A Yes.

23 Q And as to the black and tan, which is in
24 Section 27, which I believe I'm pointing to here. Do
25 you agree with my cursor? Can you see that?

1 A Yes, sir. Yeah. That's correct.

2 Q That's the black and tan. There's a
3 difference here between the porosity height mapped
4 where the black and tan is located and where the Joker
5 Bane units are located; correct?

6 A Yes.

7 Q And as you point out in your testimony, it's
8 a difference between 7 phi height and 10 phi height
9 between where the Joker and Bane are located; agree?

10 A Yes.

11 Q And I think Ms. Mueller testified that
12 that's a small -- she said 30 percent, but I think
13 actually the increase difference is more like 43, 42
14 percent between the phi height between those two
15 areas; agree?

16 A Yes.

17 Q I mean, I'd say it's approaching a 50
18 percent difference. And now, as I understood your
19 testimony and Ms. Mueller's testimony, that that
20 difference is insignificant relative to the porosity
21 height in the third Bone Spring sand; agree?

22 A Both of these -- both of these areas, if you
23 compare the subject land versus the black and tan --
24 there is more PH. Part of the reason I was bringing
25 up height earlier is PH is porosity times height.

1 Right.

2 So when you move between these two
3 developments, there's only about a 45 foot change in
4 the pay height being targeted. And so when we talk
5 about frac height and being able to access it, half of
6 the improvement moving from the black and tan to the
7 end of the third sand kind of porosity channel Staci's
8 highlighting here is -- is improved porosity within
9 the -- within the sands themselves.

10 So I would tell, like, better perm. Maybe
11 better connected rock. If anything, it might be
12 easier to drain that than -- than tighter rock further
13 out. Does that help?

14 Q A little bit, but I think I also heard you
15 say previously when we were talking about frac heights
16 that it's going to go around the well; correct? I
17 mean, up and down. Yeah?

18 A The sands themselves, the XY in the third
19 sand -- I would expect the sands to -- to frac
20 similarly.

21 Q Well, I'll get back to this a little bit
22 later, I think. But I mean, I guess my biggest point
23 here I want to make sure is clear is that in your
24 testimony, you said the black and tan is the best
25 analog between what Permian is proposing in the Joker

1 and Bane unit and the situation at the black and tan.
2 But I see a 43 percent difference in phi height
3 between those two areas. Agree?

4 A The phi H Wolfcamp that you're talking
5 about. Yes. The third sand improves by kind of a
6 similar PH number.

7 Q So then I also I want to talk about the well
8 spacing. Okay. And I'm going to skip back down to
9 your D5. What I see here is your depiction of your
10 understanding of the black and tan well patterns.
11 Vertical spacing and horizontal spacing. Correct?

12 A Yes. Yes.

13 Q And what I see here is one, two, three,
14 four, five, six wells and the third basal Bone Spring
15 sand.

16 A Yes.

17 Q Whereas as I understood we previously
18 discussed, Permian is only proposing four wells;
19 correct?

20 A Correct.

21 Q The difference -- that's a totally different
22 spacing; agree?

23 A The -- the relevance of having a denser
24 space pilot like -- or development like this is if --
25 if 11 wells, 10 wells -- once the issues show up on --

1 believe it was the 302.

2 If they're unsuccessful in accessing
3 additional barrels with increased stagger -- because
4 you know, three of the Wolfcamp wells are actually
5 landed lower. A larger tank was targeted there with
6 more wells. And -- and yet, I don't see -- I don't
7 see uplift to -- to justify the additional well count.

8 So -- so the fact that it's denser is
9 actually really important, because if additional wells
10 are drilled and they don't add barrels, drilling --
11 drilling less wells than that, I -- I would -- I would
12 expect them to not outperform the denser well count.

13 Q Okay. Here's my question. As to density,
14 you're comparing a development with six wells in the
15 third Bone Spring basil sand versus four wells in the
16 Bone Spring basil sands; correct?

17 A Yes.

18 Q And unlike in Permian's proposal, we're
19 looking at five wells in the upper Wolfcamp; agree?

20 A Yes.

21 Q Now, Ms. Mueller distinguished in her
22 testimony between the Wolfcamp A, which is where
23 you've also distinguished that there's -- three of
24 these wells proposed a little lower. Staggered within
25 the upper Wolfcamp. Agree?

1 A Yes.

2 Q And in Ms. Mueller's testimony, she stated
3 that where there are no frac baffles or frac barriers,
4 she considers those geologic units to be single flow
5 units. Agree?

6 A Yes.

7 Q And do you recall her testimony that there
8 are no frac baffles or barriers between the third Bone
9 Spring basil sand or the upper Wolfcamp XY?

10 A Yes.

11 Q Nor are there barriers between the upper XY
12 and the top of the Wolfcamp A, the lower Wolfcamp that
13 we were just discussing?

14 A Yes.

15 Q Okay. So in this situation here, just so
16 I'm clear, we're talking about a well density that's
17 eleven wells versus eight wells. Eleven wells in the
18 black and tan versus eight wells in the Permian
19 proposal; correct?

20 A Yes.

21 Q Okay. And that's roughly what -- I think
22 it's nearly a 40 percent increase in well density?

23 A Yes.

24 Q Okay. Now, on the sequencing, you did
25 address this to some extent in your testimony. And

1 when I look at this next Exhibit D -- is it D6 or D7?
2 Now that I'm looking at it, I'm not sure. D6, I
3 guess.

4 A Yes, sir.

5 Q Okay. So under D6 again, you have a
6 representation here of the well spacing design. And I
7 guess not totally clear. But if you would just
8 explain what the X axis is again.

9 A X axis is time.

10 Q And that means that year -- is that 2018
11 then, or what is that?

12 A Yes.

13 Q Okay. And it's a log scale of course;
14 correct?

15 A Yes.

16 Q Okay. This just shows the Bone Spring wells
17 in this development in the black and tan; correct?

18 A Yes. This shows the 301 through the 308H.
19 And the forecast is prior to any of the Wolfcamp wells
20 being drilled or fracked.

21 Q How much time elapsed between when the 301
22 through the 308H wells were drilled and producing to
23 when the Wolfcamp wells were drilled and fracked?

24 A The -- the frac date -- I -- I've tried to
25 call out there. I had it at the end of '19.

1 Q So how much time elapsed between when the
2 initial -- when the Bone Spring wells are drilled in
3 and commenced production until the Wolfcamp wells were
4 fracked and started producing?

5 A Could be -- looks like 21 months. Each --
6 each of those flat lines is a month. So I'm sorry.
7 I -- I don't have that number handy. I can count real
8 quick. So I've got 12 months prior to the -- the
9 offset frac. Then I've got -- I've got another 7
10 months after that, so -- so 19 months.

11 Q All right. In this situation, the Apache
12 drills produced their Bone Spring wells first. And
13 then 19 months later, came back in and drilled and
14 started commencing their Wolfcamp production. Agree?

15 A Yes.

16 Q Do you understand that that delay or lag is
17 something that Permian is proposing here?

18 A No. No. They -- they are not. It would be
19 co-development all at once, I believe.

20 Q Let's go with that, Mr. Behm. Yes. I
21 believe the intent here is to co-develop. And what's
22 your understanding of what their intent would be
23 there, that being the case?

24 A I believe it would be eight third sand and
25 eight Wolfcamp across the aggregate drilling unit

1 at -- at one time. I'm assuming they're going to have
2 to split the benches up, just 'cause infrastructure
3 and being able to move the volumes in this area will
4 be a bit of a challenge.

5 Q The question then would be -- I mean,
6 essentially as you understand it, they would intend to
7 drill each of those wells and then to complete them at
8 one time; agree?

9 A Yes.

10 Q Okay. Now, that's not at all what Apache
11 did here; is it?

12 A No. No. This is not co-developed.

13 Q Okay. So I just went through three elements
14 of your analog here. We talked about the phi height
15 and the difference between the Joker Bane and black
16 and tan. We were talking about 43 percent increase in
17 phi height at the Joker Bane location, which
18 Ms. Mueller testified is a proxy for production.
19 Productivity.

20 We talked about the well spacing, where
21 we're looking at a 38 percent increase in well spacing
22 between what black and tan proposed and executed
23 versus what Permian is proposing. Now we're talking
24 about well sequencing here, where the black and tan
25 completed their Wolfcamp wells 19 months after their

1 Bone Spring.

2 So I ask you. In your opinion then, based
3 on that, you still contend that this black and tan
4 unit is nevertheless the best analog to what Permian
5 is proposing?

6 A Yes. In terms of EUR, because the reason
7 you would go drill the Wolfcamp drills below would be
8 the assumption that you had not accessed all the
9 barrels. So -- so while it's not identical to what
10 will be drilled, the fact that it's so many wells
11 targeting such a -- with larger stagger targeting the
12 same flow unit. And -- and I don't see much uplift.
13 Makes me confident that -- that a second landing is --
14 is not necessary.

15 Q Okay. Now, I think we addressed my next set
16 of questions well enough, so I don't necessarily think
17 we need to go into it here. Just want to touch on it.
18 But I understand you heard my cross-examination of
19 your colleague, Ms. Mueller?

20 A Yes.

21 Q And we discussed whether or not phi height
22 would give you any indication of oil saturation or
23 water saturation?

24 A Yes.

25 Q Okay. And you would agree that phi height

1 does not give any information on oil saturation;
2 agree?

3 A Correct. There is a wealth of offset
4 production in the third sands. So another way to get
5 an idea about saturation is the water cuts that you
6 observe in the producing wells targeting the third
7 sand. It's one of the things I referenced earlier.

8 Q Now, let me ask you something. I mean, do
9 you have an understanding -- I mean, you talked about
10 the geology. Do you have an understanding of what the
11 source rock is here for the oil that's located in the
12 third Bone Spring sand?

13 A My -- well, I'm an engineer. But my
14 understanding would be the Wolfcamp as well as
15 migration from -- from down dip.

16 Q As you sit here today, you can't discern
17 between what is the larger contributor of oil in the
18 third Bone Spring, whether it's the Wolfcamp or any
19 other migration within that zone?

20 A No. And I'm sorry. When I said migration,
21 I meant like, this could be, you know, townships and
22 townships away over time. This is a third point in
23 the third sand, so you get some really high oil cuts
24 as you move up Staci's third sand channel. I can't
25 remember what exhibit that was. That might be B6.

1 Q But nevertheless, the Wolfcamp is, as you
2 understand, source rock that contributes to the single
3 tank in this area?

4 A Yes.

5 Q Now may be the time I want to talk a little
6 bit about your frac model. This testimony and your
7 exhibits and the position you've taken on drainage in
8 the Wolfcamp is where I am confused. Okay. So
9 paragraph 36 of your testimony is where you introduce
10 Exhibit D10.

11 A Yes.

12 Q D10, as I'm sharing on my screen, is as I
13 understand, a cartoon of your frac model for this
14 area; agree?

15 A Yes.

16 Q As I understood your written testimony and
17 your statements today, your frac modeling is based on
18 your understanding of the data derived at least in
19 part from the HFTS2 project; agree?

20 A Yes. And -- and the picture here is we've
21 got a black and tan example at full development with
22 production before and post. Or before and -- and
23 post. So the -- the stimulated rock volume that's
24 accessed by the fracks before any Wolfcamp wells are
25 completed and after must look very similar. That's --

1 that's what I'm trying to show here.

2 Q All right. I'm getting confused. Because
3 here, I thought you were showing Permian Resources
4 proposed development. Explain to me what you mean
5 when you refer to black and tan.

6 A Black and tan, whether it was third sand or
7 Wolfcamp -- the stimulated rock volume, the reserves
8 accessed, appear to be the same. Went versus flat
9 prior to any Wolfcamp wells to when they came back in
10 and underfill. So my assumption here is I'm just
11 trying to draw a cartoon to explain what -- what that
12 might look like in both our proposed developments.

13 Q I guess what I'm confused about, Mr. Behm,
14 is you testified that you're going to be draining with
15 your third Bone Spring wells the hydrocarbons
16 available from the XY sands; correct?

17 A I guess yeah. Yeah. No. I -- I would not
18 expect to add additional reserves by landing in the
19 Wolfcamp.

20 Q Okay. And that's not what you said. You
21 said you're going to effectively drain the reserves
22 existing in the Wolfcamp; agree?

23 A Yes. In the XY. Sorry. I'm -- I'm just
24 trying to be specific.

25 Q That's fine. I totally appreciate that.

1 What I understood you to say -- and I agree with you.
2 That you testified that your third Bone Spring wells
3 are going to effectively produce the hydrocarbons
4 existing in the XY sands. Agree?

5 A Yes.

6 Q Okay. My question is: Based on this
7 cartoon, how are you doing that for Cimarex's
8 development plan? Is this an accurate depiction of
9 Cimarex's fracture model?

10 A This -- this a cartoon. I'm -- I'm just
11 trying to show that we're -- both plans are going to
12 grow up to the carbonate frac baffle, and then the --
13 the expectation I would have would be that the
14 stimulated rock volume of the Permian Resources plan
15 or black and tan, which was executed, must look very
16 similar to a four well flat or third sand only
17 landing.

18 Q As to Cimarex's plan and the fact that
19 you're going to develop the Wolfcamp, are your fracks
20 actually going to go down into the Wolfcamp XY?

21 A Well, I -- oh. Okay. I'm sorry. I should
22 probably have drawn this cartoon with the bottom of
23 the frac drawn into the Wolfcamp. I -- I see your
24 question now.

25 Q So how would you change your cartoon to make

1 it a more accurate representation of what you expect
2 the fracks are going to do?

3 A I -- I would drag the bottom of my frac down
4 maybe a little bit further in the Wolfcamp. And --
5 and just to be clear, this is a cartoon. This is not
6 a -- not a -- the intent was to try to help explain
7 that the barrier at the top of the third was very
8 important -- growing up until it hit that.

9 Q I'm sorry. I did not mean to speak over
10 you. I'm sorry. The reason I'm especially
11 confused -- because in your dialogue with Mr. Zimsky,
12 I understood you to say that this geology is more
13 unique here in that the fractures would tend to go up.
14 And I want to be clear that they're also going to go
15 down.

16 A If -- if I were to land in the Y sand, I --
17 I would expect the majority of my drainage to be
18 contributing from the third and the X. I -- I expect
19 the sands to frack better than the shales below. And
20 then, I would expect the shale in the A to contribute
21 way less flow than the clastics or the sands. The
22 third sand and the X and the Y.

23 Q Okay. Now, just so I'm clear, because I
24 think I want to make sure that I'm getting my question
25 answered. When you discussed with Mr. Zimsky about

1 the direction of the fracks, where Cimarex's fracks
2 are going to go, it's accurate to say that in fact,
3 Cimarex's fracks are going to go up, but also down,
4 but will be limited in their downward growth to some
5 extent by the Wolfcamp shale; agree?

6 A I would expect that the -- the big barrier
7 here is a carbonate frac baffle that kind of go
8 labeled at the top. So I would expect whether you
9 landed in third or Wolfcamp to grow up until you --
10 you hit a barrier.

11 Q I'm talking about down. Okay. I understood
12 you just to say that the fracks will extend down, but
13 will be inhibited in their downward growth by the
14 Wolfcamp A shales; agree?

15 A That -- that would be my -- yes. I think
16 that'd be most likely. And then again, upward bias
17 is -- is the strongest bias I think there is.

18 Q Okay. Did you also hear Ms. Mueller testify
19 that Cimarex is potentially evaluating coming back to
20 drill the Wolfcamp A shales at some point in the
21 future?

22 A Yes.

23 Q Is that something that is viable that
24 Cimarex would actually consider doing given your
25 assessment of the black and tan development in the

1 Wolfcamp A?

2 A The -- the target has to be significantly
3 lower than where they landed. And what I mean by that
4 is, potentially, you could increase the stagger
5 between the wells vertically in that development
6 and -- and potentially access maybe lower Wolfcamp A
7 or the Cisco. Something much lower than -- than what
8 has been drilled today.

9 Q Okay. So to the extent Ms. Mueller was
10 talking about coming back to Wolfcamp A, you would
11 agree, but only to the extent that it's whatever the
12 landing zone would be, would have to be sufficiently
13 lower to avoid any interference with the sands and the
14 third basil sands or the XY sands?

15 A I -- I would -- yes. To minimize
16 interference and add additional barrels for the well,
17 I would land -- I would have a much wider stagger.

18 Q All right. Now, I kind of need to walk
19 through your testimony that you had with Mr. Zimsky.
20 And I'll do my best to do that. I haven't had a lot
21 of time to organize my thoughts, but I want to do my
22 best to walk through it. And I apologize if I end up
23 jumping around a little bit.

24 Okay. Edge effects Verna Rae. You were
25 referring to Permian Exhibit F4. Couple things I want

1 to ask you about. I don't have it in front of me.
2 I'll discuss with you as I try to pull it up. But in
3 that exhibit, you pointed out -- let me see if I can
4 actually show it on your D13. You point out the Verna
5 Rae -- if I'm correct, it's this 1-mile lateral here
6 that you're referring to, the Verna Rae well that you
7 had concerns about contributing to an edge effect?

8 A Yes.

9 Q It's the 204H?

10 A Yes.

11 Q Okay. So that well is drilled at a legal
12 location off the lease line; agree?

13 A Yes.

14 Q And it's only a 1-mile well; agree?

15 A Correct.

16 Q And what Permian is proposing is a 2-mile
17 well; agree?

18 A Correct.

19 Q Okay. On your Exhibit D15, I understood the
20 point of this as you discussed your testimony was to
21 show project-based cumulative oil; agree?

22 A Yes.

23 Q And you understand that from Permian's
24 perspective, when they talk about -- you know, when
25 they, you know, hear project-based, they're thinking

1 because this is -- they're proposing a
2 co-development -- okay -- between the third Bone
3 Spring sands and the upper Wolfcamp. That it be
4 appropriate to look at third Bone Spring production
5 and the Wolfcamp production together. You understand?

6 A Yes.

7 Q In this chart, you don't show that; do you?
8 You break out the Wolfcamp production from the Bone
9 Spring production; agree?

10 A For the -- for the black and tan, yes.

11 Q But not for the others?

12 A Correct.

13 Q Why did you do it only for the black and tan
14 and not the others?

15 A The -- the black and tan -- we lose a well.
16 Or not we. But the third sand has a well lost kind of
17 further out in time. And I just wanted to highlight
18 the differences there in -- in that incremental
19 decision.

20 'Cause you can look at -- what would that
21 be? It would be -- right where the black and the
22 yellow line kind of separate. You can see a change in
23 performance. And it -- it's interesting to me that
24 that wedge is very close to that -- that change in
25 performance versus the EOG Delo wells, which -- which

1 are good wells.

2 Q Are you saying that the change in
3 performance is when the black and tan Wolfcamp wells
4 came on?

5 A Yes. That's when competition -- competition
6 for barrels in the same flow unit kind of starts.

7 Q Wasn't there also something else that
8 occurred with the Bone Spring wells at that time?

9 A There's the operational overprint ahead of
10 time. Yeah.

11 Q Okay. But in your view, that divergence
12 there is due solely to the introduction of competition
13 from the Wolfcamp wells below?

14 A That would be the -- the dominant view in my
15 point. And then just while we're here, the intent of
16 this plot is there's some great four wells per section
17 development holdout on here.

18 And just to make sure we're all reading it
19 the same way, I've got project oil per foot on the Y
20 axis and then time on -- on the X axis. And -- and so
21 what I'm looking at when I look at this plot is, like,
22 the blue development at four, the Reed and Stevens,
23 the North Lea three wells at four wells per section.
24 You can see long term very similar "cumes."

25 Q Mr. Behm, not to be rude. I appreciate it.

1 But this will go a lot faster -- and just in order to
2 make time, I would like you just to answer my
3 questions; okay? Not to be rude. I appreciate your
4 additional input. But I'm going to try to just keep
5 it to my questions. It's okay. Not to be rude.

6 On this "cume" plot as well -- I mean, we
7 saw some significant difference in the phi height
8 between even just the black and tan and the Joker Bane
9 project area. This "cume" plot does not take into
10 account any of the rock quality issues that we were
11 discussing previously. Agree?

12 A Correct. This is just production.

13 Q I was a little confused on D16 for why you
14 believe it's not confusing or misrepresentative to mix
15 daily with monthly in this chart on D16.

16 A For the Batman wells, we had a daily data
17 that we were able to -- to use. So I -- I just
18 plotted that on there.

19 Q You don't think there's a better way to
20 achieve the same assessment or analysis of EUR?

21 A This seems okay to me.

22 Q Okay. I don't have the luxury of time, and
23 I don't have the luxury of getting details from you
24 and understanding fully your economic analysis. Okay.
25 So I'm not going to really dive into it here. Okay.

1 But I want to understand. In your economic analysis,
2 are the presumption and economic assumptions made --
3 are they based on the black and tan development?

4 A This is my -- my base case. My reserves
5 case. So I'm running -- this would be table 1.3 on
6 Exhibit D11.

7 Q So here, this analysis, your base case
8 economic analysis, is based on the black and tan
9 development; agree?

10 A Yeah. It would -- it would -- yeah --
11 assume similar performance.

12 Q And that's the same as with your Exhibit D9;
13 right? Your D9. You addressed the EUR from the black
14 and tan. That serves as the basis for your economic
15 analysis going forward in your testimony and exhibits;
16 agree?

17 A Yes. My -- my -- yes.

18 Q All right. Now, in your discussion with
19 Mr. Zimsky, when he referenced the June 15th letter
20 that Mr. Coffman sent --

21 A Yes.

22 Q Your testimony was that based on -- I just
23 want to make sure I understand that. Okay. You
24 testified that approximately three-quarters of the oil
25 that would be produced from the Bone Spring wells

1 would be produced from the third Bone Spring. The
2 basil sand and the third bone spring.

3 A The third Bone Spring sand in -- in
4 aggregate.

5 Q In aggregate. And then approximately a
6 quarter percent would be produced as some the Wolfcamp
7 XY sands; agree?

8 A Yes. That would be my -- my estimate.

9 Q And that's just based on the assessment of
10 the phi height; yeah? Bore height.

11 A Paired with the production results from all
12 the developments up in that area.

13 Q When you say paired with the production
14 results, is that an analytical pairing, or is it
15 simply that the production results bolster that
16 determination in your view?

17 A The production results bolster that
18 determination in my view.

19 Q I mean, I guess what I'm getting at is,
20 you're not making some sort of calculation
21 incorporating production from the area of interest to
22 come up with a three-quarter, one-quarter allocation;
23 are you?

24 A No. That's -- that's primarily the PH.

25 Q Okay. But you don't know what the oil --

1 you haven't done an oil and place calculation
2 determination for the acreage at issue in these cases;
3 have you?

4 A We have SO phi H. I can't remember what
5 it -- I don't know if it's an exhibit, but it's very
6 similar to PH with our model.

7 Q Okay. But I think Ms. Mueller testified
8 that's based on the model; correct?

9 A Yes.

10 Q Okay. So other than the model, you don't
11 have any data indicating what the oil in place as
12 between the Bone Spring or Wolfcamp here; do you?

13 A We have the producing water cuts of wells
14 landed in the third sand for -- for the surrounding
15 area. And so water cut's kind of a proxy for oil
16 saturation. Water cut goes down, and the third sand
17 gets oily. You would assume saturations would go up.

18 Q And are those water cuts partly the basis
19 for, you know -- do the water cuts help Cimarex target
20 then the basil third sand? In other words, you're not
21 targeting the upper portion of the third sand; you're
22 targeting the bottom of the third sand. Is that based
23 in large part on the data you recovered on water cuts?

24 A Could you ask the question again?

25 Q My question is: Why is Cimarex targeting

1 the very bottom of the third sand? What's the data
2 basis for that target?

3 A That would be the -- the best quality
4 landing zone. And then again, we're more confident in
5 growing up to touch that -- that frac barrier up above
6 us. So you would -- you would tend to land lower in
7 your target reservoir.

8 Q What's the data that supports that best
9 quality landing zone?

10 A That would be your porosity within that
11 zone. That's -- that's good, high-quality sand.

12 Q When you say porosity, you're talking the
13 phi height within that zone; yeah?

14 A I'm talking -- the -- the porosity is not
15 uniform throughout. That -- or we call it the C sand.
16 Lots of people might name it differently at a
17 different company. But landing in that sand would be
18 our recommendation from the production results.

19 Q Okay. So that sand, that landing zone, has
20 better porosity than other portions of the third Bone
21 Spring basil sand; correct?

22 A Yes. We -- we would target the best rock
23 for the landing zone.

24 Q Just wanted to make sure I understood.
25 Thank you. One thing I also thought I heard you -- I

1 just want to make sure I get the timeline straight
2 here. I thought I understood Mr. Zimsky ask you
3 about -- that you guys proposed your applications in
4 response to Permian's proposals. Did I understand you
5 to say that?

6 A Oh. I'm -- I'm not sure.

7 Q Okay. But just to be clear, I mean, you
8 understand that Cimarex was first to issue its well
9 proposals and to propose development in this acreage
10 before Permian -- is that your understanding?

11 A Yes.

12 Q Permian made its well proposals in response
13 to Cimarex's plan development; agree?

14 A Yes.

15 Q And I thought I heard you say that you are
16 comfortable with the production data or the data that
17 Cimarex has and that you wouldn't need additional data
18 in order to proceed to develop the Mighty Pheasant and
19 Loosey Goosey acreage. Is that my understanding?

20 A The third sand specifically is development
21 ready. We plan to gather some data. As you drill
22 wells in an area, you can gather data on those wells
23 to re-risk some of the other benches and landings.

24 Q All right. Is Cimarex planning to drill a
25 pilot hole or do any additional science-based testing

1 within the Mighty Pheasant or Loosey Goosey?

2 A We would grab some additional log data right
3 now.

4 Q So in other words, there are plans to take
5 log data across the different potential target zones
6 in the development area?

7 A We would -- yes. We -- we would go -- yeah.

8 Q So I just want to make sure, because you
9 sound a little ambivalent. But are there concrete
10 plans for Cimarex to go in and take test data within
11 potential target zones in this development area?

12 A We plan to do some logging on the first well
13 to maybe better understand some of the barriers for --
14 for stuff like upper second sand and get confirmation
15 on some of the less proven targets like the -- like
16 the lower second. That wouldn't matter. But that
17 upper second, which Staci spoke to prior -- gathering
18 some more data on that to optimize spacing and
19 expectations for that zone. We -- we would do that.

20 Q Just going through. Make sure and see if I
21 have everything I want to cover, Mr. Behm. I
22 apologize for my delay. Mr. Behm, one of the comments
23 I think you made -- you know, as we discussed, there
24 may be some differences of opinion over whether
25 certain wells in the area of interest are landed in

1 the third Bone Spring sand or the upper Wolfcamp.
2 Remember that discussion?

3 A Yes.

4 Q And Mr. Zimsky asked you whether it would
5 have any impact or change your opinion about anything
6 whether those landing zones were accurate or not that
7 you depicted. Remember that?

8 A Yes.

9 Q And you said that in your view, it wouldn't
10 change your opinion. It would have no effect on your
11 analysis. Agree?

12 A The -- the wells close to the subject lands
13 where we have lots of log control -- I'm confident in
14 where our geologists have placed them. So I would not
15 expect it to change my opinion here.

16 Q So even if some of those wells were actually
17 Wolfcamp -- I guess my question is, the whole point of
18 this dispute here, to some extent, is whether the
19 Wolfcamp is a viable target, either by itself or in
20 conjunction as co-development with the third Bone
21 Spring.

22 And you're saying that whether a
23 high-performing a good-performing well is actually
24 landing in the Bone Spring or Wolfcamp would have no
25 impact on your assessment or your opinion -- is just

1 confusing to me.

2 A Well, if for some reason the wells that are
3 labeled as third sand, like the -- the Lea 3 is
4 adjacent to Mighty Pheasant, Loosey Goosey. That's a
5 four well development that we have in the third sand.
6 If -- if the well count's really what's most important
7 there, if one of those wells is like an X sand and all
8 the other wells are a third sand C, it's still a
9 single flat target. The -- the big risk here is
10 actually well count, if that makes sense.

11 Q Okay. I'm just going through to make sure I
12 covered everything, Mr. Behm. On your Exhibit 23 --
13 I'm going to pull it up here. Let me know when you
14 can see my screen.

15 A Oh. I can see it.

16 Q Great. Now, I think that a lot of the
17 issues that are raised by what Cimarex is proposing,
18 as we discussed with Mr. Savage yesterday and -- are
19 implicating, you know, ultimately legal issues. I
20 think there's some factual issues that need to be
21 addressed.

22 But one of the things I just wanted to make
23 sure I understood here -- 'cause I think in your
24 testimony you make the point that all -- and you use
25 the word "all." All the Wolfcamp owners will benefit

1 more from Cimarex's proposal than from Permian's
2 proposal. Do you agree with my paraphrasing of your
3 position?

4 A Yes.

5 Q I mean, I'm not going to get into the
6 differences here between each of the Wolfcamp owners
7 and your analysis about the economics. I just don't
8 have the time to do that. But as I understand, just
9 to be clear, the economic argument that you're making
10 here for each of these Wolfcamp owners is based on
11 your economic analysis of the black and tan; agree?

12 A It -- it's based off my expectations for
13 the -- the subject lands --

14 Q Permian stopped the black and tan
15 performance; agree?

16 A And it would also be similar to the adjacent
17 Reed and Stevens development. It's -- it's that sort
18 of EUR -- would be my expectation.

19 Q Did you use the Reed and Stevens offsetting
20 development in your economic analysis in these
21 exhibit?

22 A The -- the 10,000,000 barrel expectation
23 versus the 12 as the high range where all the PH
24 translates into an -- into an uplift. I was trying to
25 bracket the range of outcomes as a sensitivity to see

1 if I could get to a Wolfcamp proposal.

2 Q Okay. Just so I'm clear, is that which is
3 up -- what exhibit is that?

4 A I'm sorry. I showed two tables. And I've
5 showed table 1.3 and 1.4 in D11.

6 Q I just want to make sure I'm on the same
7 page. Okay.

8 A Yes.

9 Q Okay. So on this example, this table,
10 you're showing a bracket of EURs between 10 and 12
11 based on black and tan and then the Lea 7 production;
12 is that right?

13 A The -- the 10,000,000 would be very similar
14 to black and tan. You could get some overperformance
15 on the PH. We tend to predict ranges. I don't think
16 I'm helping any, but the --

17 Q This is helping. So the top table is based
18 on the black and tan; agree?

19 A It would be a similar -- yeah. It would be
20 similar in EUR space for black and tan.

21 Q And the 12,000,000 EUR is based on what?

22 A That would be significant uplift. Minimal
23 degradation from the offset wells that exist like the
24 Verna Rae. I'm just trying to bracket how many
25 additional reserves I would need to add with a

1 Wolfcamp landing to justify drilling it.

2 Q All right. So when you do your assessment
3 down here and you're comparing the economics, picking
4 your ratios, this is just the creation of your ratios
5 that you then apply to the economics to determine that
6 to each of these owners?

7 A Yes.

8 Q Okay. The slide that you compare the
9 economics for these owners is this slide, D20;
10 correct?

11 A Yes.

12 Q And you're just using -- when you say the
13 Permian plan here, PV10, that refers back to the D11?

14 A I mean, it would be my -- my 10,000,000 --
15 yeah. Table 1.3 kind of base case. And instead of
16 doing a sensitivity, it's just one number.

17 Q Okay. I'm just catching up a little bit.
18 Now, on this ratio exhibit where you explain or show
19 how you come up with your ratios between the Bone
20 Spring Wolfcamp, obviously -- you know, there's two
21 owners for whom that ratio doesn't apply; agree?

22 A Yes.

23 Q And that's because they don't own the Bone
24 Spring at all; agree?

25 A And our intent is to get them into the

1 wells.

2 Q But if you pool them, if they don't agree to
3 an agreement of any kind with Cimarex about how to do
4 that, they don't get any benefit from your Bone Spring
5 wells; do they?

6 A They -- they would not, unless we assign
7 them interest like John talked about earlier.

8 MR. RANKIN: Madame Hearing Officer, I
9 don't have any further questions of Mr. Behm at this
10 time.

11 THE HEARING EXAMINER: All right.
12 Thank you, Mr. Rankin. And Mr. Behm.

13 I'm going to pause for a moment in the
14 event any of the other parties has a question of
15 Mr. Behm. No. All right.

16 Mr. Zimsky, do you have redirects?

17 MR. ZIMSKY: Yes, Your Honor. I just
18 have a few minutes.

19 THE HEARING EXAMINER: All right.

20 REDIRECT EXAMINATION

21 BY MR. ZIMSKY:

22 Q Mr. Behm, the EUR that you were just
23 discussing with Mr. Rankin between 10 and 12. That's
24 based upon black and tan, but with those estimates
25 that you tried to bracket what this was going to

1 produce. What other information did you use besides
2 black and tan productions?

3 A I looked at recovery factors in the area.
4 The -- the way some of the different projects have
5 performed. The surrounding production. Incorporated
6 Staci's geology delta in the third there. Again, I'm
7 just trying to provide a range of expectations to see
8 if I can get to enough reserves to see if I can
9 justify drilling four more wells for de-issue.

10 Q And I want to go back to this PH difference.
11 And I think you mentioned density might have a role in
12 this. So the difference between the ten average
13 subject lands and the seven average at the black and
14 tan might be somewhat muted by density considerations.
15 Maybe I'm misunderstanding, but --

16 A PH is porosity times height. And so the
17 height of these two developments is -- it doesn't
18 change by as much as the porosity. Is also a
19 component. So this is in a higher porosity. So I
20 would expect better -- better flow properties.

21 Q Better flow properties which location?

22 A At the Mighty Pheasant Loosey Goosey,
23 there's some upside of being able to drain it more
24 efficiently maybe.

25 Q Okay. And the fact that the black and tan

1 is a denser development versus the Permian proposal.
2 You would expect the denser development -- it might
3 not be an economic way to produce the hydrocarbons,
4 but you would expect to get more from a denser
5 development; correct?

6 A The absence of uplift at denser spacing
7 makes me very confident in my recommendation.

8 Q As four Bone Spring wells in the subject
9 lands?

10 A Yes, sir.

11 Q Okay. And would you say that's the increase
12 in production?

13 A Increase in reserves.

14 Q Reserves.

15 A Yes.

16 Q And Mr. Rankin talked about -- first
17 sentence in paragraph 15. South Lea County's complex
18 across the entire area with flow units changing
19 drastically over several miles. But when you analyze
20 the black and tank, which is 2 miles away from the
21 subject lands, did you find any changes in the flow
22 units?

23 A No. To me, it was -- it's a -- it's a very
24 similar analog.

25 Q But it could be possible you could go 2

1 miles the other way, and it might not be a good
2 analog?

3 A Or as I head further south -- yeah.
4 Eventually, things will change.

5 Q And you testified that water cut is a good
6 proxy for oil saturations?

7 A Yes. The lower the water cut, the -- the
8 better the oil saturation should be in -- in
9 equivalent rock.

10 Q And you have water cut information from
11 nearby lands near to the subject lands?

12 A All the -- all the producing wells water cut
13 is public data like the oil production that's --
14 that's reported.

15 Q And so you're getting at from development
16 similar to the geology of the subject lands?

17 A Yes.

18 Q And I think Mr. Rankin -- he was talking
19 about Exhibit D1. I think he might have said that you
20 created this Exhibit D1, D2. Is this something that
21 Enverus put out that you just used?

22 A Yes.

23 Q And the difference in the sequencing between
24 Permian Resources development plan to co-development
25 completing all of the wells, the four Wolfcamp, and

1 the four Bone Spring, and the subject lands for each
2 section, so eight and eight -- versus the black and
3 tan, which they waited nineteen months to drill the
4 Wolfcamps. Does that have any impact on why you
5 decided that black and tan is analogous?

6 A The black and tan value is -- is the density
7 at an increased stagger, not adding reserves. That's
8 important to me, because it shows that it kind of
9 reinforces that the majority of reserves are accessed
10 by the third sand landing. Otherwise, you would
11 expect to see some barrels added when you add
12 additional wells lower.

13 Q Even if they're developed 19 months later?

14 A Yes. I would expect to see some incremental
15 if significant barrels had been missed.

16 Q And you did not?

17 A Correct.

18 MR. ZIMSKY: That is all the questions
19 that I have. Thank you, Mr. Behm.

20 THE HEARING EXAMINER: Mr. Zimsky, did
21 you say you were done?

22 MR. ZIMSKY: Yes.

23 THE HEARING EXAMINER: Okay. Thank
24 you.

25 Mr. Garcia, do you have any questions

1 of Mr. Behm?

2 MR. GARCIA: I have a few. I'll be
3 quick.

4 CROSS-EXAMINATION

5 BY MR. GARCIA:

6 Q All right. Mr. Behm. Is that correct?

7 A Yes, sir.

8 Q Quick question. I believe you heard me ask
9 the geologist yesterday. Just curious. Do you think
10 Reed and Steven's plans or Permians' plan -- no matter
11 what practice I may have, you'll have that upward
12 growth into the Bone Spring, whether it's a gel drops
13 like water, crosslink, et cetera?

14 A That would be my expectation. Landed as
15 proposed. If it's landed further down in the shale.
16 The more height difference there is, the -- the more
17 unknown that would become.

18 Q Sorry. My questions are just clarification
19 stuff for when I try to order. How high off the
20 bottom are your guys' Bone Springs wells off the
21 bottom of the Bone Springs?

22 A I've got 50 feet in my head. The 40 feet
23 off the bottom of the third sand.

24 Q Did you run a fracks simulation at all on
25 these wells?

1 A No. No, I did not.

2 Q Okay. Based on your prior experience in
3 this area or other areas in New Mexico, what do you
4 think an estimated downward growth of your fracks
5 would be on these Bone Spring wells length wise?

6 A I -- I don't think we would grow into the A.
7 I -- I think we would grow into the Y. But again,
8 I'm -- I'm really confident in the upward growth.
9 It's just that absence of a barrier makes it more
10 likely to add the Y and the X.

11 Q Yeah. I'm just curious about the drainage
12 of the Wolfcamp. And I guess just to clarify, when
13 you talk about Permian's frack length growth, you're
14 talking about effective drainage growth, not just
15 overall frac length?

16 A Yes. What -- what effective drainage is.

17 Q Just want to make sure. Some people talk
18 about frac length and not drainage length. So I have
19 a question on one of your exhibits that's actually not
20 your exhibit. Your counsel submitted an amended
21 motion back in July 28, I believe. Basically, I talks
22 about why you guys would prefer option one as the Bone
23 Springs as XY reservoirs.

24 But then it further says poor quality
25 reservoir of the upper Wolfcamp. I guess I was

1 curious on the reason of the poor quality, since
2 geology yesterday testified that this is basically one
3 reservoir one why the Bone Springs is excellent and
4 the Wolfcamp is poor. And I can probably screenshare
5 this if you haven't seen it.

6 A That would -- that would be helpful. Thank
7 you.

8 Q It should have paragraph 5 right here. Does
9 that look about right?

10 A Yes, sir.

11 Q Okay. And so mainly right here is the --
12 and this was filed again on behalf of your counsel.

13 A Yeah. I'm -- I'm not sure. Might be saying
14 that the third sand is predominantly sand, and then
15 the upper Wolfcamp -- you've got the two XY sand
16 packages. And kind of the rest of it is shale.

17 So the -- the majority of the reserve stuffs
18 would be located within the -- the storage of the
19 third sand. And we would expect that to contribute
20 the -- the most to flow. But the -- the X and Y to me
21 would -- would contribute as well.

22 Q Let me see if I can stop sharing without
23 breaking it. Last questions. Or a few more
24 questions, I guess. On your Exhibit D16. You can
25 screenshare that if you want. I have it open on my

1 side. So I guess so you're counsel is aware of what
2 I'm referencing. So right there, the impact of the
3 Wolfcamp underfill begins?

4 A Yes.

5 Q I guess, how do you know that's the impact?
6 Is that just based off timing?

7 A Yeah. No. That's fair. That is based off
8 of time. But the -- the production response that you
9 see in the wells where you have to clean up all the --
10 the water cuts high. Your GOR is suppressed. Those
11 are all common things that you would see with an FDI
12 where large amounts of water had gone into the zone
13 you were draining. I think I called that out on one
14 of my black and tan exhibits. Yeah.

15 Q Okay. And then one slide up from this page.
16 So this slide confused me. So is this actual
17 production data? Is that what this is?

18 A Yes.

19 Q Okay. That's what I thought. And
20 basically, I think you're trying to call out,
21 highlight here, these are when the wells were fracked.
22 And we saw decreased production or decreased EURs
23 after this. Is that correct?

24 A Yes. I'm trying to put a pre-impact to the
25 wells, what -- what sort of reserves were -- were

1 accessed with third sand only landing.

2 Q Okay. And I think you said each line is a
3 month earlier. So out of curiosity, these wells look
4 like they were shut in for roughly two months after
5 the frac. Do you think any damage was caused by that
6 shut-in that's contributing to the lack of production,
7 or do you think it's mostly the Wolfcamp effect?

8 A And this is an amalgamation of all six well,
9 so there -- there's things outside of reservoir
10 engineering like takeaway constraint. They have a
11 hard time getting these wells back on. So this --
12 this first month isn't all six wells. It takes a long
13 time to get all the wells back producing where they
14 are.

15 Q Okay. And that was probably my
16 misunderstanding. I thought this was the one well.

17 A This is all six.

18 Q Okay. Do you think shut-in did cause any
19 damage to these production, though, or do you still
20 think it would still be mostly Wolfcamp if there was
21 no takeaway issue coming back online?

22 A To me, it would be predominantly Wolfcamp.

23 Q Okay. Do you know the overall Wolfcamp
24 thickness in this area?

25 A For the XY, I would defer to Staci for the

1 thickness of the A. I know it's significantly thinner
2 than where we target it down south.

3 Q Okay. Yeah. I know our Wolfcamp can be
4 like, up to 3,000 feet in some places. And so I guess
5 my question is, your guys' option one is compulsion
6 pulling the Bone Spring only. And essentially,
7 banning drilling in the Wolfcamp is -- pardon my poor
8 summary. Do you think there's going to be resources
9 left in the lower Wolfcamp from not drilling that that
10 won't be drained by these Bone Spring wells?

11 A I -- I think the X and Y will be captured
12 further down in the A1. Again, the further away you
13 go, the more chance you would have of accessing
14 barrels that hadn't been touched. It would just be a
15 less economic well compared to the third, the second,
16 the first sand. Those stuffs would be the -- the tier
17 one targets in the area.

18 Q Okay. One of our goals is to try to get all
19 resources out obviously most effectively, but also try
20 and prevent from stranding resources. And so that's
21 one of the things I'm curious about. Is there going
22 to be stranded lower Wolfcamp resources?

23 A It would be developed -- if -- if it's
24 viable, it would get drilled. It would just --
25 there's finite infrastructure, so I would assume we

1 would both drill third sand first.

2 And -- and you tend to go best to worst
3 economics and production without overfilling your
4 infrastructure. And then, we tend to not work in
5 landing zones. That's one of our approval
6 requirements to go drill wells at -- at Cotera
7 Cimarex. An orphan landing zone would be
8 intentionally stranding a bunch of economic barrels.

9 Q Okay. And then I think last question. When
10 you guys are perfining and fracking these wells --
11 assuming you're perfining, you're fracking -- are perms
12 being rotated all 180 degrees or all 360 degrees?

13 A No.

14 Q What direction would they be mostly aimed
15 in?

16 A Mostly up.

17 Q Mostly up.

18 A Zero degree.

19 MR. GARCIA: I think that's all my
20 questions. Thank you for all your exhibits.

21 THE HEARING EXAMINER: All right.
22 Thank you, Mr. Garcia.

23 Ms. Thompson, do you have questions of
24 Mr. Behm?

25 MS. THOMPSON: I have no questions at

1 this moment.

2 THE HEARING EXAMINER: All right.

3 Thank you. Is there any reason not to excuse

4 Mr. Behm, for the time being, anyway?

5 MR. ZIMSKY: Madame Hearing Examiner, I
6 have a point of clarification on Mr. Garcia's question
7 about the buffer.

8 THE HEARING EXAMINER: Yes. Go ahead.

9 MR. ZIMSKY: I don't know if it's
10 something to necessarily list it from the witness.
11 But we're just proposing, I think, the bumper in the
12 sand in the upper Wolfcamp and not, you know, in the
13 shale. So the lower Wolfcamp -- we're not saying that
14 can't be developed under the proposal. The one
15 option.

16 So I just wanted to clarify. It's in
17 the papers. It's a proposal, so I don't think this
18 witness necessarily has to testify to that. I just
19 want to make sure that that was clear. And Mr. Garcia
20 may have said that, but I might have misheard.

21 MR. GARCIA: No. Thank you for the
22 clarification. I figured I butchered what the motions
23 and exhibits had. Trying to process them. I think
24 it's like 1500 pages, and this case file is rough.

25 MR. ZIMSKY: It's in there, so just

1 want to make sure you were aware. Thank you.

2 MR. GARCIA: Thank you.

3 THE HEARING EXAMINER: All right.

4 Well, thank you Mr. Zimsky. And thank you Mr. Garcia.
5 And thank you, Mr. Behm. It seems like it's probably
6 time to take a lunch. It's 12:20. Does 1:30 work for
7 folks?

8 MR. SAVAGE: Madame Examiner, I was
9 wondering if I could quickly get in the notice,
10 Exhibit E, right before lunch. It's a one paragraph
11 statement to accept the exhibits. And I think that we
12 would be done submitting all of our exhibits. Do you
13 want to wait until --

14 THE HEARING EXAMINER: Oh. Terrific.
15 That sounds like Mr. Savage. Go ahead.

16 MR. SAVAGE: I'm sorry. Did you mind?
17 We can get this out of the way, and then we can go to
18 lunch and --

19 THE HEARING EXAMINER: Sure. Go ahead.

20 MR. SAVAGE: My name is Darin Savage,
21 representative and attorney for Cimarex Energy
22 Company. I testified today based on the Exhibits E
23 and Subexhibits E1 through E3 and hearing packets 1,
24 2, and 4, in cases 23448 through 23451, 23452 through
25 23455, and 23494 through 23601.

1 That all working interest owners were
2 sent notice letters or waived notice in a timely
3 matter. And publication notice was timely published
4 in the Hobbs News-Sun, a newspaper of general
5 circulation in Lea County, New Mexico, as shown in
6 Subexhibit E3. There are a handful of letters still
7 in transit -- just a handful -- and designated as
8 mailed in the mailing report.

9 And there is one returned letter from
10 Diamond Star Production Company, LLC, which appears to
11 be at this time unlocatable. The mailing report and
12 reports of receipts returned are provided in Exhibit
13 E2. And sample notice letters are provided as
14 Exhibits E1. At this time, I ask that Exhibits E and
15 all Subexhibits E1 through E3 and hearing packets 1,
16 2, and 4, and the above said cases be admitted into
17 the record. And I am available for any questions.

18 THE HEARING EXAMINER: All right.
19 Thank you, Mr. Savage. Let me pause for a moment in
20 the event any party has an objection. I don't hear
21 any. So Exhibit E and all the subexhibits are
22 admitted. And thank you very much.

23 (Exhibit E was marked for
24 identification and received into
25 evidence.)

1 MR. SAVAGE: Thank you.

2 THE HEARING EXAMINER: So let's break
3 for lunch until 1:30.

4 (Off the record.)

5 THE HEARING EXAMINER: Does Counsel
6 have an impression yet as to whether we'll actually be
7 able to finish today? Ms. Salvidrez has to make
8 certain arrangements if we're not going to do that.

9 MR. RANKIN: I remain hopeful that we
10 will finish today. We're going to switch our order or
11 sequence of witnesses so that we'll do Mr. Fechtel as
12 the engineering witness. And he probably will take
13 the most time.

14 I think probably only do two
15 witnesses -- I mean, our facilities engineer will just
16 be mostly addressing his direct exhibits to get him
17 accepted to the record. And then, we'll just touch on
18 some rebuttal for land and geology. So I believe that
19 we should be able to finish today depending on how
20 extensive the cross-examination is.

21 THE HEARING EXAMINER: All right. And
22 keep in mind we will have to stop around 4:30. So all
23 right. Well, let's give it a shot, then. And if you
24 would please just give me and Ms. Salvidrez a heads-up
25 if you come to the reasonable conclusion that it's not

1 going to finish today.

2 MR. RANKIN: Okay. Will do.

3 THE HEARING EXAMINER: All right.

4 Thank you very much. Please go ahead and call your
5 first witness.

6 MR. RANKIN: Madame Hearing Officer,
7 the Division would like to call our first witness in
8 this case. In this case, it's going to be Mr. John
9 Fechtel.

10 THE HEARING EXAMINER: All right.

11 Thank you.

12 Mr. Fechtel, would you please raise
13 your right hand.

14 WHEREUPON,

15 JOHN FECHTEL,
16 called as a witness and having been first duly sworn
17 to tell the truth, the whole truth, and nothing but
18 the truth, was examined and testified as follows:

19 THE HEARING EXAMINER: All right.

20 Thank you. I'm having a little trouble hearing you.
21 If you would speak up and spell your name for the
22 transcript, please.

23 THE WITNESS: John Fechtel. It's
24 J-O-H-N, F-E-C-H-T-E-L.

25 THE HEARING EXAMINER: Thank you.

1 Go ahead, Mr. Rankin.

2 MR. RANKIN: Thank you.

3 DIRECT EXAMINATION

4 BY MR. RANKIN:

5 Q Mr. Fechtel, if you would maybe just check
6 the input on your audio, and then there may be a way
7 you can increase sensitivity of your microphone. That
8 may help with the sound quality.

9 A Is it hard for you as well?

10 Q Just a little bit. Yeah. It's a little
11 soft.

12 A Yeah. It's -- it's -- the settings are
13 locked, it looks like.

14 Q Yeah. You sound better now.

15 THE HEARING EXAMINER: Yeah. I think
16 he sounds great.

17 THE WITNESS: If it becomes an issue, I
18 have another one here. We can switch.

19 BY MR. RANKIN:

20 Q You sound a lot better. Mr. Fechtel, will
21 you please state your full name for the benefit of the
22 court reporter.

23 A John Fechtel.

24 Q And will you spell your last name?

25 A F as in Frank, E-C-H-T-E-L.

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1 Q By whom are you employed and in what
2 capacity?

3 A The reservoir manager for Permian Resources.

4 Q Have you previously testified before the Oil
5 Conservation Division?

6 A No.

7 Q Will you please review for the examiners --
8 let me just ask. Is your resume attached to your
9 exhibit packet as Exhibit 1?

10 A Yes.

11 Q Will you briefly review for the examiners
12 your education and work experience as a reservoir
13 engineer.

14 A I graduated from the University of South
15 Carolina in December of 2012. I've been a reservoir
16 engineer since 2015 for Pioneer Natural Resources as
17 an asset development engineer, an asset development
18 lead, and as a senior reservoir engineer on a regional
19 team.

20 Joined Colgate in 2019 as the development
21 plan manager -- pardon me -- where I oversaw kind of
22 all aspects of field development. And 2022 with the
23 merger with Centennial, I became the reservoir
24 manager, you know, when Permian Resources was created.
25 That's my current role, and I continue to oversee

1 asset development and oversight of kind of asset
2 development engineers.

3 Q Are you familiar with the applications that
4 were filed in these competing cases between Cimarex
5 and Permian?

6 A I am.

7 Q Have you conducted a study of the reservoir
8 in the subject lands?

9 A Yes, I have.

10 MR. RANKIN: At this time, Madame
11 Hearing Officer, I would tender Mr. Fechtel as an
12 expert in reservoir engineering.

13 THE HEARING EXAMINER: Let me pause for
14 a moment in the event any other party has an
15 objection.

16 MR. ZIMSKY: Madame Hearing Officer, I
17 have just a voir dire question.

18 THE HEARING EXAMINER: All right.
19 Please go ahead.

20 CROSS-EXAMINATION

21 BY MR. ZIMSKY:

22 Q Mr. Fechtel, your degree is in mechanical
23 engineering; is that correct?

24 A It is correct.

25 Q And did you take any petroleum engineering

1 classes at the University of South Carolina?

2 A Sure did not.

3 MR. ZIMSKY: That's all the questions I
4 have. And I don't have an objection.

5 THE HEARING EXAMINER: All right.
6 Thank you, Mr. Zimsky.

7 He is so recognized. And, Mr. Rankin,
8 go ahead.

9 MR. RANKIN: Thank you.

10 DIRECT EXAMINATION

11 BY MR. RANKIN:

12 Q Mr. Fechtel, would you please -- do you have
13 your exhibit handy in front of you or the exhibit
14 packet?

15 A Yes, sir.

16 Q And did you prepare a self-affirmed
17 statement that's been marked as Exhibit F in that
18 packet?

19 A Yes.

20 Q Did you also prepare exhibits that were
21 attached to your self-affirmed statement, Exhibits F1
22 through F8?

23 A Yes.

24 Q Do you have any additions or corrections or
25 updates to those exhibits that were made to your

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1 statement?

2 A We did add one slide or replace on slide.
3 Is that included in this?

4 Q No. Which slide is that, Mr. Fechtel?

5 A Let me get to the exhibit number. This
6 would've be Exhibit F3.

7 Q Okay. And what was the change made to
8 Exhibit F3?

9 A Just one well being reclassified.
10 Originally, the one -- the Verna Rae 133 was included
11 and co-developed with the Wolfcamp A when it is not --

12 Q Okay. So that would be a replacement
13 exhibit. And that exhibit was filed with the Division
14 and circulated to all parties; correct?

15 A Yes, sir.

16 Q Right. I think I'm hearing some background
17 noise, and I don't know if it's from you, John, or
18 from somebody else.

19 MR. RANKIN: But just want to make
20 sure. If we can, everyone can mute so we aren't
21 hearing distractions in the background.

22 BY MR. RANKIN:

23 Q Except for you, John. Don't mute. Now,
24 other than that, did you have any other changes or
25 updates to your testimony or exhibits on direct?

1 A Yes, sir.

2 MR. RANKIN: Okay. At this time,
3 Madame Hearing Officer, I would move the admission of
4 Exhibits F and the attachments into the record.

5 MR. ZIMSKY: No objection.

6 THE HEARING EXAMINER: Let me pause
7 for -- okay. Well, thank you for that. And let me
8 pause just momentarily in the event any other party
9 has an objection. All right. Exhibit F and its
10 attachments are admitted.

11 (Exhibit F was marked for
12 identification and received into
13 evidence.)

14 MR. RANKIN: Thank you.

15 BY MR. RANKIN:

16 Q Now, Mr. Fechtel, have you reviewed the
17 testimony and exhibits that were prepared by Cimarex
18 and their reservoir engineer? John, I'm sorry. I
19 don't know what it is. But now, all of a sudden,
20 sometimes I'm not catching your yeses. Will you make
21 sure that -- maybe try again so I make sure I hear
22 you.

23 A I have -- I have reviewed the exhibits.

24 Q Okay. And did you prepare rebuttal exhibits
25 in response to Mr. Behm's testimony and exhibits?

1 A I did.

2 Q Are those marked as Exhibit K?

3 A Yes, sir. They are.

4 Q Okay. I'm going to go ahead and full these
5 up. And then we can walk through them. And I'll
6 share my screen in just a moment once I get them on.
7 If you let me know once you see my screen. Can you
8 see my screen, Mr. Fechtel?

9 A I can.

10 Q All right. You prepared some testimony in
11 response. What does this first slide show? And
12 explain to us what we're looking at here.

13 A Right. And just given that we've had
14 microphone, if you raise your hand at all, I'm try to
15 kind of stop or get louder.

16 But yeah. So this first exhibit -- kind of
17 to step back. Obviously, we just went through
18 Mr. Behm's and Cimarex's direct and cross here. And a
19 lot of the argument around the property development of
20 this area is based on offset wells and based on kind
21 of what other operators have been doing.

22 Exhibit D3 on the left and D4 on the left
23 were both provided by Cimarex. D3 in the top-left is
24 the kind of map overview in the AOI. They reference
25 often as part of a study they did of these lands and

1 their recommendation that Bone Spring should be
2 drilled by itself.

3 And then D4 is a kind of histogram of
4 activity in the area broken out kind of between the
5 third Bone Spring, the Wolfcamp, and by operator.
6 They also attached a well list that we referenced.
7 Believe it's D24.

8 And there are a few differences in the way
9 that -- those were highlighted already by Cimarex in
10 their testimony. What we did is take all the wealth
11 in the offset area and pull the OCD pooling code and
12 then walk through kind of that development. I do
13 think it paints a little bit of a different story than
14 the one Cimarex put forward regarding the Wolfcamp as
15 a primary target in the area.

16 Decidedly, the Wolfcamp has been targeted
17 far more than Cimarex asserts with -- since 2018, 40
18 percent of the wells targeting the Wolfcamp. I do
19 think there are a number of reasons this is happening.
20 Differences in landing and incorrectly identified
21 wells. But the main takeaway is that the Wolfcamp is
22 a real target, and it is decidedly appraised and
23 included with development.

24 Again, there are differences in landings,
25 but I do think that it's important when you don't have

1 your own direct development, and you're relying on
2 offset development, that it is crucially important
3 that we understand what is going on on the offset
4 wells.

5 Q Mr. Fechtel, if you would explain how it was
6 that you identified whether the wells were in the
7 Wolfcamp or not in the portion of this exhibit on the
8 right.

9 A This is by OCD producing pool.

10 Q What does this next exhibit show?

11 A These are the wells in the Wolfcamp by OCD
12 producing pool in the same kind of AOI presented by
13 Cimarex. We don't need to spend a ton of time on
14 this. There are two columns to focus on, though. We
15 have the producing pool and then we have the Cimarex
16 formation.

17 So again, that Cimarex formation came from
18 Exhibit D24. And where you see an EA -- N/A. Pardon
19 me. Means that it was not present in the exhibit.

20 Q Okay. So looks like maybe approximately 10
21 percent of the wells in the Wolfcamp in the AOI were
22 not identified in Cimarex's analysis?

23 A It would probably be more than 10 percent,
24 but I haven't counted.

25 Q Okay. Some number anyway of the wells were

1 not included, identified --

2 A Sorry.

3 Q Say that again.

4 A Sorry. Go ahead.

5 Q Okay. Just some number of wells were
6 actually included in the Wolfcamp but were not
7 included in Cimarex's assessment?

8 A Yes, sir.

9 Q Tell me. What does this next slide show?

10 A Right. So I think let's start in the middle
11 right of the slide. This is just a locator map. So
12 these wells are pretty far away from the area of
13 interest here. But I have included them, because they
14 were part of Exhibit D24 where Cimarex lists the wells
15 that were used as part of their study.

16 The top left here. I've just pulled the
17 directions in for these wells in this kind of subset
18 and colored them by the identified producing zone
19 provided by Cimarex. Again, you know, we're
20 getting -- we're coming out of the basement right
21 here. Landings are challenging. I fully expect that.

22 But a few things do jump out, particularly
23 when we're talking about third bone sand wells that
24 are in the same unit and have greater than 450 feet of
25 TBD separation. And they're also where we have

1 Wolfcamp wells that are, you know, shallower than the
2 third Bone Spring wells. If anything, it just
3 highlights that there are some peculiarities with how
4 these wells have been landed and how they've been
5 identified in these exhibits and as part of the study.

6 On the bottom then, I've done the same
7 well -- I've actually added one well that wasn't in
8 the last. It's in pink. I probably should've chosen
9 a little bit different color. But it's a well --
10 we -- we landed in the Harkey. And then the -- the
11 rest of the wells. You can see there's a large subset
12 that I believe are actually second Bone Spring wells.

13 Again, they're pretty far away. I don't
14 think they're a huge portion of this discussion other
15 than to say that when we're doing kind of deep studies
16 on the appropriate development of an area, it's
17 important to understand what other people are doing,
18 what they're targeting, and what wells are being
19 drilled.

20 Q And tell me this next exhibit. What does it
21 show?

22 A Yes, sir. This is just for a succinct
23 picture, a full picture. These are the same wells,
24 but they're actual well names and APIs. And again,
25 same -- the identified formation and then the

1 formation -- so this is not the OCD pool. You know,
2 this will all be Bone Spring, just as the third bones
3 were. This will be what I believe they are.

4 Q All right. Next slide. Tell me what this
5 shows. And what is it responding to?

6 A So this is -- you know, we in our original
7 exhibits did not include the Apache black and tan's
8 beyond date cursory note on them, primarily because
9 we -- we really didn't think they were analogs or
10 going to be an important part of the discussion.

11 Cimarex has spent quite a bit of time, I
12 believe, in Mr. Behm's direct testimony and in the
13 cross-examination just before lunch there -- this was
14 well covered. But the black and tans have been
15 identified as the only one development plan within the
16 entire AOI, similar to the plan Permian Resources is
17 proposing for its Joker and Bane wells.

18 And it's the Apache drill black and tans.
19 We do not believe that these are an appropriate analog
20 for what we are proposing for a number of reasons.
21 Three key ones listed on the left. The geology. Not
22 analogous, as Mr. Rankin touched on in
23 cross-examination.

24 The Wolfcamp itself has a -- a phi height or
25 a porosity height of 43 percent less than in the --

1 the units -- the Bane and Joker units that we're
2 talking about today. The density is also extremely
3 different. You know, approximately 37 percent
4 different in the density. I think probably most
5 important in all this -- and we'll touch on this as we
6 go through the next handful of slides -- is the
7 sequencing.

8 You know, before we flip to the next one, I
9 believe core to Mr. Behm's assertion that the Wolfcamp
10 does not add any reserves is the fact that when Apache
11 came back in below the third Bone Spring wells, the
12 overall reserves as he has them forecasted did not
13 increase, as indication that whatever reserves
14 actually existed there were already being drained by
15 the third bone in the inclusion of Wolfcamp wells a
16 year and a half later or 19 months later. Did nothing
17 to -- to increase production, because that had already
18 been captured. I do not think that is appropriate,
19 but we will get that for the next few slides.

20 Q Great. Okay. Explain your analysis of
21 Mr. Behm's discussions around the black and tan
22 production in this slide.

23 A Awesome. So we're going to step back a
24 little bit and talk about the fundamentals in
25 empirical forecasting. So you know, the kind of bread

1 and better forecasting reservoir engineering is
2 decline group analysis. And implicit in decline group
3 analysis, you are -- you are taking history or
4 production that you already have, and you are
5 forecasting a trend to that.

6 And exactly as you're highlighting there, we
7 have the left. The top-left quadrant is -- this is
8 just synthetic data. This isn't real or related to
9 black and tan. But we have production data, and we
10 fit a curve to it.

11 And then, we're assuming that that curve has
12 diagnostic ability to forecast out to the future what
13 that well -- those wells would've done. We can see
14 then the bottom plot when we add that data. That's
15 exactly what happened. And this is really core.
16 Right. This is the idea that what see in the past can
17 predict the future.

18 If we move over to the right side of the
19 page, looking at the analysis of the black and tans.
20 In, you know, bubble one then, we see the third Bone
21 Spring only composite forecast or composite well
22 production that's being forecasted.

23 And then, you know, moving to slide -- or to
24 bullet two there on the right, we can see the -- you
25 know, the -- the implication is that that forecast

1 with the third bones without the Wolfcamps would've
2 done and the delta between that and the actual
3 productions. The damage caused by the third bones.

4 I'd like to highlight that this is not a bad
5 approach. Right. This is -- this is pretty core.
6 You -- you forecast out what something would've done,
7 and then when a change happens, you -- you can
8 attribute, you know, the cause to -- then that's a
9 reasonable understanding of value creation, value
10 destruction. I do have issue with the way that this
11 is being used. And some violations of core
12 assumptions of this.

13 If we move to slide seven. So you know, on
14 the left side of that -- that black line, as Mr. Behm
15 highlighted in the cross-examination, that is the kind
16 of -- where the Wolfcamps were developed beforehand.
17 And in his direct testimony, you know, he's explicitly
18 saying that the forecast is fit through May of 2019.
19 And so that's right before that red forecast missed
20 that I've added in starts. But this is well before
21 the Wolfcamps were -- were fracked.

22 And so somehow, our third Bone Springs were
23 changed. And -- and the forecast we've created --
24 Mr. Behm's created has lost the ability to predict.
25 And this is well before the Wolfcamps were fracked.

1 I -- you know, I don't think it was direct, but some
2 of the -- some of the redirect earlier -- some of the
3 examination of Mr. Behm did highlight -- you know,
4 there was a frac offset.

5 And then, you know, there's something else
6 that could've been going on. Perhaps the well heads
7 had to be replaced so that a walking rig could drill
8 the Wolfcamps and the same pads. And it -- it doesn't
9 matter, actually. The whole concept with empirical
10 forecasting is that you have a trend that you can fit,
11 and you can forecast that out.

12 And once you lose that trend, you need to
13 have another trend to fit before you know that it's
14 valid. And this is actually something that -- I'm
15 going to refer to some literature real quick. So this
16 is from site petroleum engineering. This is the
17 golden rule of decline group analysis. I'll read
18 just -- it's a quick little paragraph.

19 But the basic assumption in this procedure
20 is that whatever causes controlled the trend of a
21 curve in the past will continue to govern its trend in
22 the future in a uniformed manner. Fitting a line for
23 the performance history and assuming the same trend
24 will continue in the future forms the basis of DCA.
25 It is important to note here that in the absence of

1 stabilized production trends, technique cannot be
2 expected to give reliable results.

3 So this is -- this is a very, very
4 fundamental piece of this. It's actually one of the
5 core constraints proposed by ARPs in the 40s. But
6 this means that even if it wasn't the frac, even if it
7 was just change in operational conditions, it is
8 completely technically invalid to use a trend that was
9 before operational conditions or constraints were
10 create or happened and forecast out in time.

11 Now, in reality, what I believe is
12 happening -- I'll step back briefly. I can't say that
13 it wasn't operational changes. It wasn't change in
14 well heads. This is public data. But again, it
15 doesn't matter. It violates a core tenant and core
16 assumption of this analysis. But coincidental to --
17 to the miss on the forecast was a -- frac. The little
18 bear 2H.

19 And so you know, this has come up earlier in
20 cross that -- that Cimarex believes this is actually a
21 Wolfcamp well. You know, this is producing into the
22 Bone Spring pool. Either way, at Bone Spring, in my
23 opinion, well offset was completed. It did impact the
24 other wells.

25 We have not seen a stabilized trend to

1 forecast. And we have no technical ability to
2 deconvolute the impact of the offset well, the impact
3 of changing operational conditions, and the impact of
4 the Wolfcamp wells being completed.

5 Now, one thing that isn't called out here
6 that we hadn't originally intended to fully dive
7 into -- but upon cross, one thing that would be
8 helpful for everyone -- what I think Mr. Behm is
9 talking about when he says that, you know, the
10 Wolfcamp wells came in under the third Bone Springs.

11 The third Bone Springs got a lot worse, and
12 whatever wells -- whatever performance increase the
13 third Bones saw -- I'm sorry. The Wolfcamps saw was
14 just robbing from the third Bones. And the idea being
15 that we didn't create any -- you know, Apache didn't
16 create any SRV by adding -- you know, SRV being
17 stimulated rock volume.

18 So this is the -- the rock that you break
19 down and then drain where they -- you know,
20 unconventional hydraulic fracturing. So the idea
21 being here that no SRV -- additional SRV was created
22 by the addition of these -- these wells. And then,
23 that is a sign that the third Bone Springs were
24 already adequately draining it, and so the Wolfcamps
25 came in, and they're just touching the same rock.

1 I think there's a little nuance here, and
2 it's actually -- I don't think that wrong, but I think
3 it's pretty wrong in a way that isn't fully
4 appreciated here. And so we'll be getting on that a
5 little bit as we go through. I think the next slide
6 highlights some of that as well, and I think Mr. Behm
7 also highlighted that.

8 While it isn't called out in any of the
9 original testimony, it looked like it's the same third
10 Bone Spring wells that are producing -- it actually is
11 one fewer wells. One well was lost during this and
12 has since been abandoned. And of the Apache third
13 Bone Spring wells. So I -- I hit that kind of
14 quickly. But if -- if we go to the next slide, I'll
15 try to slow down a bit.

16 Q Mr. Fechtel, just real quick. You guys
17 assigned little bear to the Bone Spring pool. How do
18 you have confidence that that's in the Bone Spring and
19 not the Wolfcamp, just so I understand?

20 A Correct. Yeah. And we'll start with -- it
21 is in the Bone Spring pool. We'll start with where
22 it's landed. But more than anything -- we'll hear
23 from Ira here in a bit. But Ira was the geology
24 manager that managed the team that drilled this well
25 and actually many of the wells in the area here.

1 And -- and has -- he can speak a lot better to the --
2 the landings there. So it'll take a bit of the nuance
3 out of whose grid is correct. But this was started in
4 the third Bone Spring.

5 Q Next slide. What does this show? And
6 explain how this fits into your analysis.

7 A Yeah. So we'll start at the top left here.
8 And what we're seeing in the top left -- this is
9 actually from the HF2S2. You know, that does get a
10 lot of screen time in Cimarex's testimony, so we are
11 reaching out to it a few times as well. And you know,
12 that is 43.7 miles away, I believe I recalled it.
13 But -- but there are -- it's a fascinating study. And
14 you know, a lot was done. A lot of really awesome
15 learnings.

16 And there's certainly pieces that we can
17 take away from this by it being very far away and --
18 and very different play. And so this particular
19 screenshot. This is kind of micro-seismic colored by
20 the density of micro-seismic events. So this is where
21 kind of rock is being broken down. We're looking down
22 the well bores. So -- so it's a little hard to make
23 out, especially with Mr. Rankin changing everything.

24 So we're looking down the well bores.
25 And -- and you're seeing kind of on the left side

1 then -- these are the same well bores on the left and
2 the same well bores on the right. But we're looking
3 at it at a different portion of the lateral. On the
4 left side, there's no parent well next to it. And
5 then on -- on the right side, there is a parent well
6 that has caused parent depletion. But we see that --
7 we see several things.

8 First off, you know, we see kind of broad
9 coverage up and down. But we also see that on the
10 left side, we're -- we're kind of well-contained. And
11 then on the right side, we see that the -- there's
12 kind of strong bias. We actually see fractures
13 growing towards the depletion. And this is a -- a
14 pretty fundamental piece of unconventional
15 development.

16 This is why co-development is so absolutely
17 important. It's because when you create depletion,
18 your fracture's biased towards that. And what can
19 happen -- you have the first -- you know, fractures
20 start growing preferentially towards depletion. And
21 the first fracture that interacts with a depleted zone
22 starts taking all the fluid. And from that point
23 forward, you're breaking down no new rock, so no new
24 SRV is created.

25 Not because that SRV had already been broken

1 down by something else necessarily. Because you
2 created no net pressure by tying it to a depleted zone
3 with your first fracture. And this -- this we can see
4 in the black and tans; right? Black and tans were --
5 were developed below existing wells, below dense third
6 bone development that had already depleted the third
7 bone largely. And as soon as you put wells --

8 Q But you move on, I just want to make sure.
9 Because I want to make sure we understand exactly what
10 this inset shows and how it relates to the two sides
11 of this depiction. So I want to make sure it's clear.
12 Will you just make sure --

13 A If you zoom in, it might help.

14 Q Yeah. I'll do that. I want to make sure
15 it's clear what the inset shows in relation to where
16 it says north and south and how -- how these -- I
17 think you said these were existing offsetting laws.
18 How that informs this -- this other depiction here in
19 the south. I want to make sure that's captured.

20 A Right. So you see in the middle there,
21 there's a there well pad that is -- they're -- you
22 know, they're longer laterals. And so we're actually
23 looking down those well bores. And then on the north
24 side, if you look to the right of them, to the east,
25 there would be no parent well.

1 On the south side of it, if you look to the
2 side, there would've been existing parent wells. And
3 so we're seeing the micro-seismic as they exist when
4 there's not a parent well on the side called north,
5 and then on the other side, the south side, where
6 there was a parent well. And we see very different
7 fracture growth.

8 And then, we see -- you know, you see white
9 space in between too. Right. While there may be
10 larger coverage, there's lots of stuff left behind.
11 That's because these fractures were influenced to grow
12 elsewhere. They reached out elsewhere very quickly.
13 And then, as soon as they encountered kind of low
14 pressure zones, they started taking all the fluid in
15 that direction. They stopped breaking down any new
16 rock.

17 Q Okay. So just explain again. You were
18 talking about SRV and the difference -- and just
19 explain so I understand. Where you don't have
20 existing wells and when you do have existing wells,
21 the difference in SRV volume.

22 A And there are times that it's much more --
23 much more dramatic than this. Right. But -- but SRV
24 is -- can be correlate with micro-seismic. There's
25 some complexities. But what we're seeing here is an

1 example of where SRV is -- is not being created and
2 not being created with the same magnitude, the same
3 complexity, where there is depletion.

4 Because the depletion itself is biasing the
5 fractures towards it. And as that's happening, you're
6 not breaking down new rock elsewhere. Some rocks
7 being broken down as the fractures grow out. But as
8 soon as they start interacting with -- with the
9 low-pressure -- you lose your net pressure. You lose
10 your ability to break down new rock.

11 Q Explain how that plays into your analysis in
12 this slide with the black and tan.

13 A Yeah. So black and tans -- Apache came in
14 under existing well bores, and then they -- they
15 fracked the Wolfcamp there. As -- as Cimarex asserts,
16 you know, fracks grow up. They grow up into the
17 depleted zone, and they -- those well bores took all
18 the fluid and to the point where you can see lost well
19 bores.

20 We have an abandoned 302H on the right
21 there. And we see lots of issues produced in these
22 wells thereafter. Now, this could've been takeaway.
23 It could've been operational issues. But the
24 assertion that the black and tans -- the Wolfcamp
25 development didn't create any new SRV may well be

1 correct, but that's because they all went into the
2 third bound because there was depletion there, not
3 because the Wolfcamp and third bone are incompatible
4 together.

5 Q On the operational side, explain more about
6 the 302 and what happened here. I mean, explain --
7 looks like something happened to this red well. I
8 want to understand more about --

9 A Yes, sir. So the red well then is the 302H.
10 It's the well that is ultimately abandoned. And when
11 it's first -- you know, we see it -- we see it drop
12 the first time. And this is -- this is, you know,
13 coincidental in time with the black and tan 2H
14 completion.

15 We do see kind of typical frac response that
16 Mr. Behm identifies. You know, elevated water ratios
17 being depressed or raised being chief among them. And
18 then we all -- you know, we see it struggle to
19 recover. And then ultimately, it stops producing
20 altogether. And -- and that is when, you know, the
21 black and tan completion -- the Wolfcamp completion
22 happens.

23 From that point forward, you know, I think
24 around the next year, around -- the only -- the months
25 that could've been produced by each well, less than

1 half of those months do any of the wells produce
2 hydrocarbon.

3 So there's more nuance to saying that -- oh.
4 The third bone's completely stopped producing, and
5 then the Wolfcamps took all the oil. The third bone
6 stopped producing, but it may've been 'cause you
7 pumped a bunch of sand and water into them or you --
8 something was going on. Again, public data. We don't
9 know.

10 What we do know is that Apache had abandoned
11 the well. That's in the ODC filing. But I -- I think
12 that they're -- it's -- it's a little cavalier to say
13 that it's just because it was the same reservoir
14 that's now being drained by the Wolfcamps. The
15 Wolfcamps themselves are terrible, but they're
16 terrible because they didn't break down any rock.

17 Q Just so I don't forget. I want to make sure
18 you cover this. But explain how the sequencing that
19 you propose will avoid some of those problems. I just
20 want to make sure that's clear.

21 A Yeah. It's -- it's pretty uncommon to
22 co-develop wells together and then immediately have to
23 abandon one of those wells because you fracked into
24 it. Co-developing reduces the risk to the well bores.
25 You're not going to frack it yourself with your next

1 set of wells if you did them all together.

2 So that's -- that is, you know, one key
3 reason that you wouldn't see this if you co-developed.
4 But there are also a lot of advantages to
5 co-development that -- beyond just the list of well
6 bores. You can see them on that in the -- in the
7 micro-seismic stuff from HFTS to the top there. You
8 know, the -- if we just focus on -- you know,
9 there's -- there's layers of kind of science they were
10 doing in this.

11 Again, very -- very cool study. But this
12 one in particular, they were -- they were testing
13 sequencing of well bores to see if they could -- if
14 they could, you know, change fracture growth. If you
15 look at the -- you know, we'll focus on non-parent
16 depletion piece and focus on the far left well bore
17 that's -- that cloud is one. Right. That's a -- a
18 much small -- that's a much smaller event cloud.

19 Right. The micro-seismic event right there
20 were -- were far less than the other ones. And then
21 with successive completions, we're creating more
22 fractures. And -- and really, additional wells
23 co-developed have the ability to increase that
24 pressure, increase complexity, and to increase the
25 amount of rock that you're breaking down.

1 That's one reason that, you know, throughout
2 this, you'll see lots and lots of evidence that
3 co-developed Wolfcamp and third bone -- even in the XY
4 third bone up in -- in this area, are creating
5 additional SRV. And -- and that leads to increased
6 reserves. It leads to increased, cash flow, and --
7 and mineral checks to -- to folks that own in both
8 formations.

9 Q Anything more on this exhibit, Mr. Fechtel?

10 A I think I've beaten this one up pretty
11 thoroughly.

12 Q Next one. What does this show? Explain how
13 your SRV comments play into this.

14 A Well, I'd actually like to jump to 11, if
15 that's possible.

16 Q Oh. Sorry. Thank you. Yeah.

17 A Oh. You're good. That's my order that I
18 gave you. So we're going to -- we're going to step
19 into -- you know, I believe Mr. Behm walked through
20 this with everyone here a little bit ago. But I'm
21 just going to highlight a few different pieces from a
22 few different exhibits. And -- and so I've tried to
23 kind of identify where these are coming from. The top
24 left is Exhibit D9.

25 And in this, Mr. Behm is -- is kind of

1 highlighting the EUR that, you know, these Wolfcamp
2 wells had by his own forecasts. And so he's saying
3 that that -- you know, these Wolfcamp wells -- five
4 were drilled. And they have a total EUR of 890 NVO.
5 So you know, between the five wells then at 890 NVO,
6 that's 178 NVO per well.

7 And each of these wells -- I mean, the
8 average well length is about 4600 feet. And so we
9 can, you know, surmise from this that the average EUR
10 as forecasted by Cimarex is 38.5 barrels per foot.
11 And you know, that's -- that's an interesting
12 benchmark, especially as we move to Exhibit D11.

13 In D11, Mr. Behm provided a sensitivity,
14 which is great engineering practice. But a
15 sensitivity around what will we have to see for this
16 to have been a good decision. And -- and he comes
17 to -- we would've needed to see -- you know, he has
18 sensitivities. There are a couple different, you
19 know, benchmarks. But in -- in kind of the worst case
20 for the argument we're making -- you see a 40 percent
21 performance increase in these -- in these Wolfcamps
22 for this to have been a -- a good decision. Kind
23 of -- I -- I think related.

24 But up top, we see also the -- the phi
25 height calculations between the black and tans and

1 also the -- you know, the Joker and Bane units or the
2 Loosey Goosey, Mighty Pheasant units. There's lots of
3 discussion to be had around if phi height actually
4 correlates with -- with production.

5 But if we follow the -- the kind of logic
6 train as set out by Cimarex, then this is a 43 percent
7 increase in phi height in the Wolfcamp again against
8 the 40 percent needed -- performance increase needed
9 for the Wolfcamps to have been accrued for at least
10 neutral on PV10 bases.

11 You know, but Cimarex isn't fully relying on
12 the black and tan development to -- for their
13 assessment in the third bone and -- and Wolfcamp in
14 favor of the third bone, at least. And so Exhibit
15 D12 -- you know, we'll spend more time on this exhibit
16 here in a little bit. But in Exhibit D12, Cimarex has
17 provided the EUR of their lone Wolfcamp test in the
18 area.

19 And so that EUR there is listed at 837 MBO
20 at -- at 9500 feet. So you know, that comes to 85
21 barrels per foot, which -- which is well above the --
22 the 54 barrels per foot that has been laid out as what
23 has been necessary for the Wolfcamp to have been a
24 viable project. So I -- I do believe by this logic,
25 the -- the Wolfcamp would be highly economic.

1 But again, that's not entirety of Cimarex's
2 argument. They have argued very clearly that the
3 Wolfcamp is -- is a poor reservoir. Its economic -- I
4 think at one point, financial -- financially ruinous
5 was used. But they're also saying that the Wolfcamp
6 has the ability to damage the third bone.

7 And third bone being a better -- a better
8 well or a better target by Exhibit D12 is what you
9 want to protect. So if you're going to damage the
10 better target in favor of a -- you know, slightly
11 inferior, although highly economic target, that --
12 that could be a problem if you were to be forbidden
13 from drilling other minerals there.

14 So we move up back to slide nine. Sorry for
15 the out of order. We'll see -- okay. Fortunately,
16 the parry test did have some other nuance to it.
17 There was existing third bone offset. It's fast and
18 operated well. It's not Cimarex's well. It had been
19 on for a few years prior to the parry 224H being
20 drilled, so I -- I would argue that the parry itself
21 wasn't even a standalone test.

22 There was still a -- you know, a partial
23 child test there. But you know, if -- if the parry
24 224H is going to be absolutely destructive to the
25 paloma 214H, which was the existing third bone, this

1 should be somewhere we can see that. And -- and you
2 know, far from destroying the existing third bone, we
3 do see material performance improvement from that
4 third bone.

5 Third bone rises from -- you know, prior to
6 the offset, 180 barrels a day. It looks like it's
7 probably shut in for a while there. And then, you
8 know, it comes to 245 barrels a day. And -- and you
9 know, the scale on the X axis can be a little
10 misleading. This is sustained uplift for, you know,
11 by my eye, nearly a year. So this is -- this is real
12 uplift.

13 Q Anything further on this slide, Mr. Fechtel?

14 A No, sir. I don't think so.

15 Q Explain to us -- we touched on this a little
16 bit in cross with Mr. Behm. But is there anything
17 further to comment on on this slide regarding fracture
18 modeling?

19 A I -- I don't believe there's a ton to go
20 into here. I -- I -- you know, you covered it
21 thoroughly. But I will just highlight what's going on
22 for the broader audience. On the left are -- are
23 Mr. Behm's assertions of -- of what the -- you know,
24 fractures must look like.

25 I -- I do think he's -- he's kind of

1 modified that in cross. They should look a little bit
2 different. But there is the assertion that these --
3 you know, this learning and this understanding should
4 be derived from the HFTS2. And as -- again -- Ira
5 will be up next.

6 But it's -- lines were 43.7 miles away. And
7 in -- you know, it's different geology, but it is --
8 there are, you know, really great pieces to take out
9 of this. So we have the same micro-seismic piece
10 there kind of showing upward and downward growth
11 that -- don't really -- don't -- you know, it's --
12 it's still a different area, but it just -- I don't
13 see how it translates to Exhibit D1.

14 And then we have, you know, from the same
15 DOE project -- we have another kind of example there
16 where they show upward and downward growth in the --
17 you know, stage by stage. So again, different area.
18 But again, don't see the translation to Exhibit D10,
19 which I think is admittedly a cartoon.

20 Q So are we skipping up to slide 12? Is that
21 correct?

22 A Yes, sir. And so these are -- yeah. These
23 are just in response to some of the -- the slides
24 that -- that Cimarex put out there. I -- I did want
25 to highlight that I think this approach is a little

1 bit misleading. And so this slide is one amongst
2 many. And this is Exhibit D14 on the -- I'm looking
3 at the top left there. Thank you for highlighting
4 that.

5 This slide is -- is one of -- of several
6 that is attempting to kind of demonstrate project
7 recoveries, and project being the development of the
8 third bone in the Wolfcamp. And -- and you know,
9 what's being implied here is that, you know, there are
10 developments that -- with the Wolfcamp in the third
11 bone that -- that don't -- you know, they look bad.
12 But they can split apart.

13 It's -- if the development is done together,
14 why -- why are we splitting them apart? Even if they
15 are done at different times, it is the total project.
16 It is kind of core to the argument being made here.
17 So you know, there's a couple things to highlight.

18 First is, you have the Delos on top that are
19 in yellow. They have not broken out. The -- it
20 doesn't appear that the Wolfcamp is broken out here
21 that has a single Wolfcamp and then five third bones.
22 And it is, you know, at least through 1500 days the --
23 the strongest pad. And then, we have the -- the
24 Wolfcamp developments for black and tan. The black
25 and tan development broken out.

1 Little barriers being identified as -- as
2 all third bone, all Wolfcamp. You know, believe
3 they're third bone, but I believe they're a deeper
4 Wolfcamp target. And then, so on the right then,
5 we -- I've attempted to reproduce this. And
6 unfortunately for everyone viewing this, I did not use
7 the same colors. It's a little bit -- little bit
8 confusing.

9 But -- but you know, the big takeaway
10 here -- the marine wells, the black and tans, they
11 are -- you know, now that the Wolfcamp has been added
12 to -- you know, and the Wolfcamp and the third bone
13 black and tans are the same curve. We do see that
14 this is a kind of higher performing or higher
15 producing project.

16 That doesn't necessarily mean economics are
17 higher or anything else, but it does pretty damningly
18 push back on the assertion that -- that adding wells
19 does not add any barrels. And even with the four
20 sequencing here. It's -- it's a very different plot
21 when -- when viewed as a combination.

22 Q What's your next slideshow? What are you
23 talking about here?

24 A Yes, sir. So this is in the same thread.
25 Again, Exhibit D16 on the left. I -- I do think this

1 is a pretty cool way of viewing things, just to be
2 clear. This is not in the overall approach that I
3 have a problem with. It's just in the way it's being
4 used and -- and the way it can potentially be
5 misleading.

6 So you know, there are a few things here.
7 One. And unfortunately, I just kind of did the same
8 thing to try to replicate stuff, but you know, we're
9 breaking out the Batman. We're breaking out, you
10 know, both sides of them separately. But like,
11 they're only half sections. We're looking at full
12 section there. That -- that may not be -- that may
13 not be, you know, correct. The culmination of daily
14 and monthly.

15 Like, I -- you know, we provided daily data
16 instead of rolling it to monthly to match all the
17 other wells. You know, just the daily data was used.
18 And if you had enough data, that wouldn't be an issue.
19 But there's only a little bit of data, so you're
20 getting a month and a half. And so you're -- you're
21 not seeing the actual decline trends in the same
22 manner that you're seeing the other ones.

23 You're seeing -- they look materially
24 steeper, but that -- again, that's only because you're
25 not seeing the data, you know, over the full month as

1 the months have been transferred into the days in the
2 other -- the other one. And then, I think kind of
3 most egregious is the separation of the Wolfcamps from
4 the -- from the third bones.

5 Again, I have no doubt that coming and
6 developing the Wolfcamp below the third bones is a
7 horrible idea. It demonstrates it clearly the
8 Wolfcamps did not do well. But this is in support of
9 the assertion that that very clearly didn't add any
10 barrels or anything else. If you actually look at it
11 at project level with these all done together, that --
12 that claim doesn't actually work.

13 And so we see on the right there then the
14 black line now. So the tan lines disappeared, and
15 it's being added to the black line. And -- and so we
16 see, you know, that we were producing at a higher rate
17 with higher "cume" for the black and tans. And again,
18 like, we are not proposing the black and tans. Apache
19 did a horrible job of those wells. But this assertion
20 of black and tans say that four Bone Springs wells
21 only is the only way to go is -- is -- just doesn't
22 track.

23 And then on economics, Cimarex's arguments
24 or -- or testimony feature heavy in economics. You
25 know, this is the same plot in the left there that --

1 that we had in the original hearing statement. I
2 believe that was brought up for under -- under
3 Mr. Behm's, you know, testimony. And -- and so this
4 is grouped by the total development then. So we have
5 two third bones with the one Wolfcamp and the -- and
6 the blue.

7 And so those are the co-development tests
8 that we -- we executed in Batman. And then red would
9 be the two standalone third bone wells. You know,
10 this is updated to, you know, partially more recent
11 data or -- but 125,000 barrels delta between the two
12 projects after 67 days. These are early forecasts.
13 But these strongly suggest increased SRV, increased
14 EUR, increased economics at -- you know, along with
15 massively increased early time performance to the tune
16 of 125,000 barrels, 367 days.

17 Q Mr. Fechtler, at the start of your testimony,
18 you talked about stimulated rock volume, SRV. And you
19 explained to us a little bit about how the -- the
20 importance of sequencing in order to maximize your
21 SRV. And where sequencing is not done correctly, as I
22 understood you to say -- in the black and tan, you're
23 not maximizing your SRV in new rock.

24 And then the fractures are preferentially
25 growing into already degraded rock, so you're not

1 stimulating, you know, new undeveloped rock. Is that
2 a fair recap of your testimony initially?

3 A Yes, sir. And -- and what we're looking at
4 here then is I -- I think a -- a strong indication
5 that we are accessing new rock. We are seeing
6 increased performance. We are seeing more
7 contribution for more rock with added targets. And --
8 and I think this should make sense.

9 Q Now, you may have heard this too when
10 Mr. Behm was testifying. He talked a little bit about
11 acceleration. And you can tell me if I'm wrong. But
12 my impression is he's saying that by landing more
13 wells, more density, that while you may be increasing
14 your IP, your initial production, and showing a
15 faster, you know, accelerated production out of a
16 unit, ultimately, you're not really touching any
17 additional rock or getting incremental reserves out of
18 it.

19 And I guess I just wanted to make sure I
20 understand what your view is on whether, you know,
21 you're proposing to simply accelerate production out
22 of your proposed units or whether you're actually
23 going to be developing and touching new rock.

24 A Yeah. I -- so this is another -- another
25 moment that I think it makes sense to step back a tiny

1 bit. So Mr. Behm did have a -- a few kind of back and
2 forths with his counsel regarding in PV10, so -- and
3 kind of the assertion -- you know, the question was,
4 is that a good metric? Absolutely. Yeah.

5 You know, depends -- different counties use
6 different metrics, but in PV, it's net present value.
7 So it takes into account the time value of money.
8 Right. In PV10, uses a 10 percent discount rate. And
9 implicit in any sort of time value money analysis is
10 that a dollar today is worth more than a dollar
11 tomorrow. Is worth more than a dollar after that.

12 And so to touch on acceleration first,
13 acceleration on its own right can have value. Now,
14 that doesn't mean it's -- it's always good at all.
15 Right. You don't overcapitalize just to -- to get
16 barrels. But acceleration can have value.

17 That being said, I do not think that's
18 what's happening here. I think we are absolutely
19 touching more rock, and -- and that is going to
20 translate into increased financials, increased
21 production, and -- and less waste. And -- and the
22 waste I'm talking about here is not over cancellation,
23 but it's leaving reserves behind.

24 Q On this point, Mr. Fecht, were you present
25 for Examiner Garcia's questions to Mr. Behm?

1 A I was.

2 Q Did you hear Mr. Garcia ask Mr. Behm about
3 the Division's concerns about leaving reserves behind
4 in the Wolfcamp?

5 A I did. Yes, sir.

6 Q Can you explain to us a little bit about how
7 what you just said and about your assessment of
8 sequencing here -- true co-development so that you're
9 properly sequencing third Bone Spring drilling and
10 stimulation with the Wolfcamp XY drilling and
11 stimulation -- will, in your opinion, result in a
12 greater recovery of reserves in the Wolfcamp and more
13 effectively and efficiently drain Wolfcamp compared to
14 what Cimarex is proposing.

15 A Yeah. So I -- I share some of your
16 confusion around what -- what exactly Cimarex is
17 proposing. But it -- it does -- it does seem like
18 either the Wolfcamp will never be drilled, in which
19 case by everything we are seeing, we will be
20 leaving -- we will less SRV and less rock being
21 drained than if the Wolfcamp had been developed with
22 it.

23 Or they're planning on coming back later and
24 developing the Wolfcamp, in which case they will have
25 a very hard time in -- in breaking down new rock with

1 depletion above them when admittedly they don't see a
2 frac baffle there. I think fair to say a pretty core
3 part of their argument. And without -- without that
4 frac baffle, they're going to have a -- a challenge, I
5 believe, in -- in properly stimulating the Wolfcamp at
6 a later date.

7 So both of those are -- are wasted, I
8 believe, in -- in kind of in line of -- of
9 Mr. Garcia's questions. But there's also -- there's
10 also other forms of waste tied into this and the
11 various options -- options and proposals that've been
12 thrown around over the last four weeks, including a
13 prohibitive drilling zone and -- and the like.

14 Q Now, I just want to kind of in summary get
15 your kind of -- I want you to try to sort of
16 encapsulate -- I think what a core issue here is in
17 these competing cases is -- you know, obviously,
18 Cimarex has got a proposal to drill into the Bone
19 Springs.

20 And they're going to complete only in the
21 Bone Springs. And Permian, on the other hand, has got
22 a proposal to drill and develop in both pools and
23 formations, including co-development between the basil
24 third Bone Spring sands and the XY sands immediately
25 underneath.

1 I would like -- you know, if you could, just
2 explain to us and examiners how it's important in this
3 context, this geology where we are, the quality of the
4 Wolfcamp that we have and the quality of the third
5 Bone Spring. Why is it critical for these to be
6 co-developed and be coordinated through sequencing and
7 completion? So I want to make sure that's understood.
8 And I'd like for you just to touch on that in summary.

9 A I -- I will start with saying that we share
10 Cimarex's enthusiasm for the third Bone Spring. Third
11 Bone Spring is awesome. And we wholeheartedly
12 disagree that the third Bone Spring is awesome at the
13 exclusion of the Wolfcamp. Wolfcamp is a high-quality
14 target with a lot of resource in place, a lot of
15 thickness. And Ira will get into all of that. We are
16 very excited about the Wolfcamp for all our -- our
17 science to date.

18 But what we have seen -- and the entire
19 reason that we've taken the approach that we've taken
20 to date with a science-based thoughtful and methodical
21 development in Batman offset -- which will continue
22 through our other units and the next few months -- is
23 that we do not think that the Wolfcamp in third Bone
24 Spring has been adequately and properly tested in
25 co-development in this area.

1 And we think that looking at all the offset
2 wells through 2010 is -- is misleading and -- and
3 misguided. And we do think that relying on that is an
4 extremely risky approach to where you're left with --
5 with just two options. Right. You make crate through
6 Bone Spring wells and forever write off the Wolfcamp,
7 the upper Wolfcamp in particular. Or you repeat the
8 black and tans.

9 That -- that you come back in under existing
10 depletion without a frac baffle, and you stimulate the
11 Wolfcamp. But you don't break down the Wolfcamp. You
12 fracture straight into the third Bone Spring existing
13 well bores. You damage your existing well bores, and
14 you break down no new rock in the Wolfcamp.

15 This is a Wolfcamp that is a tier 1 target.
16 It's extremely productive. It's been targeted all
17 over the place. But to adequately do it with a third
18 Bone Spring, they have to be done together. In doing
19 so, SRV and total source is actually touched --
20 appears everything that we're seeing to increase.

21 Q And on that basis -- I just want to
22 understand. You had urged the Division to approve
23 your application because they're going to be done in a
24 coordinated fashion?

25 A Absolutely. And obviously, a big portion of

1 this is the -- is the different ownership between them
2 and the myriad of concerns that that creates. I --
3 layman, not a lawyer. But I see a pretty clean remedy
4 for that. Let's develop them together and -- and all
5 make a lot of money here.

6 Q Any other comments you want to make,
7 Mr. Fechtler, in response to any of Cimarex's
8 engineering statements or testimony?

9 A No, sir. I think there was a couple more
10 slides. We can go through if you'd like or -- no.
11 I'll look at it. Yeah. This is -- this is just --
12 this was just a few days ago. Came from Cotera's
13 earnings presentation. And -- and you know, of note
14 here, they do highlight a prolific Wolfcamp play in
15 the earnings call -- and that does, you know, appear
16 to align with the way we think about the world, which
17 is -- which is awesome.

18 There is a disconnect between whoever's
19 making these slides and whoever's planning
20 development. And you know, so we -- looking at the
21 next slide -- before we turn to it, though, I think
22 it's got some air time already. Just the callout that
23 Lea County includes. \$1400 per foot or -- or close to
24 thirteen and a half million dollar per well cost.

25 I think the -- the voice over to that is

1 apart from Cimarex. That's because they have a 1-mile
2 wells. You know, this is -- the slide does say that
3 this is a 9700 foot average lateral length, but
4 we'll -- we'll trust Cimarex that all those wells are
5 not in Lea County.

6 Next slide, please. Yeah. And this is just
7 to make sure we're not just taking my word at face
8 value. This is the prolific Wolfcamp outline from
9 Cimarex's earnings presentation and then the exhibit
10 map from their testimony kind of merged together. And
11 again, this is the same area that the Wolfcamp would
12 be financially running it -- was to develop.

13 Q That was everything. Is that correct,
14 Mr. Fechtcl?

15 A I think so.

16 MR. RANKIN: At this time, Madame
17 Hearing Officer, I would move the admission of
18 Exhibit K to the record.

19 THE HEARING EXAMINER: All right. I'll
20 pause for a moment to ask for objections to the
21 admission of Exhibit K.

22 MR. ZIMSKY: Hearing Examiner, we don't
23 have an objection to Exhibit K. But I do have a point
24 of order regarding whether our witnesses will be able
25 to testify regarding these rebuttal exhibits.

1 THE HEARING EXAMINER: That was my
2 understanding from our discussion yesterday or the day
3 before. Yes.

4 Mr. Rankin, you remember that as well?

5 MR. RANKIN: I remember that
6 discussion, and I, you know, maintain my objection to
7 it. And I want to make sure that we complete our case
8 before any sort of rebuttal is provided. I will say
9 that -- we address this separately. But much of what
10 was in Exhibit K was covered by Mr. Zimsky's
11 examination of Mr. Behm. So I guess, you know, I
12 reserve the opportunity to continue to have a
13 discussion about it at the end of our case.

14 THE HEARING EXAMINER: Right. All
15 right.

16 So, Mr. Zimsky, as far as I'm
17 concerned, you will have a turn when Mr. Rankin is
18 done with his case to raise what you'd like to raise.
19 And if Mr. Rankin has an objection at that point, I'll
20 address it. But I don't think any door is closed
21 here. And I know it was a little confusing to put out
22 some of the rebuttal but not all of the rebuttal
23 depending on what exhibit it related to. But let's
24 keep going.

25 So Exhibit K is admitted. Was that

1 all, Mr. Rankin?

2 (Exhibit K was marked for
3 identification and received into
4 evidence.)

5 MR. RANKIN: No further questions of
6 Mr. Fechtel. And I will tender the witness for
7 examination by counsel and the division.

8 THE HEARING EXAMINER: Thank you very
9 much, Mr. Rankin.

10 Mr. Zimsky, do you have questions of
11 Mr. Fechtel based on his testimony?

12 MR. ZIMSKY: Yes. I have some
13 questions.

14 THE HEARING EXAMINER: Please go ahead.

15 CROSS-EXAMINATION

16 BY MR. ZIMSKY:

17 Q Mr. Fechtel, good afternoon. William
18 Zimsky. I'm the attorney for Cimarex. I have some
19 questions for you. You agree that there is
20 disagreement over whether some of the wells are
21 Wolfcamp or third spring; correct?

22 A Yes, sir. It appears that way.

23 Q And you based yours on OCD records?

24 A Well, we did that in order to circumvent
25 some disagreement in that these -- these are

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1 hopefully -- these are the pooling codes. These are
2 what the OCD is using. We do also -- go ahead.

3 Q No. Go ahead.

4 A No. That's -- OCD is -- especially in the
5 original slide -- is the OCD pooling codes.

6 Q And relying on type logs and grids. Would
7 that be a better way to actually determine the landing
8 zone for particular wells as opposed to what is
9 reported by the operator?

10 A They -- they both have their -- their place.

11 Q And so you agree that if Cimarex is looking
12 at type logs and grids, that's a valid way to
13 determine the landing zone?

14 A That's absolutely a valid way to determine
15 what they believe landing zone is to be.

16 Q Thank you. Assuming that all the wells that
17 you say are Wolfcamp that Cimarex said are third
18 spring -- those are still flat developments for the
19 most part, other than tan and black. In other words,
20 they're not stacked with a Bone Spring and a Wolfcamp?
21 Do you understand the question?

22 A I think so. You're saying that irregardless
23 if the OCD call them one thing, that Cimarex calls
24 them the other. It's a moot point, because they're
25 all wells that are close to each other.

1 Q Correct. And there's no stacking between --
2 a co-development situation other than like in -- and a
3 couple others?

4 A Yeah. I disagree with the kind of broad
5 assertion. I think there are a number of wells that
6 are -- that are -- you know, in units that have both.
7 And I think there are a number of wells that are
8 omitted altogether that are also with the -- but by
9 and large, I -- I agree that a lot of development in
10 the area has not included both the third bone and the
11 Wolfcamp.

12 Q Okay. And going to slide K6.

13 A I've got to log back in real quick. Sorry.

14 Q K6.

15 A Slide 6, Exhibit K.

16 Q Yes. And let me get it up there. Okay. Do
17 you see it?

18 A Yes, sir.

19 Q Okay. So on the left, you said something
20 about synthetic -- I forget exactly how you termed it.

21 A Yes, sir. It's a synthesized right side.
22 But that -- my -- my point -- like, this is actual
23 well data, but it's -- it's not the black and tans.
24 And this is -- this is a mixed audience. Wanted to
25 step back a bit about forecasting.

1 Q And so it's synthetic. Does that have
2 anything to do with the black and tan?

3 A Has to do with the -- the fundamentals of
4 forecasting and how -- how we forecast.

5 Q Okay. And tying that back into the Batman
6 where you only have 60 days now of data. I mean, if
7 you rely on these fundamentals of empirical
8 forecasting, wouldn't it be prudent to not make any
9 types of conclusions on the long-term production from
10 the Batman well unit until you got onto the decline
11 curve?

12 A There are many forms of -- of analysis. And
13 this is -- this is early time data, but it's extremely
14 encouraging.

15 Q It's encouraging. But you would have a
16 higher level of confidence with a longer interval
17 production; correct?

18 A Of course. I'm sorry. It's maybe a mic
19 issue. Yes, sir.

20 Q And the Batman well -- you heard Mr. Behm's
21 testimony about the fact that this hasn't been fully
22 developed. There's only, I guess, five wells in that
23 section, so it might be producing more than what it
24 might otherwise do in a fully development scenario?
25 Do you agree with his testimony?

1 A I think the question was -- did I hear it?
2 I -- I did hear his testimony. And then, his -- his
3 point was -- well -- but you didn't fully develop.
4 And I agree. We did not. We -- we were taking a
5 thoughtful and methodical approach. This was the
6 first test in which we included one Wolfcamp well
7 moving next door. And adding Wolfcamp wells because
8 of this test. We are extremely excited.

9 Q Okay. So you're excited. Now, if the OCD
10 grants your application, are you going to be drilling
11 these -- you said you're going to co-develop. So
12 let's just focus on the third sand and the Wolfcamp.
13 Are you going to co-develop both the Joker and Bane at
14 the same time?

15 A We -- we intend to co-develop the Wolfcamp
16 and the third Bone Spring.

17 Q And both the Joker and Bane, so in other
18 words --

19 A Go ahead.

20 Q Okay. I apologize. I don't mean to
21 interrupt you. But are you going to drill the eight
22 third sand wells and the eight Wolfcamp wells all at
23 the same time?

24 A That will be dependent upon when we get our
25 orders back and we get our permits back and if we have

1 the rig ability and are further enough along in the
2 delineation test to go do both all at once. At
3 minimum, one section will be co-developed between the
4 third bone and Wolfcamp A.

5 Q But that's dependent upon the data you're
6 getting from Batman?

7 A Batman and the continuation of that test
8 through Robin.

9 Q So it's possible that you may decide, based
10 upon that data, to change your plan and maybe just
11 drill four Bone Springs or maybe just drill four
12 Wolfcamp wells?

13 A I would -- I would find either of those two
14 scenarios extremely unlikely. But absolutely. It's
15 possible that we continue to learn and it's not four
16 and four.

17 Q And if you try to do eight and eight, are
18 you going to have any takeaway problems or
19 infrastructure problems as far as completing sixteen
20 wells at once?

21 A So sixteen wells at once is not new to
22 Permian Resources, but I have also not fully sat down
23 with our -- our marketing team, partially because we
24 don't have -- we don't have any orders or idea when
25 our permits will be. It's -- it's hard to plan

1 details like that.

2 Q And so it's also hard to plan the details of
3 just doing the Joker four and four without knowing the
4 takeaway and the midstream; is that correct?

5 A No, sir. We've -- we've had new takeaway
6 midstream issues beyond the very early time flowback
7 when our midstream partner did not get there in time.
8 That's water only for a few days. I'm sorry. You
9 said Joker. I thought you said Batman.

10 Q No. I was talking about Joker Bane. Thanks
11 for that point. Maybe I misspoke. But based upon
12 issues about takeaway infrastructure, other production
13 issues, infrastructure issues, are you certain at this
14 time that you can do the four and four in Joker?

15 A So I -- I am not the person that can have
16 the certainty here as a -- as a reservoir engineer.
17 We will not be -- we will not be drilling beyond our
18 ability to take away production. We have a great
19 team, and I have all the confidence in the world that
20 we will have takeaway fully for any number of wells.

21 Q But sitting here today, you can't testify to
22 that; correct?

23 A I can't testify as to when we will be able
24 to go drill, owing to the contested hearing here.

25 Q Okay. We get a decision next week. Being a

1 little facetious. But you get a decision pretty soon,
2 and Cimarex decides not to appeal. Would you be ready
3 at that point to co-develop the eight wells in Joker?

4 A If this wasn't a hypothetical, then we
5 would -- we would circle up with all the appropriate
6 teams and -- and the machine would kick in, and we
7 would make sure we had everything in place. But I
8 can't speak to random hypotheticals.

9 Q And you said that Permian Resources has
10 drilled, completed 16 wells at one time?

11 A Yes, sir. So we -- we bring them on with
12 slight staggers in timing. But large developments
13 like that are -- are not entirely unique.

14 Q Can you give us an example?

15 A That we are -- we are fracking a 15-well pad
16 right now.

17 Q And where is that?

18 A That would be in -- in our Lockridge area.
19 It's in Ward County.

20 Q In which county?

21 A Ward County.

22 Q And what's the project called?

23 A It's the Aberdeen and Waikiki.

24 Q Any other completions with that many -- any
25 other development that you're completing that many

1 wells at the same time?

2 A We -- yes, sir. We've had -- we've had
3 other developments. I can't give you the exact
4 number, but between thirteen and eighteen.

5 Q Thirteen and eighteen wells at one time?

6 A Yes, sir.

7 Q Go ahead.

8 A Yeah. Again, these are hypotheticals around
9 a cadence in -- in Batman Robin in the future, unknown
10 date. How many wells ultimately come on at the same
11 time is -- is again part of this hypothetical.

12 Q Look at K12. Can you see that on your
13 screen?

14 A Yes, sir.

15 Q And do you see where my cursor is circling?

16 A Yeah.

17 Q Is that the Lea North wells?

18 A Yes, sir.

19 Q And you have three wells there; right?

20 A Yes, sir. We got the eastern most one,
21 which we realized today.

22 Q And that would be the --

23 A I -- I couldn't tell you. Reproducing
24 Mr. Behm's plot here. Attempting to.

25 Q That would be the Lea North 3 fed com 001H

1 well?

2 A I believe so. I -- it's one of the Lea 3
3 fed coms.

4 Q And that well adds 1,000,000 barrels on the
5 2-mile basis, approximately 1,000,000 barrels in a
6 2-mile basis. So you know, I understand this is
7 probably accidental. It wasn't intentional to leave
8 that out. Not saying it is. I'm just saying that
9 that would increase -- now, I'm not really good with
10 colors here. Is this those three Lea Norths?

11 A Yes, sir.

12 Q So if you added 1,000,000 barrels -- you
13 added that one well, that would kick this up pretty
14 significantly.

15 A It would bring up some. But again, the
16 point of this plot is that the black and tans change
17 substantially. The adding the Lea federal will not
18 increase the black and tans --

19 Q And so I'm going with the slide 11. And the
20 D12. The parry.

21 A Yes, sir.

22 Q Now, this is an edge well with no offset
23 boundaries as described by Mr. Behm. Do you agree
24 with that?

25 A No offset boundaries in the Wolfcamp. Yes,

1 sir. I agree.

2 Q And so using the EUR for this well, isn't
3 that kind of an inflated number, since it is an edge
4 well and there's no competition?

5 A If I'm not mistaken, I believe the assertion
6 Cimarex is making is that the development of the
7 Wolfcamp is uneconomic.

8 Q Yes, but the --

9 A This appears to be a very economic Wolfcamp
10 well.

11 Q Yes. Because it's an edge well with no
12 competition; agreed?

13 A That is certainly helping. I'm sure. But
14 you would have to be a lot worse than this well to be
15 uneconomic by Mr. Behm's math.

16 Q But this was in a full development with four
17 sand Bone Springs and four Wolfcamp wells. The EUR
18 would be -- the economics of it would be somewhat less
19 profitable. Would you agree?

20 A It's difficult to say less powerful, but
21 certainly the -- the possibility that it -- it's worse
22 because of competition exists.

23 Q And did you hear Mr. Behm's testimony about
24 the issues with the Batman well at eight days?

25 A I did.

1 Q And do you have any comment upon that?

2 A We were subpoenaed and supplied all of our
3 data, including all of the choke data. I -- I believe
4 that the -- pointing to that and adding a question
5 mark is -- is a false flag. You know, we -- within
6 that subpoena are plenty of email correspondence
7 questioning the rates ourselves and multiple responses
8 regarding people going out and -- and checking meters.
9 And from all the information we have, these meters are
10 correct. But early data always looks funky. I agree.

11 Q And looking at slide 9, the paloma 214H.

12 A Yes, sir.

13 Q Isn't the decline there materially different
14 from the parry wells?

15 A Yes, sir. Are you saying does the decline
16 of -- which well?

17 Q The paloma.

18 A So the -- the orange third bone. Is it
19 different than the parry wells being the blue one and
20 the red one?

21 Q Correct.

22 A It is -- it is -- I really can't infer if
23 that decline is different than the blue parry third
24 bone.

25 Q And the slide 14. The Batman. There's five

1 wells there; correct?

2 A Yes.

3 Q In that one section.

4 A Yes, sir.

5 Q Why haven't you drilled the eight wells?

6 A You're asking why we haven't drilled eight
7 wells?

8 Q Yeah.

9 A Based on the very encouraging data from the
10 Batman.

11 Q Yes.

12 A Batman was our original appraisal, which is
13 giving us the data to increase density.

14 Q And so that data may end up showing that a
15 four or five well per section is better than what
16 you're actually planning for the Joker and for the
17 Bane; correct?

18 A Yes, sir.

19 Q Now, going to slide 13.

20 A That's 15.

21 Q Oh. Fifteen. Yeah. It's, I guess, slide
22 13 from the earnings presentation. And you would
23 agree this is like a high-level outline?

24 A Absolutely.

25 Q And there's a difference between the

1 Wolfcamp within -- where they say it's prolific.
2 There's different producing stratigraphic levels in
3 the Wolfcamp such as the sand, which is where, I
4 guess, you're landing your Joker and Bane wells;
5 correct?

6 A Joker and Bane wells are currently planned
7 with the XY.

8 Q Yes. And so then there's the shale directly
9 below that; correct?

10 A Yes, sir.

11 Q So because you heard the testimony that
12 Cimarex believes that the Bone Spring -- their third
13 sand wells will be draining efficiently the Wolfcamp,
14 the XY sand. So I think your testimony was about why
15 aren't they drilling in the Wolfcamp or the subject
16 lands. And they are drilling -- going to be producing
17 from the Wolfcamp wells; correct?

18 A That -- that is what they are claiming.
19 Yes, sir.

20 Q Now, do you think your Bone Spring third
21 sand wells are going to be drying from the Wolfcamp,
22 the XY sand?

23 A I think there will likely be mixing between
24 the XY and the third bone sand.

25 Q And that same goes with your Wolfcamp wells.

1 It will get the XY and also the third sand; correct?

2 A The -- both wells developed in the third
3 bone sand and wells developed in the XY will share --
4 have some resource from either formation.

5 Q Is that affecting the correlative rights of
6 people that own different percentages in the third
7 sand vis-a-vis the XY Wolfcamp?

8 A Believe so.

9 Q Now, going back to slide 9. The decline in
10 the paloma. That occurred -- that was pretty parity
11 for its completion; is that correct?

12 A I'm unsure as what you're asking.

13 Q The decline in the paloma. Do you see this
14 180 -- there was this decline here; right? The orange
15 is the paloma?

16 A There is a sporadic piece of data right
17 there. One of many I see in that same well.

18 Q And then after the 4H was completed -- and
19 here's the 4H. There was a decline in the paloma.
20 It's materially different than what it was before,
21 'cause it's all the way down here. And it went back
22 up to here; is that correct?

23 A I'm having a little bit of trouble
24 following.

25 Q For two years, it's kind of flat. There's

1 some decline. And then after this, the decline is
2 much steeper. Would you agree with that? In the
3 paloma.

4 A It's -- it's difficult to -- to see that in
5 this plot. But when you produce more oil, you're
6 generally going to decline more.

7 MR. ZIMSKY: I believe that's all the
8 questions I have. Thank you, Mr. Fechtel. Appreciate
9 it.

10 THE HEARING EXAMINER: Thank you,
11 Mr. Zimsky. Sorry. Can you hear me? Thank you. Are
12 there any other parties who have questions of this
13 witness? No. All right.

14 Mr. Rankin, do you have any follow-up?

15 MR. RANKIN: I do. I just want to
16 re-share my screen here real fast, 'cause we just
17 ended on this topic, and I just want to make sure I
18 understand and the nature of the record is clear.

19 REDIRECT EXAMINATION

20 BY MR. RANKIN:

21 Q Mr. Fechtel, do you see my screen up here?
22 We're showing again your Exhibit K, slide 9.

23 A Yes, sir.

24 Q Do you recall Mr. Behm -- I think there was
25 some discussion about -- there definitely was.

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1 Cimarex's position is that the third Bone Spring basil
2 sand and the XY sand are all one tank. That's
3 Cimarex's position; right?

4 A I believe so. One of -- one of many
5 positions.

6 Q And so the paloma 214H, as you said -- it
7 was a preexisting well; right? So tell me. Was the
8 fact that the parry was drilled subsequently -- does
9 that make it a -- how does that affect the sequencing?
10 You know, sounds like that would be a delayed
11 development, not a -- explain how that might impact
12 the paloma in terms of the sequencing.

13 A At minimum, the -- the parry 224H is not
14 a -- a standalone. You know, it's also not fully
15 delayed, since it's only partially bound. But
16 certainly, it is after the Paloma 214H and -- and
17 could interact with the -- the 214H.

18 Q Explain what you mean by partially bound.
19 How does that affect the assessment of the production
20 here among these wells?

21 A The -- partially bound versus fully bound is
22 just that there's only, you know, one paloma 214H.
23 Then another on the other side would've been a little,
24 you know, more fully bound. But yes. The -- the
25 paloma was drilled before the 214H and -- and the

1 parry was -- was developed subsequent to that, and
2 that's the uplift in the production.

3 Q Explain how true co-development might've
4 made a difference in terms of SRVs in the --

5 A Right. So it's tough to -- it's tough to --
6 I can't, you know, speak to the completion, you know,
7 of the paloma 24H and everything that went on there.
8 But you know, developing the parry afterwards does,
9 you know, pose risk to the 214H. Fortunately, it
10 worked out for this.

11 And you know, it's our -- it's our position
12 that developing them together would've -- would've
13 been a far better proposition. Would've, you know,
14 undoubtedly -- you know, some of the energy in the
15 parry 224H went to the paloma's network for its
16 depletion area. In this case, it got better.

17 It may've been that there was an inefficient
18 simulation on the paloma. And so growing towards that
19 fracture network actually helped the paloma. But I
20 think if these had been done together with a modern
21 design, they both would've benefitted.

22 MR. RANKIN: No further questions.

23 THE WITNESS: Thank you, sir.

24 MR. RANKIN: Are you there, Felicia?

25 THE HEARING EXAMINER: I'm right here.

1 Can you hear me?

2 MR. RANKIN: We can now.

3 THE HEARING EXAMINER: Okay. Sorry. I
4 keep hitting mute, and it doesn't unmute. And it goes
5 to speaker, and it does weird stuff. I'm sorry.

6 So if Mr. Rankin is done, Mr. Garcia,
7 do you have questions of Mr. Fechtel?

8 MR. GARCIA: I do have a few.

9 THE HEARING EXAMINER: All right.
10 Thank you.

11 CROSS-EXAMINATION

12 BY MR. GARCIA:

13 Q Good afternoon, Mr. Fechtel. Is that how
14 you say it?

15 A It is. John Fechtel.

16 Q Bear with me, because I will probably say it
17 wrong a few times.

18 A You will not be the first today.

19 Q Quick question. How did you determine the
20 spacing vertically and horizontally for design of the
21 Wolfcamp and Bone Springs, lower Bone Springs wells in
22 particular?

23 A So as far as horizontally -- right. I mean,
24 four wells per section is -- is common in, you know,
25 individual targets here. It also -- it -- you know,

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1 by nature of the OCD rules -- right. Four wells per
2 section is somewhat encouraged without having to get
3 through a bunch more.

4 And then as far as interval targeting, we do
5 think that near well bore rock matters. And so we
6 have -- we have landed both of these wells in -- in
7 what we view to be the optimal landing zone.

8 Q All right. And earlier I had asked Cimarex,
9 you know, concerns about preventing waste, which OCD
10 can be defined as reservoirs left in place or
11 unnecessary cost. And do you think there's any
12 unnecessary cost with the four wells at Bone Springs
13 and four wells in Wolfcamp?

14 A So I think that -- that our approach is
15 designed to minimize that. Had we gone out and done
16 four and four immediately without any kind of
17 scientific process, then that would've been a far
18 greater risk. We have started with four wells in the
19 third bone and one bone in the XY. We are collecting
20 a ton of data and are spending a lot of money to
21 continue this.

22 We will spend several hundred million
23 dollars in units just over the lease line by the time
24 we get to the Joker and Bane to -- to make sure
25 that -- that we ground truthed all of our assumptions.

1 And -- and so I think in terms of capital
2 waste, we are equally -- equally eager not to waste
3 capital and to do things prudently. "Incentivize" I
4 guess is probably the -- the appropriate word. So --
5 so no, sir. I -- I don't think that our approach
6 is -- is kind of wasteful in terms of capital.

7 And I think that the language that --
8 Mr. Macha will testify about we are requesting a
9 change in pooling order to make sure that -- that our
10 thoughtful, methodical approach to permitting and
11 development is not overly burdensome to working at
12 your centers. Also ensures that.

13 Q Did you guys evaluate any other designs
14 like -- I know it's not too common. I guess I'm just
15 curious because of the relatively thin -- such as like
16 a 2-by-2 wine rack pattern. Two in Bone Spring, Two
17 in Wolfcamp. Just due to the near verticalness of
18 these two far walls.

19 A Yes. So you know, if -- that certainly
20 could be a possibility. Right now, we -- we kind
21 of -- we like where this is, and we were encouraged
22 about kind of -- like, you know, the belief or the
23 assertion that the four well section is -- is optimal.

24 I -- I don't think it's fully founded in the
25 offsets. We do see other pads. Even some rigs, how

1 it's Delo wells, which are -- despite inefficient
2 development, original two well pad and four wells
3 later -- they're very strong wells at -- at six wells
4 per section.

5 So I think if -- if four wells per section
6 were optimal, two wells in the third bone and two in
7 the Wolfcamp makes a lot more sense, especially with
8 regard to correlative rights. But we -- we have not
9 arrived at the position that we think that four wells
10 is optimal.

11 Q Okay. Do you have any concerns with the
12 current design of taking "frackets" integrity casing
13 undoing previous frac?

14 A We think that the co-development is the --
15 by far the best method we have of -- of protecting
16 integrity of our well bores.

17 Q Assuming you guys will drill the bone
18 springs at Wolfcamp together, do you plan on zipper
19 fracketing the Wolfcamp and Bone Springs together, or
20 will they be fracked by formation or?

21 A So they'll be -- they'll be zippered in the
22 sense that all of them will be completing at the same
23 time. But -- but we do sequence within completions
24 from time to time. And usually, that was not
25 discretely done within this pad.

1 going out of order to make sure we get our witnesses
2 in line here. We're calling Mr. Ira Bradford.

3 THE HEARING EXAMINER: All right.
4 Thank you.

5 Mr. Bradford, would you please raise
6 your right hand.

7 WHEREUPON,

8 IRA BRADFORD,
9 called as a witness and having been first duly sworn
10 to tell the truth, the whole truth, and nothing but
11 the truth, was examined and testified as follows:

12 THE HEARING EXAMINER: Thank you. Your
13 voice is nice and strong there.

14 And go ahead, Mr. Rankin.

15 MR. RANKIN: Thank you.

16 DIRECT EXAMINATION

17 BY MR. RANKIN:

18 Q Mr. Bradford, will you please state your
19 full name for the record. And for the benefit of the
20 court reporter, spell your last name.

21 A My full name is Ira Andrew Bradford. And my
22 last name is B-R-A-D-F-O-R-D.

23 Q By whom are you employed and in what
24 capacity?

25 A I'm employed by Permian Resources as a

1 senior staff geologist.

2 Q Have you previously testified before the
3 Division and had your credentials as an expert in
4 petroleum geology accepted as a matter of record?

5 A I have.

6 Q At this time, have you conducted a study of
7 the geology of the lands in the subject area at issue
8 in these competing cases?

9 A I have.

10 MR. RANKIN: At this time, Madame
11 Examiner, I would move Mr. Bradford and re-tender him
12 as an expert in petroleum geology.

13 THE HEARING EXAMINER: All right. Let
14 me pause for a moment to ask if there are any
15 objections. Sorry?

16 MR. SAVAGE: No objections.

17 THE HEARING EXAMINER: Thank you.

18 MR. RANKIN: Thank you.

19 BY MR. RANKIN:

20 Q Mr. Bradford, did you prepare a
21 self-affirmed statement of your testimony in these
22 contested matters?

23 A I did.

24 Q And is that marked as Exhibit E that was
25 filed back on July 14th with the Division?

1 A Yes, sir.

2 Q And did you also prepare some slides or
3 exhibits that go along with your testimony?

4 A Yes.

5 Q And were those marked as Exhibit E1 through
6 E29?

7 A Yes, sir.

8 Q Did you have any additions or changes,
9 modifications to either your testimony or any of your
10 exhibits that you presented previously? I missed that
11 one.

12 A Oh. I said -- I said no.

13 MR. RANKIN: Okay. Madame Examiner, at
14 this time, I would then move the admission of Exhibit
15 E with the attachments E1 through E29.

16 THE HEARING EXAMINER: Thank you. Let
17 me pause a moment to ask for objections.

18 MR. SAVAGE: No objection.

19 THE HEARING EXAMINER: Thank you. The
20 exhibits are admitted.

21 (Exhibit E was marked for
22 identification and received into
23 evidence.)

24 //

25 BY MR. RANKIN:

1 Q Mr. Bradford, in addition to your direct
2 testimony and the exhibits you prepared in association
3 with your direct testimony, have you now also had a
4 chance to review Cimarex's updated geology and
5 testimony in the exhibits and testimony that they
6 provided last week?

7 A I have.

8 Q And did you prepare yourself some additional
9 slides and some testimony and rebuttal to certain
10 aspects of that testimony?

11 A Yes, I did.

12 Q Were those marked as rebuttal Exhibit J?

13 A Yes.

14 Q At this time, I will ask you -- I'm going to
15 pull them up so everyone can see. And I'm going to do
16 it in such a way as we can hopefully enjoy a bigger
17 view. Mr. Bradford, if you would, I've got here on
18 the screen -- hopefully, you can see it. Exhibit J.

19 And we have filed these with the Division
20 and circulated to all parties. If you would just
21 explain what this exhibit shows and explain what it's
22 responding to in Cimarex's counter-development plan
23 testimony.

24 A Thank you, Adam. So this slide I put
25 together to help kind of further dive into the geology

1 in this area to show some of the nuances and kind of
2 where I think the oil charges -- and maybe help shed
3 some light on why Permian Resources is leaning into
4 doing this third Bone Spring Wolfcamp XY stagger
5 co-development plan.

6 The rebuttal exhibit -- you know, Coteria has
7 been insinuating or in their exhibits saying that the
8 third Bone Spring is a primary hydrocarbon tank
9 providing hydrocarbons to the well bores drilled in
10 this area.

11 And they made repeated statements that --
12 especially in the pre-hearing statements that the
13 Wolfcamp XY is a poor quality reservoir with minimum
14 reserves. I -- I tend to disagree with that
15 interpretation. Let me kind of walk everyone here
16 through why using this slide right here.

17 I want to take a minute to start just to
18 talk for one minute about phi height maps. I think
19 phi height maps are great. I use them myself
20 extensively when I'm prospecting a mapping. But there
21 are some nuances with those maps that you have to
22 understand to properly interpret what they're trying
23 to tell you.

24 They really only show storage capacity in
25 geologic units. And I think as we have heard in

1 various other testimonies, they do not typically
2 account for what is in the pours. Whether to fill
3 with oil or filled with water. And we need to do more
4 in-depth analysis to understand kind of where -- where
5 water and oil are concentrated in these different
6 formations.

7 I also think -- you know, like porosity
8 height map is -- you know, the second part of it is
9 height. I do think it's slightly misleading when you
10 are showing maps where one map has a height that is
11 way greater than the other map. I think it's -- it's
12 not -- it tends to make one look really good and the
13 other not look really good, and that's -- and that's
14 more based off of that H part. Not really if there's
15 good oil or good -- or good reservoir in -- in the
16 other reservoir unit.

17 It is my personal interpretation from the
18 data that we have collected and I have interpreted
19 that the three Bone Spring basin in Wolfcamp XY are
20 the primary hydrocarbon tanks in this system. And
21 this is based off the production results we saw in the
22 Batman and the log and core data we collected in these
23 zones from the Batman pilot hole, which we're going to
24 share with the commission here today.

25 So if you direct your attention to the

1 right-hand side -- or the left-hand side. I'm sorry.
2 The left-hand side of the slide here. We have the
3 Batman fed 132H pilot hole. This is a triple combo
4 pilot hole that we collected from the -- from the
5 Batman fed 132H. And it's focused in on kind of the
6 area of interest here. The third Bone Spring. The --
7 and the upper part of the Wolfcamp.

8 And I have -- and just 'cause -- it looks
9 like I forgot to label the tracks. The first leftmost
10 track is gamma ray, followed by depth, followed by
11 resistivity, followed by porosity. I would also like
12 to point out the rotary side well core plugs that we
13 took are marked as the little red boxes on the left
14 edge of the resistivity track. I annotated some of
15 the different formations and units I'm going to talk
16 about today on the slide in here.

17 So I -- I kind of broke in the third bone
18 spring into two different units. The third Bone
19 Spring upper, which is the upper 210 feet of the third
20 Bone Spring. And then the third Bone Spring basal
21 low, which is kind of the bottom 70 feet of the -- of
22 the third Bone Spring right above the Wolfcamp top.

23 And this is -- and this is like, usually
24 picked off of that higher gamma ray marker. Slightly
25 lower porosity marker you see. That -- that is fairly

1 reasonably correlatable throughout kind of northern
2 Lea County. The -- and this is also the -- like,
3 primary third Bone Spring target that is targeted when
4 the third Bone Spring is prospective.

5 I have also flagged it with a red star so
6 that it's easy to see as we move from spot to spot
7 which one correlates back to this interval. Below
8 that, I have the Wolfcamp XY highlighted in purple
9 with the X sand and Y sand loads there. And then, I
10 have a top there segregated in the Wolfcamp XY out
11 from the Wolfcamp A shale below it.

12 I do want to point out that in these areas,
13 the third Bone Spring basil and the Wolfcamp XY are
14 very similar in thickness within about 10 feet of each
15 other. And then just to hit on the Wolfcamp A shale,
16 based on the core data we've taken, in -- in my
17 experience working the Wolfcamp in Lea County, this is
18 a high-quality organic resource rock that is most
19 likely the primary hydrocarbon source for the XY and
20 third bone spring in this area.

21 So if we move to the center exhibit here
22 that's in kind of the green box, it says rotary side
23 wall, core porosity, and water saturation. On the
24 left-hand side, I have a -- a graph that has porosity
25 on the left and saturations on the right for the core

1 points that we took. On the saturations, just note
2 that the red dots are oil and the blue dots are water
3 saturations values that were measured directly from
4 the core samples.

5 And on the left-hand side -- or on the
6 right-hand side, I have a table with just some average
7 or -- value ranges just to make this easier to
8 understand. So if you look at the -- start talking
9 about the porosity in these zones. If you look at the
10 porosity in all of these zones, it's all very similar
11 porosity range.

12 The third Bone Spring basil is slightly
13 higher porosity. Maybe -- maybe one to -- maybe one
14 porosity unit greater than the upper third or Wolfcamp
15 XY. And that's -- that's kind of a given. But with
16 the Wolfcamp ranging from 6.5 to 8.2 percent porosity,
17 it's still, in my opinion, a high-quality reservoir
18 unit on par with the third Bone Spring basil.

19 As we look at the saturations, I think this
20 is where the data is really most interesting. So like
21 I said, if you look at the blue dots, those are --
22 they measure water saturations. And the red dots are
23 the measured oil saturations. So you can see, like,
24 the average SW value in the third Bone Spring basil
25 and Wolfcamp XY is very similar coming in.

1 The average was like, 42 to 44 percent water
2 saturation. And immediately as we get above that
3 marker bed in -- that separates out the basil from the
4 upper, we see divergence in the saturations where the
5 oil saturations drop down. So the oil saturations in
6 the other two units are averaging 20 to 30 percent.

7 And then as they -- as we go up in the third
8 bone, oil saturation is dropped down to 10 percent and
9 below, and the water saturations jump up to 60-ish
10 percent plus. What this is telling me is that -- is
11 the primary hydrocarbon tanks in this area is the
12 Wolfcamp XY in the third Bone Spring basil. That is
13 where the lion's share of the oil is stored in this
14 hydrocarbon system.

15 There is some oil stored in the upper third
16 Bone Spring, but it's going to be a more minor
17 contributor to the overall production of the wells
18 than from the third Bone Spring basil in the Wolfcamp
19 XY. In my interpretation -- this is -- this is driven
20 mainly by proximity to source rock. I think most of
21 the oil is coming from the Wolfcamp shale.

22 It is a mature hydrocarbon generative rock,
23 and it pushes oil up into the Wolfcamp XY and third
24 bone basil, which cause them to have a higher oil
25 saturation and better oil charge than the upper third

1 Bone Spring.

2 Mr. Behm testified that there probably is
3 some migration laterally from deeper in the basin. I
4 don't disagree with that. But I think when you have
5 high-quality, organic, rich source rock sitting right
6 below the reservoir intervals, that is probably where
7 most of the oil is being sourced from in these units.

8 All right. So going to the final part of
9 this slide, which are the maps on the right-hand side.
10 Going back into phi height here. So I have a third
11 Bone Spring basil and a Wolfcamp XY phi height. And I
12 think going into phi height here is good, because
13 I'm -- I'm normalizing out the H pours.

14 And these are about the same thickness, so
15 we're really just looking at the overall relative
16 reservoir quality of these two different intervals
17 across the subject area of the hearing. You can see
18 the third Bone Spring basil is -- has very widespread,
19 high-quality rock across this whole area.

20 I -- really think that's probably one of the
21 main drivers between the historic targeting of the
22 third Bone Spring to the east and to the southeast of
23 here. But when we look at the Wolfcamp XY, we see
24 that there is a pretty significant accumulation of
25 high-quality reservoir rock in the Batman Robin Bane

1 Joker area.

2 And it's this uplift in rock being almost
3 the same -- same phi height values as the basil third
4 Bone Spring, which makes me think that this is a sweet
5 spot in the XY. This area, you can definitely handle
6 more -- we can definitely drill more wells and export
7 that reservoir in a more meaningful way than it's been
8 exported in other parts of this area and make highly
9 economic wells for Permian Resources.

10 You know, I think this slide demonstrates
11 that Permian Resources has taken a thoughtful
12 delineation and appraisal approach in this area where
13 we have acquired 3D seismic -- we drilled a pilot hole
14 to -- complete with core data. And have successfully
15 executed a direct analogous co-development test in the
16 Batman that is performing our proposed development
17 plan on this acreage.

18 Q Anything additional on this particular
19 slide, Mr. Bradford?

20 A I think I covered most of it. It's a lot
21 for one slide. Yes.

22 Q I don't have anything. I don't think you
23 missed anything. So I'm going to move to the next
24 one. Tell me about this slide, and explain just if
25 you would, how it relates to what we've been

1 discussing as far as that HFTS2 project.

2 A Sure. This slide is really -- it was really
3 just to kind of give some like -- a high-level
4 perspective of where HFTS2 was located, what wells
5 were targeted, and -- and kind of the differences in
6 the petroleum system between the Joker Bane area and
7 where the study was conducted down in Texas. It is
8 43.7 miles to the south of our Joker Bane location.

9 I think the HFTS has a lot of really cool
10 data in it that can really help us -- we can take and
11 extrapolate and help inform our understanding of
12 what's going on on the subsurface when we frac a well.
13 But at the same time, it's -- you know, the -- the
14 play style and hydrocarbon down there is -- is very
15 different than what's going on in the Joker Bane area.
16 So I have the Joker Bane as a red dot on the map and
17 the HFTS2 location as a blue dot on the map.

18 So I just kind of made a quick slide up here
19 or a quick comparison over on the other side with --
20 on the top, we have the red dot, which is the Joker
21 Bane, showing the Joker proposed development by
22 Permian Resources. Showing that. We are targeting
23 the Wolfcamp XY. We are targeting the third Bone
24 Spring basil low.

25 And then the other target is going up

1 through the system. The other -- the other capture
2 below the blue dot was taken directly from the HFTS
3 final report on the DOE website. And it shows that --
4 and it's really just meant to show that when you get
5 that far down south in the basin, the Wolfcamp A
6 shales take over as the primary targets for Wolfcamp
7 development.

8 There was -- there was a Y -- a Wolfcamp Y
9 and Wolfcamp X well. Wolfcamp Y as a direct part of
10 the project and then an offset Wolfcamp X well that
11 was a parent well to the project. But third Bone
12 Spring is not typically exploited down there. The
13 "certigraphy" is similar, but the hydrocarbon system
14 in the third Bone Spring is typically fairly wet in
15 that area, which is why it's not commonly targeted as
16 part of it.

17 That's -- that was really the main point of
18 this slide, was just to kind of give some perspective
19 on the fact that -- you know, like, there's a lot of
20 cool stuff we can take out of this study to help
21 inform our decisions that we're making and models that
22 we might be doing in house. But using it as a direct
23 analog of what's going on in Joker Bane is probably
24 not 100 percent accurate. I can't hear you, Adam.

25 Q That's because I'm on mute. Mr. Bradford, I

1 do want to ask one question, only because it came up
2 substantially in Ms. Mueller's testimony. And I think
3 you mostly addressed it here, but only tangentially.
4 I just kind of want you to address it head on.

5 Ms. Mueller testified that essentially,
6 because there's no frac baffle or barrier between the
7 basal third bone sand in Wolfcamp XY that it's -- in
8 their view, it's deemed to be one tank and can be
9 drained by -- or can be accessed by a single or flat
10 well development. I guess if you would, just explain
11 in your opinion why a staggered or wine rack
12 development here is appropriate.

13 A Okay. I'd be happy to. So I don't disagree
14 with the statement that third Bone Spring wells are
15 going to tap in access reserves in the Wolfcamp XY. I
16 think based off of the local geology, a four well per
17 section third Bone Spring single bench test isn't
18 going to adequately drain the reserves that are
19 present in the Wolfcamp XY in this area.

20 Because of the increase in -- in storage
21 capacity and -- and the fact that it is a charged,
22 high porosity hydrocarbon bearing unit, it needs more
23 wells to adequately produce the reserves that are
24 present here.

25 Q I know you're not an engineer, but those

1 additional wells are not going to be just accelerating
2 recovery?

3 A No. It's my belief that we will be tapping
4 into additional reserves in the Wolfcamp XY and
5 possibly in the -- the Wolfcamp shale as well.

6 Q Thank you, Bradford.

7 MR. RANKIN: At this time, Madame
8 Examiner, I would move the admission of rebuttal
9 Exhibit J.

10 THE HEARING EXAMINER: I'll pause for a
11 moment to see if there are objections. Exhibit J is
12 admitted. What?

13 MR. SAVAGE: I'm sorry, Madame
14 Examiner. Yeah. We don't have an objection, but I
15 just wanted to reiterate that we would like to be able
16 to talk to our expert witnesses in regarding to these
17 exhibits.

18 THE HEARING EXAMINER: Okay. All
19 right. Mr. Rankin, Exhibit J is admitted.

20 (Exhibit J was marked for
21 identification and received into
22 evidence.)

23 MR. RANKIN: Thank you. No further
24 questions. And I will offer Mr. Bradford for
25 questioning by counsel and the Division.

1 THE HEARING EXAMINER: Thank you.

2 Mr. Savage, do you have questions of Mr. Bradford?

3 MR. SAVAGE: I do have a few questions.

4 And bear with me a little bit. Since our expert
5 witnesses have not been able to address these, at this
6 point, I will do my best to ask the questions on the
7 rebuttal. But I also want to go to the original
8 testimony and talk about that a little bit as well.

9 CROSS-EXAMINATION

10 BY MR. SAVAGE:

11 Q So, Mr. Bradford, you talked a little bit
12 about that you do agree with Ms. Mueller that there is
13 substantial communication between the third Bone
14 Spring and the upper Wolfcamp; is that correct?

15 A Yes.

16 Q And it sounded to me like you agreed that
17 there is no frac baffles between the third Bone Spring
18 and the upper Wolfcamp?

19 A That is correct.

20 Q So there's no evidence that there are frac
21 baffles in between the two?

22 A No.

23 Q Okay. And yet you seem to suggest that
24 there is some difference between that. You do seem to
25 suggest that there is some distinction that affects

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1 production or affects the pay?

2 A Could you clarify the question for me?

3 Q Yes. So even though you agree there's no
4 baffles, did you agree that the sink tank -- a single
5 reservoir?

6 A I think there's a distinction between
7 reservoirs and tank. I think the third Bone Spring
8 basil and Wolfcamp XY are all individual sand loads
9 that are individual reservoirs. And without modern
10 horizontal completion, you do tie them into a tank.

11 Q So you think that there's two reservoirs,
12 one for the third Bone Spring and one for the upper
13 Wolfcamp?

14 A They are distinct sand loads. Yes.

15 Q Did you choose where the wells are landed?

16 A I'm part of the team that makes a decision.
17 Yes.

18 Q Okay. And how do you choose where the wells
19 are landed?

20 A We typically try to target high porosity
21 with oil saturation.

22 Q So do you rely mostly on the permit and the
23 OCD website regarding the formation --

24 A Oh. I'm sorry. I thought you were talking
25 about how we choose our landings for wells we operate,

1 not how we land wells that are not operated by us. Is
2 that what you're asking, is how we land over wells?

3 Q How do you land -- let's see. How are you
4 responsible for finding where offset wells are landed?

5 A Okay. Excellent. Yes. No. We -- we use a
6 combination of -- of grids and offset wells,
7 directional surveys from the OCD, and then pooling
8 orders and whatnot to help figure out where -- where
9 wells are landed.

10 Q Okay. I want to direct your attention to
11 your Exhibit E3 in your testimony. And that is also
12 paragraph 7.

13 A E3. Okay.

14 Q In that paragraph, you say that the
15 Permian's plan will maintain optimal spacing and
16 co-development across this acreage, including -- you
17 see that language?

18 A I have the -- I have the exhibit up. I
19 don't have the language right in front of me.

20 Q Okay. So I'll recite it slowly. Paragraph
21 seven. Permian's plan will maintain optimal spacing
22 and co-development across this acreage, including with
23 respect to existing offsetting production in the Verna
24 Rae and Riddler units, which will prevent waste and
25 maximize recovery across this acreage. Do you agree

1 that that's a fair statement, what you wrote?

2 A Yes.

3 Q And when you refer to the Riddler unit, do
4 you agree that those are 1-mile third sand wells?

5 A Yes.

6 Q So if the Riddler unit third sand wells are
7 an example of preventing waste and maximizing
8 recovery, as you say, then why are you co-developing
9 with Wolfcamp and Bane and Joker, if you use those as
10 analogs?

11 MR. RANKIN: Objection,
12 mischaracterization of Mr. Bradford's testimony.

13 THE HEARING EXAMINER: I'm sorry. Say
14 that again.

15 MR. RANKIN: I said I was objecting to
16 Mr. Savage's -- I think he mischaracterized what
17 Mr. Bradford had testified to in his statement.

18 THE HEARING EXAMINER: Okay.
19 Mr. Bradford, make sure you don't let anyone else
20 mischaracterize your statement. And if it's a
21 mischaracterization, correct it, please.

22 THE WITNESS: Yes, ma'am.

23 MR. SAVAGE: Madame Examiner, may I
24 state the comparison and statement again?

25 THE HEARING EXAMINER: Certainly.

1 BY MR. SAVAGE:

2 Q Okay. So in your statement in paragraph 7,
3 you point out the Riddler units. And you showed them
4 as an example in this quote, which will prevent waste
5 and maximize recovery across all this acreage. Do you
6 see that?

7 A Yes, sir.

8 Q And you say you agree that the Riddler
9 unit -- you did agree, as I understand, that those are
10 1-mile third sand wells, not Wolfcamp wells; is that
11 correct?

12 A Yes, sir.

13 Q Okay. So I'm going to ask the follow-up
14 question that Mr. Rankin objected to. But I believe
15 it's a fair and valid question. So if the Riddler
16 third sand wells are an example of preventing waste
17 and maximizing recovery, why are you co-developing
18 with Wolfcamp in the Bane and Joker?

19 A The language in the paragraph is meant to, I
20 think, insinuate that we are -- our development is
21 cognizant of offset parent wells and -- and is -- and
22 is responsive to the fact that there is possibly edge
23 well degradation due to the presence of existing
24 wells. Not that it is an ideal development style for
25 this area.

1 Q On your Exhibit 4, can you tell me why you
2 chose to map phi H as pay in Exhibit 4?

3 A Yes. I chose to map PH as pay because it is
4 a -- like I said in my earlier testimony, it is a -- a
5 very good way to show where the reservoir tank is in a
6 geologic formation. And it is also -- and it's very
7 easy map to create from a readily available data
8 that's available to everybody. It doesn't require
9 special interpretation or model to generate these
10 maps.

11 Q Okay. Thank you. And I just want to point
12 out. I'll come back to this. But it looks to me --
13 am I correct that even in your rebuttal exhibits, you
14 still use the phi H mapping?

15 A That is correct.

16 Q And I apologize. I may be a little bit
17 redundant. I have some questions for the rebuttal.
18 But it seemed like there were some changes that you --
19 adjustments you had made, and I'd like to talk about
20 both. But first, I'd like to talk about your original
21 testimony. Why did you use the density porosity
22 cutoff of 4 percent in Exhibit 4?

23 A It was a way just to knock out any -- any
24 tight rock in the formation. Because it's not --
25 'cause the tight rock is not a contributing reservoir.

1 Q Okay. So you basically limited it, as I
2 understand, to the third sand, and any tight rock
3 below was excluded; is that fair?

4 A Yeah. It's -- yeah. It's a standard cutoff
5 we use internally just to help us focus on where the
6 good rock is instead of mapping from zero to infinity
7 from the porosity.

8 Q Okay. And I apologize. I'm not a
9 geologist, so I'm trying to adapt to the terminology
10 as best I can. So then would it be fair to say that
11 your third sand map and Ms. Mueller's map are
12 equivalent because they both focus on the same area?

13 A I -- I -- from reviewing Ms. Mueller's
14 exhibits, I feel that our third Bone Spring maps are
15 similar and show the same depositional and reservoir
16 distribution trends in the area.

17 Q Okay. In the rebuttal, you kind of talked a
18 little bit about the water saturation, the oil
19 saturation. Is it true that like, the SO phi H is a
20 measurement of those kinds of issues as opposed to PH?

21 A Yes. It is. But SO phi H requires a --
22 requires an oil saturation model to be run, and I was
23 relying on direct measurements from core for my
24 testimony.

25 Q Okay. So those are direct data. And a SO

1 phi H requires some kind of interpretation?

2 A Right.

3 Q Okay. In your Exhibit 4, you show a 5H map
4 of the total third Bone Spring and a 5H map of the
5 Wolfcamp sands plus the Wolfcamp A shale; correct?

6 A Yes, sir.

7 Q Okay. So why did you choose -- apparently,
8 you made an adjustment here. But why did you choose
9 to map the whole third sand?

10 A Because it was a similar thickness to the
11 other map that I was making of the Wolfcamp sands and
12 Wolfcamp shale.

13 Q And why did you choose the map the Wolfcamp
14 sands the shale below?

15 A Because the shale is a hydrocarbon target
16 that I believe is providing reserves into the Wolfcamp
17 sand landing target.

18 Q Okay. So in your opinion, will the Wolfcamp
19 Y sand Bane Joker wells effectively drain the Wolfcamp
20 A shale?

21 A I believe there will be contribution from
22 the A shale in those wells.

23 Q Would you describe it as a significant
24 contribution or minimal contribution?

25 A It's -- it's very difficult -- it's very

1 difficult to tell.

2 Q Would you agree it might be no contribution
3 if it's difficult --

4 A No. I think that there is contribution from
5 the A shale. I -- I don't feel that I could put a
6 number or percentage number on it, but I do believe
7 that there is oil coming from that.

8 Q Okay. We talked about baffles. In your
9 Exhibit E7, you show a gun barrel diagram comparing
10 Permian Resources development versus Cimarex's
11 development; correct?

12 A That is correct.

13 Q And your statement for Exhibit E7. And
14 that's paragraph 11. It looks like you state the
15 following. I want to make sure I provide a fair
16 representation or accurate representation of this.
17 But Permian's plan demonstrates that spacing assumes
18 maximum development of all prospective zones?

19 A Yes.

20 Q So can you tell me what you mean when you
21 say that the spacing assumes maximum development of
22 all prospective zones?

23 A Based off our current interpretation of the
24 rock in this area, we feel that this would be the
25 maximum number of wells that we could drill in this

1 section, given what we know today.

2 Q Okay. And this may be, you know, more
3 appropriate for the land man. Are you familiar with
4 the applications and how you categorize these in the
5 pooling applications?

6 A Very tangentially. I don't feel comfortable
7 testifying on it.

8 Q Okay. Are you familiar with the
9 commencement deadline on the pooling order if it's
10 issued?

11 A No. Not offhand.

12 Q I'll reserve those questions for the land
13 man. So I'll just ask. Does Permian Resources intend
14 to drill all the wells in the proposed development
15 scenario within the next year?

16 A All proposed wells in all zones?

17 Q Depending the outcome of this hearing, yes.
18 If you happen to prevail in this hearing, do you
19 intend to drill all the wells in the proposed
20 development scenario within the next year?

21 A That is not our intent. And I do not
22 believe that is what we were required to do by the
23 pooling order either. But I would defer to Travis for
24 details on that.

25 Q Okay. So if that's the case that you do not

1 intend to drill all the wells, which wells would you
2 drill first? I'm sorry. Let me ask. Are there
3 geological criteria considerations in which wells you
4 drill first?

5 A Yes. We would likely drill the third Bone
6 Spring and XY target wells first. It's best to
7 develop the deepest target in an area first.

8 Q Between those two, which would take
9 priority? Would you drill the third Bone Spring first
10 and then the Wolfcamp, or would you drill them
11 simultaneously?

12 A Simultaneously.

13 Q Okay. In your Exhibit 8. If you can direct
14 your attention to that.

15 A Yes, sir.

16 Q You show all the offset wells in the area
17 color coded by landing zone; correct?

18 A Yes, sir.

19 Q So most of the wells on this map are third
20 sand shown in red.

21 A Yes, sir.

22 Q Okay. And there are no upper second sand
23 wells shown on this map; correct?

24 A There are upper second bone sand wells shown
25 in the Huckleberry development, but we didn't break

1 out upper and lower targets. We just showed them all
2 as second Bone Spring wells.

3 Q Okay. So are there any third carbonate
4 wells shown on this map?

5 A We have two interpreted third carbonate
6 wells landed on Section 7 right directly adjacent to
7 the Joker section -- by legacy.

8 Q Okay. Thank you. So these additional
9 landing zones. Third carb and second sand. Would
10 these be step-out test wells? Is that correct?

11 A I believe we collected enough data to prove
12 that there are functioning hydrocarbon systems in both
13 of those zones. We do need to do delineation work,
14 which we are working through right now, to understand
15 the ideal spacing and if those are viable targets or
16 not. And we are currently leveraging our data and
17 knowledge in the area to figure that out.

18 Q Okay. Mr. Bradford, I'm going to shift
19 gears a little bit, and I'm going to ask some
20 questions about your rebuttal exhibits, since that was
21 covered extensively.

22 A Yes, sir.

23 Q And some of this may be a little bit
24 redundant, because you know, there's some changes and
25 adjustments. And I apologize in advance if I'm

1 repeating myself. So on your Exhibit 1. So you now
2 show PH map of the basil third sand and the Wolfcamp
3 XY, whereas before, looks like you covered more of the
4 Wolfcamp and the other one, but --

5 A This is more focused. Yes.

6 Q Yes. This is more focused. So is this
7 Wolfcamp sands map more representative of your upper
8 Wolfcamp target compared to -- so by making this
9 adjustments, are you representing that you are
10 narrowing what those wells in the Wolfcamp XY would
11 produce?

12 A No. I narrowed the windows more to -- more
13 to have an apples to apples comparison of the sand
14 reservoirs in this area and their relative quality and
15 oil charge. It's not meant to infer drainage.

16 Q Okay. Do you think that drainage from the
17 third sand well stops in the middle of the third sand?

18 A Could you be more specific?

19 Q So you have your third sand wells. Do you
20 think the drainage is going to stop in the middle of
21 the third sand, or do you think it expands beyond
22 that?

23 A Up into the upper third bone spring?

24 Q Yes. That's correct.

25 A Yes. You -- yeah. I believe you would be

1 draining the whole third Bone Spring interval with
2 those landings.

3 Q So then why did you chose to map just the
4 third sand instead of the whole sand interval?

5 A Because I believe that's where the primary
6 hydrocarbon in the third -- the primary hydrocarbon
7 charges in the third Bone Springs sand. The upper
8 third Bone Springs seems to have much more water and
9 much less oil in it, so it's going to be less of a
10 contributor to the overall production of the wells,
11 whereas the Wolfcamp -- third bone spring basil and
12 Wolfcamp XY are the two primary hydrocarbon drivers in
13 this area.

14 Q And between those two, it sounds to me like
15 the third Bone Spring is the more primary preserves?

16 A It is. It is slightly better, but you can't
17 discount the storage in the hydrocarbon in the
18 Wolfcamp XY either.

19 Q So to some extent, you agree with
20 Ms. Mueller and Mr. Behm in that regard about the
21 third Bone Spring being a primary -- probably the
22 primary. And then possibly, even though as you point
23 out, the Wolfcamp XY -- you believe it is productive,
24 it may be a little bit less. A third. Is that fair?

25 A Very -- very minor. I think there's a very

1 minor distinction. I think in the area that we are
2 here to talk about this hearing, they are very similar
3 in charge and storage capacity.

4 Q Okay. There is a difference in the phi H
5 based on these maps between the Batman development and
6 the subject lands; correct?

7 A Yes. I mean, it varies across the area.

8 Q And in both the Wolfcamp sands and the third
9 sand. Correct?

10 A Yes.

11 Q You can see that difference from these maps.
12 Do you agree?

13 A Yes.

14 Q Okay. So you see phi H differences between
15 Batman and the subject lands, and yet you're saying
16 the Batman development is a geologic analog to the
17 subject lands; correct?

18 A That is correct.

19 Q Okay. If I can direct your attention to
20 Exhibit J. On your Exhibit J, you now label the black
21 and tan development on your phi H maps; is that
22 correct?

23 A Yes, sir.

24 Q Okay. In both the basil third sand map and
25 the Wolfcamp XY sand map, the values of the black and

1 tan are very similar to the Batman development. Do
2 you agree with that?

3 A I would say for where we drilled our
4 Wolfcamp XY well on the Batman, it's much more similar
5 to Joker Bane than it is to black and tan. But the
6 third Bone Spring is very similar across this whole
7 area.

8 Q Okay. And then in that sense, you again
9 agree with Ms. Mueller and Mr. Behm in his testimony
10 that there is a consistency in that regard across the
11 area of interest? I'm sorry. Did you understand that
12 question?

13 A Oh. I said yes.

14 Q I'm sorry. There must be some kind of
15 delay. And I apologize for my video blinking red. I
16 don't know what's going on with that, but it seems to
17 flash like that, so. And last couple questions here.
18 And this is on your Exhibit J2. In this exhibit, you
19 compare the thickness of the HFTS2 site versus the
20 subject lands. Is that correct?

21 A It's not intended to be a thickness
22 comparison. It's more meant to show where wells are
23 landed in -- we think the targets are in one area
24 versus another area.

25 Q Can the conclusions about thickness be

1 derived from the data that you're showing on this?

2 A I -- I'm not entirely sure what you're
3 asking there.

4 Q Looking at what you provided, are there
5 inferences regarding what the thicknesses would be
6 between the two?

7 A I'm sorry. I still don't -- I still don't
8 understand what the question -- what you mean by
9 inferring stuff about the thicknesses.

10 Q So from this exhibit -- and I assume it's
11 the logs that we're talking about -- you cannot infer
12 anything about which site, the subject lands or the
13 HFTS2 -- you cannot infer if there's any thickness
14 difference from this exhibit; is that correct?

15 A It would be difficult to. Yes.

16 MR. SAVAGE: Okay. Madame Examiner,
17 let me check my notes real quick.

18 THE HEARING EXAMINER: Okay.

19 MR. SAVAGE: Thank you, Madame
20 Examiner. I think I'm finished with
21 cross-examination.

22 And, Mr. Bradford, I appreciate your
23 time.

24 THE WITNESS: Thank you.

25 THE HEARING EXAMINER: Thank you,

1 Mr. Savage.

2 Mr. Rankin, do you have any redirect
3 before I go to the technical examiner?

4 MR. RANKIN: I do not.

5 THE HEARING EXAMINER: All right.

6 Mr. Garcia, do you have any questions of Mr. Bradford?

7 MR. GARCIA: I have a few.

8 CROSS-EXAMINATION

9 BY MR. GARCIA:

10 Q Good afternoon, Mr. Bradford. I only have a
11 few questions.

12 A All right.

13 Q You can get your core sample data.

14 A Yes, sir.

15 Q When you guys take cores, do you guys
16 evaluate the cores in house, or do you hire an
17 external party to evaluate the cores?

18 A We use -- we use premier laboratories to do
19 the core analysis. But we do most of the
20 interpretation in house on the actual data that comes
21 back.

22 Q All right. And I guess maybe Mr. Rankin can
23 help answer this one too. Are those core reports
24 deemed sensitive or confidential, or is that something
25 you can provide to us?

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1 A They are deemed proprietary. I think we'd
2 have to discuss with our legal counsel if we were able
3 to provide them to you or not.

4 Q That's not a necessary thing. I was just
5 more curious. I think this table will work for these
6 purposes. Going back to Cimarex's Bone Spring design.
7 Because really the debatable topic here is there are
8 bone springs on top of the Wolfcamp. What are your
9 thoughts on their four well placement in the bottom of
10 the Bone Springs per section in how they will drain
11 the Wolfcamp XY? Do you think it's going to drain
12 effectively, partially, not at all?

13 A I -- I think -- I think because the
14 proximity of the targets and the reservoirs, it will
15 partially drain the reservoir. Based on what I
16 interpreted on the reservoir quality in the Wolfcamp
17 XY in this direct area, I do not believe that it is
18 going to effectively drain all the reserves that are
19 present there.

20 Q Okay. And on the flip side -- I know I
21 asked your engineer that just testified. Do you think
22 Permian's plan with the A wells in this area for the
23 Bone Springs and Wolfcamp is a little overkill? I
24 mean, they're very close, I guess, is my concern. And
25 I'm still concerned about extra cost. You don't think

1 it's too many?

2 A I think eight is the maximum that we would
3 drill in -- in the area. I think, like, the black and
4 tan shows pretty definitively that -- that 12 is way
5 too many. And I think that this area could support 8
6 on an upward -- as a maximum development to make
7 highly economic wells.

8 Q Okay. Again, I asked your engineer a second
9 ago about wine rack -- two and two wine rack. Did you
10 guys evaluate maybe a two two or a three by three wine
11 track? Did you?

12 A Like a six well per section wine rack?

13 Q Yeah. Three in Bone Spring. Three in
14 Wolfcamp staggered. Or not staggered. Wine racked.

15 A I would say, like, if we're evaluating that
16 in tandem with the -- with the eight wells, I think
17 that the -- the two and two or four well -- I do think
18 that this area can support more than just four wells
19 in this -- in this reservoir tank.

20 Q So if this order was approved in your favor,
21 is eight wells not a set plan? Are you guys still
22 evaluating, I guess, is my next question based off
23 that.

24 A I think we are -- we are leaning into
25 permitting and -- and prepping all of our developments

1 for the eight wells per section test. But I -- I
2 think we do reserve the right to change our mind in
3 light of new data. We are going to be doing more
4 testing to the south in our Robin Section and -- and
5 to help us inform our decisions on what we develop up
6 here.

7 Q Mr. Savage brought it up. And it might have
8 been better suited for your production, but I'll ask
9 you. How many wells total does this whole subject
10 area have for you guys?

11 A Wells total. On the Batman, we have five
12 wells total. In the direct area around here, I think
13 that's all the wells PRs drilled.

14 Q I guess projected to be drilled.

15 A Oh. Projected. Gosh. Between all the
16 zones and -- and our footprint in this area, we
17 have -- I can't do the math in my head real fast. But
18 it's -- it's a significant number of wells that we're
19 going to be drilling in this area.

20 Q Okay. How long do you think it would take
21 you to drill all those wells together?

22 A To fully develop the whole queue, the entire
23 zone? Like -- like, the third, second, first --

24 Q Correct.

25 A -- any other zones in between? It would

1 probably take -- it would probably take us -- take us
2 several years as we -- as we work our -- we probably
3 start at the base and work our way up through the --

4 Q Okay. And what if we talk about just the
5 Wolfcamp and Bone Springs? Would it still take
6 several years? Because I think there's less concern
7 about effects on the upper Bone Springs as there are
8 Bone Springs on top of the Wolfcamp.

9 A No. We would get after -- our plans are to
10 get after drilling the -- the XY third Bone Spring
11 tank as soon as possible.

12 Q I had asked Cimarex's geologist, because
13 they had testified a little bit about potential to
14 come back and add Wolfcamp wells in the future. I
15 believe they stated somewhere along the lines of --
16 they would try to aim those wells as low as possible
17 to avoid any parent/child effects from happening in
18 the future.

19 Do you think if they did lower those zones
20 that there would be parent/child effects, negatively
21 parent/child effects?

22 A I do. I think you can see that on the black
23 and tans. And I think that the third bone is even
24 still too close to the Wolfcamp A shale. If you came
25 back later, you can see significant degradation

1 because of the depletion above you. I agree with
2 everything John said about that in his testimony.

3 Q And sorry for my memory. Who's John again?

4 A John Fechtel. Our reservoir engineer. He
5 just testified.

6 MR. GARCIA: I'm horrible with names.
7 I'm sorry about that. I believe that is all my
8 questions for now.

9 THE WITNESS: Thank you.

10 THE HEARING EXAMINER: All right.
11 Thank you, Mr. Garcia.

12 Ms. Thompson, do you have questions?

13 MS. THOMSPON: I have no questions.
14 Thank you.

15 THE HEARING EXAMINER: All right.
16 Thank you. Any reason not to excuse Mr. Bradford?

17 THE WITNESS: Thank you.

18 THE HEARING EXAMINER: Thank you very
19 much, Mr. Bradford.

20 Mr. Rankin, are we moving to final
21 witness?

22 MR. RANKIN: We are, Madame Examiner.
23 We do have two witnesses left, but it seems like in
24 the interest of time, we would only call one so that
25 we could try to complete our side of the case today.

1 THE HEARING EXAMINER: Okay. I'm
2 sorry. I lost count there.

3 MR. RANKIN: It's okay. Yeah. We had
4 four, but you know, I think we're going to focus on
5 what matters here. So I will say, however, Madame
6 Examiner, I do need the fourth witness to adopt his
7 testimony so I can admit his exhibits to the record.
8 I'm happy to wait to do that to the very end.

9 I would like to get Mr. Macha's
10 testimony in, so I would ask that Mr. Macha be called
11 to the stand. And then, we can deal with
12 Mr. Clement's[ph] testimony at the very end.

13 THE HEARING EXAMINER: All right.
14 Thank you.

15 So, Mr. Macha, would you raise your
16 right hand, please.

17 WHEREUPON,

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

22 THE HEARING EXAMINER: All right.
23 Thank you very much. And I'm sure Mr. Rankin will ask
24 you to spell your name for the record.

25 MR. RANKIN: I will.

1 DIRECT EXAMINATION

2 BY MR. RANKIN:

3 Q Mr. Macha, can you please state your full
4 name for the record. Spell your last name for the
5 benefit of the court reporter.

6 A My name is Travis Macha. My last name is
7 spelled M-A-C-H-A.

8 Q By whom are you employed and in what
9 capacity?

10 A I am employed by Permian Resources as a New
11 Mexico land lead.

12 Q Have you previously testified before the
13 Division, and have you had your credentials as an
14 expert in petroleum land matters accepted?

15 A Yes, I have.

16 Q Are you familiar with the applications that
17 were filed in these cases on behalf of Permian and
18 Reed and Stevens and the competing cases filed by
19 Cimarex?

20 A Yes.

21 MR. RANKIN: Madame Examiner, I move to
22 tender Mr. Macha as an expert in petroleum land
23 matters.

24 THE HEARING EXAMINER: Okay. I've
25 definitely heard his testimony before, but I'll pause

1 momentarily for an objection.

2 MR. SAVAGE: No objection.

3 THE HEARING EXAMINER: He is so
4 recognized. Oh. Thank you, Mr. Savage.

5 BY MR. RANKIN:

6 Q Mr. Macha, in preparation for today's
7 hearing, did you prepare a self-affirmed statement?

8 A Yes, I did.

9 Q And was that submitted as part of the
10 exhibit packet in these cases and marked as Exhibit C?

11 A Yes.

12 Q Yeah. Got you. Good. And did you also
13 prepare some exhibits to go along with your testimony?

14 A Yes, I did.

15 Q And were those marked as Exhibits C1 through
16 C14?

17 A Yes.

18 Q And in addition to the exhibits that were
19 filed, did you also have an exhibit that was filed
20 after -- I think it was filed on -- let me see if I
21 can get the date. A supplemental exhibit that was
22 filed on July 14th marked as Exhibit C. One moment.
23 I believe it was supplement exhibit to C12, which was,
24 I think, a letter from Chase.

25 A C12. A letter from Chase. Yes.

1 Q And other than that, do you have any
2 changes, supplements, or additions to your testimony
3 or the exhibits that were filed previously?

4 A No, I do not.

5 MR. RANKIN: At this time, Madame
6 Examiner, I would move the admission of Exhibit C
7 along with the attachments C1 through C14, along with
8 the supplement Exhibit C12 that was filed previously.

9 THE HEARING EXAMINER: All right. I'll
10 pause for a moment for an objection.

11 MR. SAVAGE: No objection.

12 THE HEARING EXAMINER: All right.
13 Thanks, Mr. Savage. Exhibit C and its attachments are
14 admitted. And, Mr. Rankin, just a reminder. As I
15 mentioned a couple hours ago, we do have to stop at
16 4:30 again.

17 (Exhibit C was marked for
18 identification and received into
19 evidence.)

20 MR. RANKIN: I understand. And I don't
21 know. I can't guarantee we're going to get through
22 Mr. Macha's direct. I apologize for that. I
23 anticipated we would. I'll do my best to do it.

24 THE HEARING EXAMINER: Okay. You know,
25 I'm available most of tomorrow. We can have a

1 discussion about kind of next available date when you
2 ask Mr. Macha some questions.

3 MR. RANKIN: Thank you, Madame
4 Examiner. And I appreciate the opportunity to confer
5 with my folks here in Santa Fe. And I think there may
6 be an opportunity for us to try to complete this in
7 the morning if that's an option.

8 THE HEARING EXAMINER: Yes.

9 BY MR. RANKIN:

10 Q Mr. Macha, have you had an opportunity to
11 review the land testimony and exhibits that were
12 provided in this case by Cimarex?

13 A Yes, I have.

14 Q And did you prepare a set of rebuttal
15 exhibits and testimony in response to those?

16 A Yes, I have.

17 Q Are those marked as rebuttal Exhibit I?

18 A Yes.

19 Q At this time, Mr. Macha, I'm going to go
20 ahead and share my screen. And I'm going to ask
21 you -- you know, I may interject here and there and
22 maybe have some questions. But I'm going to ask you
23 to refer to each page of your Exhibit I.

24 And we can discuss as we go through them.
25 And I'm going to put these on a screen so that we can

1 see them properly. One moment. Are you able to see
2 my screen now, Mr. Macha?

3 A Yes.

4 Q Real quickly, explain what this shows. I
5 think this is essentially a timeline. And there's
6 been some discussion about what happened in the past.
7 Just explain the point of this exhibit in response to
8 Cimarex's testimony.

9 A Yeah. So Cimarex's testimony kind of sets
10 forth a brief timeline from kind of 2018 to present.
11 I just thought it might be beneficial for everyone to
12 kind of see the whole broad picture of the history of
13 these four sections and kind of the lease hold as well
14 as the high-level development that's taken place
15 over -- over the years.

16 Q Okay. So I think we were going to spend a
17 little more time on this. But I think in the interest
18 of time, we're going to go ahead and bypass any
19 further discussion here. On your next slide,
20 Mr. Macha, just explain what this slide shows and what
21 it's in response to.

22 A So these -- we felt a strong need to kind of
23 talk about the bottom-right statement to -- that
24 Cimarex has now repeated three times, first in their
25 July 26th brief about how they claim that we've only

1 filed on single Wolfcamp application in the vicinity,
2 whereas we've filed 17.

3 You know, and just kind of pointing out the
4 fact that that is wildly incorrect. And you know, on
5 the left side, we break out the actual Bone Spring and
6 Wolfcamp cases between Batman, Robin, and Riddler. I
7 also will note that four of the ten Bone Spring cases
8 that Cimarex cites that we have all filed are actually
9 four of the Bane cases that we're hearing today. So
10 I'm not really sure the intent of -- of the statement.
11 But obviously, we wanted to address it.

12 The other part of that is they claim that
13 if, you know, by pulling these Bone Spring cases, we
14 are inhibiting correlative rights of the Wolfcamp
15 owners. And kind of just following that little --
16 little line onto the bottom left. I've kind of
17 indicated that, you know, while there -- there are
18 depth severances and it's very common in Joker and
19 Bane -- you know, Batman, Robin, Riddler.

20 We've been fortunate enough to not to have
21 to, you know, deal with too many of those. There is
22 one single one in the -- in -- in Batman, in the
23 northeast corner of Section 19, whereas Permian itself
24 doesn't own more -- more interest than Wolfcamp.

25 Q So as a consequence, because for most of

1 these other spacing units, there's no difference in
2 the Wolfcamp, explain how that does or doesn't impact
3 correlative rights in those other cases.

4 A So you know, if -- if you've got uniform
5 interest between the Bone Spring and Wolfcamp
6 formations and you pull both of them or you pull one
7 of them. All owners have been noticed thoroughly and
8 are very aware of their -- their rights and what would
9 be impacted and what wouldn't be and what -- what the
10 potential development plans would be as -- as to
11 their -- their interest respectively.

12 Q And can you explain in this -- according to
13 these pooling cases -- the other point of this, I
14 think, Mr. Macha -- I wanted you to just make sure we
15 understood it. Can you explain -- not only are these
16 cases pulling the Wolfcamp as well, but can you
17 explain the development plan for these Wolfcamp
18 applications and how they relate to the Joker Bane?

19 A Right. So as you know, John Fechtel and Ira
20 have kind of detailed with the Batman development.
21 That was kind of our first appraisal of co-development
22 between the third bone and Wolfcamp in this area.

23 We're transitioning that into Robin -- the
24 Robin unit, where we are going to be plugging more
25 Wolfcamp wells into that, utilizing those pulling

1 orders. Riddler. That one's a little weird.
2 Obviously, the legacy Reed and Stevens Company has
3 drilled six bone wells in that. But there is their
4 way of third bone left in -- in the west half of
5 section ten. One mile that we are intending on
6 developing, co-developing with the Wolfcamp there.

7 Q So we just explained, I guess, in each of
8 these cases. You're proposing the same wine rack
9 co-development pattern between -- explain whether you
10 are developing the same wine rack co-development
11 pattern between the third Bone Spring and the Wolf
12 Camp XY.

13 A Correct. So I think, you know, just
14 exhibiting this is -- is a clear intent of us to be
15 co-developing the Bone Spring and Wolfcamp across this
16 entire area.

17 Q Okay. We talked a little bit about
18 correlative rights in the last exhibit there and how
19 it's not an issue when there's uniform ownership
20 between pools. Explain how that's different here, if
21 you would.

22 And I'm going to just ask you to -- we're
23 going to slowly kind of walk through this. And I want
24 to start with -- if you would just, at the far left on
25 this top chart, explain who these owners are and what

1 the different colors and bold type and asterisks mean.

2 A Yeah. So on the owners -- so you know, I
3 kind of -- you know, I've highlighted Delmar Hudson,
4 Magnum Hunter, and Cimarex the same color. They --
5 they're all owned by Cimarex themselves. The Avalon
6 Energy Corp., Reed and Stevens, and First Century are
7 owned by Permian.

8 The asterisks indicate pooled parties. Bold
9 type is intended to clarify owners that are owning a
10 differential interest between the Bone Spring
11 Wolfcamp. I did neglect Hog Partnership, LP. And
12 William A. Hudson should be bolded as well.

13 Q Now, at the top of this, you're obviously
14 indicating here that you're going to make a comparison
15 between contractual versus lease sold. Explain why
16 you're doing that, and then walk through if you would
17 the main body of the chart and explain how this shows
18 the differences in ownership.

19 A Yeah. So on that left side of that black
20 line, I kind of detail the lease hold interest. You
21 know, I give the net acres normalized across all four
22 sections in each the Bone Spring and Wolfcamp. And I
23 also provide the delta there.

24 The negative deltas indicate a higher
25 interest in the Wolfcamp, and the positive deltas

1 indicate a higher interest in the Bone Spring. And
2 I've also indicated a higher interest in the Wolfcamp
3 by the blue rose and the higher interest in the Bone
4 Spring by the orange rose.

5 And hopping over to the right side of that
6 black line, I detailed the exact same, but broken out
7 by contractual interest. The point of -- of this kind
8 of summary is that -- you know, Cimarex has detailed
9 that they have issue with the original division of
10 interest that we set forth based on lease hold title.

11 This is kind of just to show that whether
12 you look at lease hold title or contractual title, it
13 paints a very similar picture. Whereas half the
14 parties almost, if not have, are going to be
15 negatively impacted via their correlative rights if
16 indeed Cimarex's plan is -- is adopted.

17 Q Just briefly, Mr. Macha, would you just
18 explain why it is that, in your understanding -- for
19 purposes of compulsory pooling, why it is that you
20 were using the lease hold interest and represented
21 those in your direct testimony exhibits?

22 A Right. So it's -- it's our understanding
23 that per OCD statute that for the purposes of pooling,
24 the OCD cares about the underlying lease hold rather
25 than voluntary agreements between the working interest

1 parties.

2 Q Now, I want to just make sure I understand
3 again. I know you talked about this, but I want to
4 walk through these columns real quickly. I know we're
5 almost at 4:30. But going from left to right, let's
6 look at the lease hold interest. Okay. Because I
7 think that's what matters for compulsory pooling
8 orders.

9 You've indicated here on a full development
10 basis for both Bone Spring and Wolfcamp what the net
11 ownership is for both pools; correct?

12 A Correct.

13 Q And explain to me why you did that on a full
14 development basis, just so I understand. Individual
15 space units for the purposes of this chart.

16 A So for the purpose of -- of this chart, I
17 just wanted to give a high-level overview of the
18 entire area and why -- and why and how exactly each of
19 these owners might prefer a co-development strategy or
20 why they might actually prefer a -- only developing
21 the Bone Spring.

22 As you can see, there are several owners,
23 including Cimarex, that -- or at least the Magnum
24 Hunter entity -- that own substantially more acres in
25 the Bone Spring. And at least on a land

1 perspective -- I'm not speaking towards a technical
2 perspective -- in my opinion, would be a motivation as
3 to why you might want to inhibit the drawing of the
4 Wolfcamp and try to capture those rights by drilling
5 the Bone Spring.

6 Q Okay. So based on this chart, where you
7 have the delta column where it's negative, explain
8 what that means versus where it's positive and how
9 that's reflected in the next column where it says
10 formation favor.

11 A Right. So just take an MRC permit at the
12 top as an example. Normalize cross all four sections
13 in the Bone Spring. 14.40 acres. And the Wolfcamp,
14 they own 43.23. That delta -- just a negative --
15 negative delta indicates more interest in that
16 Wolfcamp formation. It's just a simple subtraction.

17 Q And explain there's no difference when you
18 do that between the --

19 THE HEARING EXAMINER: Mr. Rankin, I
20 think we've reached the end of our time.

21 MR. RANKIN: Yes, we did.

22 THE HEARING EXAMINER: We're clearly
23 not going to finish with Mr. Macha today. I'm sorry
24 about that.

25 MR. RANKIN: Madame Examiner, may I

1 have a moment to confer with --

2 BY MR. RANKIN:

3 Q Or, Mr. Macha, is there any issue with us
4 continuing in the morning, to your knowledge?

5 A Not to my knowledge, no.

6 MR. RANKIN: Madame Chair, I would ask
7 that we be permitted to resume the hearing on this
8 matter in the morning at 8:30.

9 THE HEARING EXAMINER: Yes, sir. 8:30
10 is the time I would propose.

11 Mr. Savage or Mr. Zimsky, are you
12 available?

13 MR. SAVAGE: I believe Mr. Zimsky has
14 been conferring with our client to see if we are
15 available. And I'm getting some feedback here. And
16 it looks like we are all available.

17 THE HEARING EXAMINER: All right.
18 Terrific. Marlene will send out another -- if she
19 hasn't already. She's so efficient, she probably
20 already sent it out. There'll be another link, and we
21 will resume the hearing at 4:30. Thank you all.

22 (Whereupon, at 5:32 p.m., the
23 proceeding was concluded.)

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I, DANA FULTON, 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.



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Notary Public in and for the
State of Missouri

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CHRISTIAN HARTSELLE

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[point - preserves]

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District Courts

Article 5, Rule 1-030

(e) Review by Witness; Changes; Signing.

If requested by the deponent or a party before completion of the deposition, the deponent shall have thirty (30) days after being notified by the officer that the transcript or recording is available in which to review the transcript or recording and, if there are changes in form or substance, to sign a statement reciting such changes and the reasons given by the deponent for making them. The officer shall indicate in the certificate prescribed by Subparagraph (1) of Paragraph F of this rule whether any review was requested and, if so, shall append any changes made by the deponent during the period allowed.

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2019. PLEASE REFER TO THE APPLICABLE STATE RULES
OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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