

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

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

CASE NOS: 21275, 21276

IN THE MATTER OF THE APPLICATION OF NOVO OIL
& GAS NORTHERN DELAWARE FOR COMPULSORY POOLING,
EDDY COUNTY, NEW MEXICO.

REPORTER'S TRANSCRIPT OF VIRTUAL PROCEEDINGS
COMMISSIONER HEARING, VOLUME 1
August 14, 2020
Santa Fe, New Mexico

BEFORE: ADRIENNE SANDOVAL, CHAIRWOMAN
JORDAN KESSLER, COMMISSIONER
DR. THOMAS ENGLER, COMMISSIONER
MIGUEL LOZANO, ESQ.

This matter came on for virtual hearing before
the New Mexico Oil Conservation Commission on Thursday,
August 14, 2020 through the New Mexico Energy, Minerals, and
Natural Resources Department, Webex Platform, Santa Fe, New
Mexico.

Reported by: Irene Delgado, NMCCR 253
PAUL BACA PROFESSIONAL COURT REPORTERS
500 Fourth Street, NW, Suite 105
Albuquerque, NM 87102
505-843-9241

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APPEARANCES

FOR NOVO OIL & GAS:

JAMES BRUCE
941 East Palace Avenue
Santa Fe, NM
505-982-2043

FOR BTA OIL PRODUCERS:

DANA HARDY
ANDY BLANCO
HINKLE SHANOR LLP
P.O. Box 0268
Santa Fe, NM 87504
505-982-4554

EXHIBITS (Admitted)

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1 CHAIRWOMAN SANDOVAL: Great. Okay. This is a
2 hearing in Case 21275 and 21276 to consider the application
3 of Novo Oil & Gas Northern Delaware for compulsory pooling
4 in Eddy County, New Mexico. These cases will be
5 consolidated for hearing, but an order will be issued
6 separately for each case. BTA Oil Producers LLC has entered
7 its appearance in opposition to the application and
8 requested this de novo hearing before the Commission.

9 Will the parties make their appearances for the
10 record beginning with the applicant.

11 MR. BRUCE: This is Jim Bruce representing Novo
12 Oil & Gas, and we will be presenting three witnesses.

13 CHAIRWOMAN SANDOVAL: Thank you. Ms. Hardy?

14 MS. HARDY: Thank you. Dana Hardy on behalf of
15 BTA, and I will also be presenting three witnesses.
16 Mr. Blanco, Eddie Blanco will be present for parts of the
17 hearing, also.

18 CHAIRWOMAN SANDOVAL: Thank you. This hearing
19 will be conducted in accordance with the Commission's
20 adjudication rules, as well as the procedural rules set for
21 this specific virtual hearing. It will be held in a fair
22 and impartial manner so as to assure the relevant facts are
23 fully elicited and to provide a reasonable opportunity for
24 all interested persons (unclear).

25 This hearing may be -- this hearing is being

1 recorded both electronically and stenographically. A copy
2 of the transcript will be posted in the online case log on
3 OCD's web site.

4 The hearing will proceed as follows: All
5 testimony will be taken under oath. I will admit any
6 relevant evidence unless I determine the evidence is unduly
7 repetitious (unclear) or holds little or no probative value.
8 Any party who wishes to make a brief opening statement
9 before presentation of the party's direct testimony may do
10 so.

11 The applicant will present direct testimony
12 first. Other interested or intervening parties who have
13 sent in (unclear) a prehearing statement or notice of intent
14 to present testimony may present direct testimony. Any
15 party to this hearing may cross-examine the witness. Only
16 the Commissioners and participating parties shall have the
17 right to cross-examine the witness.

18 Cross-examining the parties will be conducted
19 following cross-examination by the Commissioners. Redirect
20 examination will be permitted, but such testimony is limited
21 to the testimony that's relevant to that offered during
22 cross-examination.

23 If time permits, and at my full discretion, a
24 party who wishes to give a rebuttal testimony or make a
25 brief closing argument may do so at the conclusion of the

1 testimony in the same order as direct testimony. Any
2 objection concerning the conduct of today's hearing may
3 state it orally during the hearing with the party raising
4 the objection briefly stating the grounds for the objection.
5 The ruling I make on the objection and the reason will be
6 stated for the record.

7 We will now proceed with the hearing. Is there
8 any admission of evidence or facts by the parties?

9 MR. BRUCE: I do not have any.

10 MS. HARDY: No, Madam Chair.

11 CHAIRWOMAN SANDOVAL: Novo may now make a brief
12 opening statement.

13 MR. BRUCE: Thank you. Commissioners, because of
14 the prior case, you are already familiar with a lot of the
15 facts involved in the Novo BTA dispute, although there are
16 some key differences.

17 First of all, BTA does hang a lot of weight on
18 its voluntary agreement, but the overriding principle that
19 the OCD has to look at is prevention of waste and protection
20 of correlative rights. Also when you're looking at the
21 statutory mandate if (unclear) is included in a proposed
22 well unit that is not subject to a voluntary agreement with
23 the proposed operator, the Division shall pool that acreage
24 as necessary.

25 In this case there is abundant authority to pool

1 JOA acreage or even acreage committed to an exploratory unit
2 to Novo's proposed units. If you look at the order in this
3 case, R-21252, it sites examples of that obviously in the
4 Marathon order -- the Phillips order that was referenced in
5 the Marathon case, and if you go to Order R-14524, which
6 also involved pooling 2-mile laterals where 1 mile was
7 totally subject to an operating agreement just like in the
8 situation that BTA is facing today.

9 Moreover, the regulations of the OCD and orders
10 going back quite some time allow force pooling of acreage
11 involving not only just JOA acreage, but acreage of existing
12 exploratory units such as the Big Eddy unit. If you go
13 back, I can name orders, R-8831, R-11743, R-12990, and
14 R-12749, which pooled acreage either in the Big Eddy or the
15 James Ranch unit with non-unit acreage. So this is clearly
16 permissible under Division policy, Division precedent and
17 Division regulations.

18 I think you also have to look at the development
19 plan and Novo's geologist will testify about co-development
20 of the Third Bone Spring and the Upper Wolfcamp which is
21 necessary to prevent waste.

22 Another key in this case are the surface issues
23 that Novo must address in order to drill its wells. BTA is
24 saying -- try to get Novo to get another surface location
25 where it can drill 1.5-mile wells. The fact of the matter

1 is, the surface owner and the BLM would not go along with
2 BTA's proposed surface locations for Novo's wells.

3 Novo can only drill from the western edge of the
4 NW/4 of Section 8 and hence the problem. What BTA would
5 have Novo do is drill over a half a mile of unperforated
6 wellbore in order to reach its mile and a half of
7 solely-owned property. That's economic waste that could
8 result in -- not only that, but which the engineer for Novo
9 will testify could lead to well collision issues and other
10 potentially dangerous matters. All in all, it will lead to
11 surface waste and economic waste.

12 Novo would also point out in its presentation
13 that it does -- it is active, and that it will drill its
14 wells as soon as it can. Although BTA has drilled more
15 wells in New Mexico, Novo is experienced. Their -- their
16 employees have experience in drilling the wells, and I've
17 always considered that, and I've argued it before the
18 Division, that if the sole determinant of who gets to drill
19 a well is who has more wells drilled, then the state should
20 bar new operators from coming into the state. I don't
21 believe that's proper.

22 In the end, I think you will see that Novo has a
23 better drilling plan, a better recovery plan. It must drill
24 2-mile laterals to minimize waste and potential collision
25 matters. And we think if you simply look at Pages 3 and 4

1 of Order 21252 which was issued by the Division in this
2 matter, and which was submitted as Exhibit 25 in Novo's
3 exhibit packet, you will see that the Division addressed all
4 of these issues and found in favor of Novo, and we think the
5 Commission should also. Thank you.

6 CHAIRWOMAN SANDOVAL: Thank you, Mr. Bruce. Ms.
7 Hardy, do you have an opening statement?

8 MS. HARDY: I do. Thank you. Novo acquired its
9 acreage in this case with knowledge of BTA's JOA and
10 knowledge that surface restrictions would exist due to the
11 location of the acreage in the potash area. Novo now seeks
12 to limit BTA's ability to develop its acreage as a result of
13 Novo's choices.

14 Novo's request is inconsistent with the Oil & Gas
15 Act requirements that pooling orders be just and reasonable,
16 and that correlative rights must be protected and the
17 applications should be denied.

18 BTA's JOA should be honored and enforced.
19 Operating rights for the Ochoa acreage, which consists of
20 480 acres, are part of BTA's correlative rights when the Oil
21 & Gas Act is be construed in its entirety as it must be
22 under New Mexico law, and the Oil & Gas Act recognizes a
23 preference for voluntary agreements.

24 The issue here is not whether the Commission has
25 authority to pool BTA's acreage, but whether it should do

1 so. And in past cases the Division has allowed operators to
2 control 100 percent of their acreage like BTA here to
3 proceed with development in response to challenges from
4 parties seeking to suspend permits in order to pool.

5 And those two orders are Order R-20430 and 20467.
6 In both of those cases the Division precluded challengers
7 from limiting an operator's ability to develop when it
8 controlled 100 percent of its acreage.

9 Order 15254 which was cited by Mr. Bruce, has
10 been vacated by Order 15254 B, so that order has no force
11 and effect.

12 With respect to the surface restrictions
13 Mr. Bruce just mentioned, BTA's witnesses will establish
14 that Novo can safely and economically access its wells from
15 the approved drill island using tangents. Novo does not
16 need to pool BTA's acreage as it has claimed, and it does
17 not need to drill a half mile dead hole to reach its wells,
18 either.

19 As a result, denying Novo's application will not
20 result in waste. BTA is an experienced and successful
21 operator in this area, while Novo does not have a proven
22 track record. And BTA has drilled and completed 14
23 horizontal wells in Eddy County and 80 in New Mexico, while
24 Novo has completed three. It's not just the difference in
25 experience that's relevant, it's the fact that Novo's track

1 record has not been good with the development that it has
2 conducted.

3 One of its three wells failed to penetrate the
4 last 40 acre tract leaving part of the unit stranded, and
5 BTA's witnesses will address other issues with Novo's
6 applications and pooling order.

7 BTA is an experienced multi well pad operator in
8 New Mexico while Novo is not. BTA's development is superior
9 to Novo's and will more efficiently recover the reserves
10 underlying the Ochoa acreage. Novo proposes unnecessary
11 wells that will reduce production and harm BTA's correlative
12 rights.

13 BTA is able to locate its wells timely and is
14 ready, willing and able to commence drilling and complete
15 its wells once this case is resolved.

16 Novo has stated with respect to other wells that
17 it has pooled that it does not intend to develop them any
18 time soon. BTA's well has been approved by the BLM, and BTA
19 has spudded 28 wells in New Mexico in 2020 and has rigs
20 available. Finally, BTA will present evidence that Novo did
21 not negotiate in good faith prior to pooling.

22 In conclusion, BTA's witnesses will establish
23 that BTA should be permitted to develop its Ochoa acreage to
24 protect its correlative rights, prevent waste and conserve
25 resources. If the granting of Novo's application would

1 impair BTA's correlative rights and result in waste,
2 accordingly Novo's application should be denied. Thank you.

3 CHAIRWOMAN SANDOVAL: Thank you, Ms. Hardy.
4 Mr. Bruce, would you like to call your first witness?

5 MR. BRUCE: Yes. I'd call my landman, Brandon
6 Patrick.

7 CHAIRWOMAN SANDOVAL: Court reporter, would you
8 swear him in?

9 (Technical difficulties.)

10 CHAIRWOMAN SANDOVAL: Is he on the phone?

11 MR. BRUCE: Yes.

12 CHAIRWOMAN SANDOVAL: Let me unmute all the
13 call-ins.

14 Can you hear me, Mr. Patrick?

15 MR. PATRICK: Yes.

16 CHAIRWOMAN SANDOVAL: Okay, great.

17 Go ahead and proceed, Irene.

18 BRANDON PATRICK

19 (Sworn, testified as follows:)

20 DIRECT EXAMINATION

21 BY MR. BRUCE:

22 **Q. Mr. Patrick, would you state your full name and**
23 **city of residence?**

24 A. Yes. Brandon Patrick, Oklahoma City, Oklahoma.

25 **Q. And who do you work for and in what capacity?**

1 A. Novo Oil & Gas as the vice president of land.

2 Q. Have you previously testified before the Oil
3 Conservation Division?

4 A. Yes.

5 Q. And were your credentials as an expert petroleum
6 landman accepted as a matter of record by the Division?

7 A. Yes.

8 Q. Have you previously testified before the
9 Commission?

10 A. No.

11 Q. Would you summarize your educational and
12 employment background for the Commissioners, please?

13 A. Yes. I attended and graduated from the
14 University of Oklahoma with degrees in finance and energy
15 management. Graduated in 2012. From there started work at
16 Devon Energy located in Oklahoma City working as a landman.
17 I worked in the (unclear) Basin for a couple of years and
18 then worked in southeast New Mexico managing those assets
19 for Devon up until 2017.

20 I then moved over to Novo to be their land
21 manager starting in 2017 and was promoted to vice president
22 of land last year. Also during that same time frame I
23 graduated from Oklahoma City University School of Law with a
24 law degree.

25 Q. And does your area of responsibility at Novo

1 include this portion of southeast New Mexico?

2 A. Yes, it does.

3 Q. And are you familiar with the land matters
4 involved in these two applications?

5 A. Yes.

6 MR. BRUCE: Madam Chair, I tender Mr. Patrick as
7 an expert petroleum landman.

8 CHAIRWOMAN SANDOVAL: Ms. Hardy, do you have any
9 opposition?

10 MS. HARDY: No objection.

11 CHAIRWOMAN SANDOVAL: Commissioners?

12 COMMISSIONER KESSLER: No objection.

13 COMMISSIONER ENGLER: No objection.

14 CHAIRWOMAN SANDOVAL: The witness is certified as
15 an expert in this field. Please proceed.

16 CHAIRWOMAN SANDOVAL: We're going to stop at
17 noon, so if we need to finish up with his questioning at
18 1:30, keep that in mind for planning.

19 MR. BRUCE: Thank you.

20 BY MR. BRUCE:

21 Q. Mr. Patrick, before you get to your exhibits,
22 when were cases -- I will refer to the Division case
23 numbers, 20916 and 20917, when were they heard by the
24 Division?

25 A. In November of 2019.

1 Q. And what was the outcome?

2 A. In April of 2020 the Division entered order R
3 21252 approving Novo's development plan and establishing
4 Novo as the operator of the pooled unit.

5 Q. And this is the order that BTA is appealing here
6 today; correct?

7 A. Yes, that's correct.

8 Q. Regarding Novo's -- the well names that Novo has
9 are the Astrodog wells; is that correct?

10 A. That's correct.

11 Q. Regarding the Astrodog development plans, have
12 circumstances for Novo changed since Order Number R-21252
13 was entered?

14 A. No.

15 Q. Have you spoken with anyone at BTA from the time
16 the order was entered until today?

17 A. Yes. I spoke with Willis Price.

18 Q. And what did those contacts involve?

19 A. I reached out to him right after the order was
20 entered to see if they were still interested in possibly
21 doing an acreage trade. I understood that -- we own
22 minerals in this area that are under some of BTA's operated
23 units. We own a significant amount of minerals, actually.
24 So we own so much minerals out there, I figured we had a lot
25 of trade chips available that we could possibly use to

1 execute a trade to make them happy, and in exchange we would
2 ask for their interest in our pooled unit, the Astrodog
3 unit.

4 Q. Were you able to come to terms with BTA?

5 A. No, not yet, no.

6 Q. Would any trade agreement change anything with
7 regard to Novo's drilling position in this case?

8 A. No. No. That would remain in confidence.

9 Q. Okay. And with respect to the exhibits, there
10 are Exhibits 1 through 11, those are for case 21275;
11 correct?

12 A. Yes. We refer to 20196 as the one you just
13 mentioned, but yes, that's correct.

14 Q. Then Novo's Exhibit 12 through 22 are for case
15 Number 20917 or 21276; is that correct?

16 A. That's correct, yes.

17 Q. And are they basically the same set of exhibits
18 except for differences as to the Bone Spring or Wolfcamp
19 formation being pooled in each case?

20 A. That's right. That's the only -- that's the key
21 difference, yes.

22 Q. And let me ask a land question up front. With
23 respect to Novo's interest -- and we'll get into the
24 exhibits here in a second -- what is Novo's ownership
25 position, in other words, type of ownership in the N/2

1 of -- in the NE/4 of Section 8, and then in the N/2 of
2 Section 9?

3 A. We own an unleased mineral interest, so it's an
4 interest where we don't actually have to pay royalty,
5 whereas BTA and Marathon and these other -- in their cases,
6 their interest is a leasehold interest, so they are paying a
7 royalty owner. And for those lands, it's the federal
8 government, the mineral owner who's leased out those lands
9 to BTA and Marathon. So whenever wells are drilled, the
10 federal government will receive royalty revenue from the
11 wells. But in our case, we don't -- or we own the minerals
12 and it's unleased, so we don't have to pay anybody.

13 Q. And in your acreage, what would that be, 300 --
14 480 acres, there are no working interest partners with you;
15 it's all Novo 100 percent. Is that correct?

16 A. That's correct.

17 Q. Okay. And next, as I referenced in my opening,
18 is one of the biggest issues involved in this case related
19 to surface and surface use?

20 A. Yes. Yes. It's -- the acreage is all in the
21 designated potash area, so there is the potash issues, but
22 also as we'll see in the exhibits, the acreage in Sections 8
23 and 9 are largely under Salt Lake out there, which is
24 another very tough constraint to deal with, so it's
25 literally under water.

1 So surface is a very big issue, and when you are
2 that close to water, you have archeological issues, you have
3 biology issues, wildlife, hydrology. There is just a litany
4 of different issues.

5 **Q. Okay. Let's start with Exhibit Number 1. Just**
6 **summarily, what does Exhibit 1 contain?**

7 A. It contained C-102s for each of the wells that
8 Novo has proposed in this case.

9 **Q. And these are -- these are the C-102s for the**
10 **Wolfcamp wells?**

11 A. That's correct. That's correct.

12 **Q. Okay.**

13 A. And Exhibit 11 would be a like -- it's a like,
14 physical like exhibit with, you know --

15 **Q. No, Exhibit 12.**

16 A. Oh, 12, yes. Yes, that's correct.

17 **Q. Would be a like exhibit for the Bone Spring**
18 **wells; correct?**

19 A. That's correct.

20 **Q. Okay. Now, there's -- I forget exactly how many**
21 **Wolfcamp well proposals, but those are just for the record.**
22 **If you could move on through to Novo Exhibit 2, what is**
23 **contained in Novo Exhibit 2?**

24 A. Exhibit 2 is a proposal letter that we have been
25 offered the Astrodog Wolfcamp wells. It has nine wells in

1 it. It just contains the typical information that we
2 include in the well proposal letter.

3 Q. Okay. And is Exhibit 13 the same for the Bone
4 Spring wells in the subsequent case?

5 A. Yes.

6 Q. Who are the -- just off the top -- who are the
7 parties being pooled in this case?

8 A. BTA and Oxy Y1.

9 Q. And we will get to this more in detail later, but
10 does Oxy support Novo in its applications?

11 A. Yes, they have actually given us a support
12 letter, yes.

13 Q. Besides these proposal letters, have you had
14 other contacts with the interest owners?

15 A. Yes. Both Oxy and BTA, we have talked at length.

16 Q. Now, BTA, has it seemed to you -- in your
17 opinion, is BTA intent on solely developing its acreage
18 solely by itself or through its JOA?

19 A. Yes. That seems to be what they want to do.

20 Q. And so you listened in to the Marathon testimony,
21 did you not?

22 A. I did.

23 Q. And Marathon didn't get very far with BTA, either
24 in negotiating development of this area, did it?

25 A. No, they did not.

1 Q. Okay. And then moving on, what does Exhibit 3
2 contain?

3 A. These are the AFEs for the Wolfcamp wells that we
4 propose, the nine wells. And Exhibit 14 would be the same
5 for the Bone Spring.

6 Q. Okay. Now, these AFEs are about a year old; is
7 that correct?

8 A. That's correct.

9 Q. And the Wolfcamp wells, without getting into
10 detail, are about \$11.8 million. At the time these wells
11 were proposed, were those costs fair and reasonable and in
12 line with the cost of other wells of this type drilled in
13 this area of southeast New Mexico?

14 A. Yes. Yes. Our operations team does a good job
15 of creating these cost estimates, and they are based on, you
16 know, what they understand the rates are and (unclear) so,
17 yes. We also have non-work interests in other wells that
18 are drilled in similar wells, 2-mile wells that are drilled
19 out in this area in the same formations, and that number,
20 11.8, was in line with, with what those other costs were.

21 Q. And so it's not just the several wells you
22 drilled to date or the wells that you are planning on
23 drilling shortly, but you're in -- you're a non-operator in
24 a number of wells, and you have seen a lot of these similar
25 well costs?

1 A. That's correct, yes.

2 Q. Now, there's been obviously some, shall we say,
3 flux in the industry over the past four months, five months
4 or so.

5 A. Yes. That's accurate.

6 Q. And perhaps the drilling engineer could say more,
7 but operational (unclear) drilling costs are kind of in a
8 state of flux at this point. Would that be fair to say?

9 A. Yeah, that's fair. Our drilling engineer, Alex
10 Bourland, can speak more to that. But, yes, it's my
11 understanding that surface costs are, you know, obviously
12 they fluctuate with the industry's success and there was a
13 downturn over the last five months, so costs in general have
14 come down.

15 Q. Now, if the Commission grants Novo's
16 applications, would Novo prepare current AFEs to send out to
17 any pooled party before commencing its wells?

18 A. Of course, yes, we would be required to do that,
19 and that's what we would do, anyway, yes.

20 Q. Moving on to Exhibit 4 -- and the correlative
21 exhibit for the Bone Spring it Exhibit 15, I believe.

22 A. That's correct.

23 Q. Does this exhibit give a little overview -- and
24 the Commission has probably seen some of this already in the
25 prior hearing -- give you land overview of the situation for

1 **your proposed wells?**

2 A. Yes. Yes, it does.

3 **Q. Now, first of all, looking at the Wolfcamp wells,**
4 **is there a depth severance in the Wolfcamp formation?**

5 A. No, there is no depth severance to the Wolfcamp.

6 **Q. What about in the Bone Spring formation?**

7 A. Yes. The depth severance in the west E/2 of
8 Section 8, it's created by a Second Bone Spring well that
9 was actually on this last case. I think BTA might have
10 mentioned the Road Lizard well that Concho drilled in 2011.

11 The Second Spring well, it goes from Section 5
12 down into Section 8 the north-south well. And that well was
13 the only well that Concho drilled. And they have one --
14 the history is that out here they owned all the leasehold
15 out here, most of it, and since that was the only well they
16 drilled, that the leases terminated as to the land outside
17 the spacing unit, and these are within the Second Bone
18 Spring. So this created a depth severance at 8773 feet, and
19 that's what they reflected in the title.

20 **Q. Well, that would that be only in the -- would**
21 **that be only the W/2 E/2 of Section 8?**

22 A. Yes, that's correct.

23 **Q. Inside the acreage there is no depth severance?**

24 A. No. No, there isn't. However, we did take into
25 consideration that depth severance and the complication that

1 it would create whenever we were to pool the Bone Spring,
2 the entire Bone Spring.

3 And it's been our experience as we did just
4 north, and we did it with Concho, the right thing to do is
5 just to create -- ask the Division to enter a depth severed
6 pooling order which we are doing in this case. So that's
7 why our pooling application to the Bone Spring is depth
8 limited from 8773 feet to the base of the Bone Spring with
9 the intent of capturing the Third Bone Spring formation.

10 **Q. That doesn't preclude future activity by Novo in**
11 **the Second Bone Spring, does it?**

12 A. No. No. In fact, we have plans for the Second
13 Bone Spring.

14 **Q. Okay. Let's move on to your Exhibit 5, and**
15 **that's -- the correlative exhibit in the next package is**
16 **Exhibit 16; correct?**

17 A. That's correct.

18 **Q. Okay. What does this plat show?**

19 A. It shows the history of the prospect. One thing,
20 this is the same exhibit that we presented to the Division
21 in November 2019. It holds the time line from December 2017
22 to July 2019. But something that I failed to mention at the
23 Division hearing is that from December 2017 to July 20000 --
24 or 2019, BTA claimed to own the mineral interests that Novo
25 now owns in Section 8 and 9.

1 And in February 2017, at the around the same time
2 that the Nido Drill Island was established in the NW/4 of 8,
3 in December of 2017, BTA (unclear) in Eddy County records
4 that named BTA as the owner of the minerals in Sections 8
5 and 9, along with numerous other tracts. That's mineral
6 deed was dated December 4, 2017. The grantor was US Borax
7 and the grantee was BTA Oil Producers who we are talking
8 with today.

9 A copy of that mineral deed is found at Book
10 1101, Page 155 in Eddy County records. So the point in me
11 bringing that up is BTA claimed title to the minerals in
12 Sections 8 and 9 that we now own today.

13 **Q. So that would be everything except the NW/4 of 8;**
14 **correct?**

15 A. That's right. And given that the mineral deed
16 was filed around the same time that Nido Drill Island was
17 established, I assumed that BTA was aware of the Nido Drill
18 Island and probably intended on drilling from that drill
19 island to develop the N/2 of Sections 8 and 9 in a similar
20 fashion as Novo wants to drill today.

21 And so then 11 months later, BTA acquired its
22 leasehold in the N/2 of Section 7 and NW/4 of Section 8.
23 They have established that they got that from EOG. And then
24 after that, Novo, in July of 2019, Novo acquired the mineral
25 interest that BTA had claimed during this whole span of

1 time.

2 BTA released its claim in Sections 8 and 9, and
3 they released that claim to TDY (unclear) who then, we,
4 Novo, acquired their, TDY's interest. So it all happened
5 pretty fast, but from December 2017 to July 2019 BTA held
6 themselves out as the owner of the minerals of that Sections
7 8 and 9. And then very quickly, right after they released
8 their claim, Novo closed it's deal with TDY to acquire the
9 minerals in Section 8 and 9 that we are talking about today.

10 Q. And these lands are in the designated potash
11 area; correct?

12 A. Yes, they are.

13 Q. So they are subject to not only our Division or
14 Commission Order Number R-111P, I believe is the current
15 iteration, but also the secretarial order that was issued
16 several years ago on development in the potash area?

17 A. That's correct.

18 Q. What must an operator do to drill in the oil
19 potash area pursuant to the federal regulations?

20 A. Well, the first step is to, if your surface
21 location is going to be within the designated potash area,
22 you have to establish a drill island. In this case there
23 was already that Nido Drill Island that we were talking
24 about in the NW/4 of Section 8.

25 Once you picked out your surface location and the

1 BLM and potash company and all the affected parties that
2 show up at the onsite, if everyone agrees and the BLM grants
3 the drill island, then the next step would be to establish a
4 development area. And that's under Order 3324 that you are
5 talking about. That's --

6 **Q. The order of the secretary of interior; correct?**

7 A. That's correct. That was the 2012 secretary's
8 potash order, Order 3324. It sets out all of this in much
9 more detail, but at a high level first step, establish a
10 drill island; second step, establish a development area.

11 The development area is an area -- it isn't what
12 it sounds like. You develop -- it's the area that the
13 operator wants to develop from the drill island, and the
14 process to establish development area is very similar to a
15 pooling.

16 It could be actually construed as maybe the
17 federal pooling within the potash area. So what you do as
18 an operator once you establish your development area is you
19 propose that development area to BLM and circulate it to all
20 the affected parties within a certain radius. And although
21 there is a notice and comment period and parties can object
22 to the establishment of that development area if they have
23 good reason. And if there is a protest, the BLM will try to
24 get the parties to come to an agreement, but if there is no
25 agreement -- if there is no agreement that can be made and

1 you are in a loggerhead, then the BLM, the authorized
2 officer is actually compelled to rule and adjudicate that
3 issue, much like a pooling.

4 So the authorized officer that BLM has for this,
5 his name is Jim Rutley, and he is the one that, in this
6 circumstance when we are talking about development areas, he
7 is the one that would untangle disputes between operators
8 and ultimately rule on which development area is going to be
9 established.

10 Q. He's been pretty busy --

11 (Overtalk, inaudible.)

12 Q. And he's been pretty busy over the last few
13 years, hasn't he?

14 A. Oh, yeah. There's been a lot of disputes in the
15 designated potash area. But, you know, one last thing about
16 the process, the development area, once you get the
17 development area then BLM will grant permits on your land.

18 So the right process is what I just laid out.
19 It's to first work with the parties that you might be
20 affecting and try to come up a good plan. You want to try
21 to resolve the disputes on the front end. You establish
22 maybe a drill island, if you can, and then get the
23 development area, and then submit your permits.

24 It seems a little out of order to get permits
25 before you get the development area because it is

1 presumptuous. It assumes that you are definitely going to
2 get a development area when the affected parties still have
3 their right to protest. I lay it out in that sequence for
4 that reason.

5 Q. Okay. Now the federal development area
6 agreements, do they generally recognize there will only be
7 one operator in that development area.

8 A. Yes, they do.

9 Q. I think you already hit upon this, but the -- the
10 Nido Drill Island was established in December of 2017.

11 A. Yes, that's correct.

12 Q. And that's of public record; right?

13 A. I'm not sure if it's public record. I receive
14 e-mail -- because Jim Rutley circulates e-mails to the
15 industry, everybody that's on his list that reached out,
16 every company that wants to receive these. It's a very,
17 very long list of parties that he circulates this to. I
18 think the intent is for it to be public record, but I don't
19 think it's like published in a newspaper or web site or
20 anything.

21 Q. It's not confidential between an operator and the
22 BLM?

23 A. That's correct.

24 Q. So that was 11 months before BTA acquired EOG's
25 interest in the NW/4 of Section 8; correct?

1 A. That's correct. Yes.

2 Q. Okay. Now, this case pertains to Novo's -- the
3 first case -- developed -- well, both cases, I should say,
4 develop plans in the N/2 of Sections 8 and 9. Does Novo
5 also have plans on developing the S/2 of Sections 8 and 9?

6 A. Yes, we do.

7 Q. And again, do you own 100 percent of the mineral
8 interests unleased?

9 A. Yes, we do. Yes. In the S/2 of 8 and 9, we have
10 100 percent.

11 Q. So there is more at stake here than just the N/2
12 of these two sections?

13 A. That's correct.

14 Q. Now, let's move on to your Exhibit 6, which is
15 several pages long, and let's be careful in going through
16 them so we make sure we reference to the Commissioners and
17 BTA the proper pages that you are looking at. Just briefly,
18 what is -- what does Exhibit 6 relate to?

19 A. In general, it relates to the preparation of the
20 surface and our conversations with Mosaic, the surface
21 owner, the surface lessee, United Salt Carlsbad, our
22 conversations with BTA, our well proposal, so it covers a
23 lot of ground. And it's got a time line at the top of each
24 of these I think that kind of helps to keep the Commission
25 oriented.

1 **Q. Let's start with the first page, which is headed**
2 **Novo Contacts Mosaic to Plan Surface. Could you go through**
3 **that briefly?**

4 A. Yes. This is the first page of Exhibit 6. So at
5 this point in time, Novo was negotiating for the acquisition
6 of the minerals in Sections 8 and 9 that we are talking
7 about today. We understood that there was a claim that BTA
8 had, but we were confident that the party we were trying to
9 buy from, TDY, would prevail, and in that case we wanted to
10 own the minerals. So I bring that up because we were doing
11 our due diligence prior to closing that transaction.

12 So this is in April of 2019 before own the
13 minerals, and this just shows my communication to Mosaic.
14 They're a potash lessee, but they are also a surface owner
15 out here, and they -- they are very, I don't want to say
16 stingy, but they are very -- they manage their surface very
17 toughly. They want to make sure they are mitigating risks
18 and things like that.

19 So this is my first conversation with Mary
20 Langman, the supervisor at land at Mosaic. And here you can
21 see on the bottom left there is a map showing -- this is my
22 e-mail to her on April 3 saying, "Here is some pad locations
23 that we would like to establish to develop the remainder of
24 Sections 8 and 9.

25 **Q. Those would be in addition to the Nido Drill**

1 **Island?**

2 A. Yeah, correct. The drill island was already
3 approved, so there was no need to talk to her about that,
4 they were already fine with it. But you can see potential
5 well pad Number 1, potential well pad Number 2, that was the
6 subject of my e-mail.

7 And you will any notice that potential Well Pad
8 Number 1 is north of a railroad track, and potential Well
9 Pad Number 2 is south of the railroad track. So I e-mailed
10 her on April 3, and on April 11 Mary Langman responded, and
11 she essentially said that Well Pad Number 1 was fine, but
12 Well Pad Number 2, she said the ground was -- she said the
13 ground that close to the Salt Lake is unstable, there's a
14 risk of flooding and high risk of contamination to the Salt
15 Lake should there be a release, insinuating that they have a
16 problem with the location of Well Pad Number 2, and in
17 general they don't want well pads to be southeast of the
18 railroad track.

19 **Q. And, yeah, you mentioned the Salt Lake, and I**
20 **know you will get into this a little bit more. Is that lake**
21 **leased out to a company that harvests salt?**

22 A. Yes. United Salt Carlsbad is the surface lessee,
23 and you can actually see on that image if you look in the
24 green where the rectangles are, that's part of their salt
25 harvesting operation, so they are currently --

1 Q. On the east side of that little plat; correct?

2 A. Yes, that's correct.

3 Q. Okay. Let's go to the second page which is Novo
4 Proposes the Astrodog Wells.

5 A. Yes. So skipping ahead to August 2019, at that
6 point in time we had agreed to move that pad, Pad Number 2,
7 north of the railroad tracks. So here we proposed 2-mile
8 laterals, from the Nido Drill Island and then what we were
9 calling Pad Number 1 on the previous slide, we proposed
10 those, those wells to be BTA in August 2019 just right
11 after, right after we closed our deal with TDY.

12 Q. Okay. And a couple of things, when you are
13 looking at the -- at the pictures down below, that Well Pad
14 Number 2, you did agree with Mosaic to move it to the west
15 of the railroad track; correct?

16 A. That's correct.

17 Q. And does that railroad, does the railroad grade
18 provide a barrier to anything affecting the Salt Lake?

19 A. Yes. Its elevation is just a little bit higher
20 than the ground either side of it, so it acts sort of as a
21 berm. And, yeah, it prevents, it prevents water runoff from
22 going into the lake, so yeah, it acts as a barrier.

23 Q. And another thing, looking at the dates, even
24 though the next couple of slides have them, in April of 2019
25 before you acquired your minerals, you were already looking

1 at getting surface locations approved by Mosaic; is that
2 correct?

3 A. That's correct.

4 Q. And then you acquired those interests in July of
5 2019?

6 A. Yes, that's correct.

7 Q. So just three months later or so?

8 A. Yes.

9 Q. And then in August of 2019, you proposed the
10 wells.

11 A. That's right.

12 Q. Is Novo intent on getting this prospect drilled?

13 A. Absolutely. Given the high net revenue interest
14 that we have since we don't have to pay a royalty interest,
15 the economics of this development is very, very great, and
16 it speaks to our capital among other prospects in this area,
17 it's very competitive. It's -- honestly, it will be where
18 we go after we finish the infill wells in Rana Salado just
19 to the north of here.

20 So, yes, we have -- and our engineer will talk
21 more about this, so we have actually signed a rig contract
22 for those infill wells in Rana Salado just to the north. We
23 are going to drill four wells up there and we intended to
24 come back down here and drill the N/2 of 8 and 9.

25 Q. And the little plat in the lower right-hand part

1 of Page 2 of this exhibit shows that there are salt
2 harvesting operations across all of -- almost all of 8 and
3 9; is that correct?

4 A. Yes. That salt lake is rather large and that,
5 and that salt operation is significant. They are -- it's
6 not a small shop, and it's a big, it's a big company and
7 they have said to us that they would, they would much prefer
8 our, our pad locations than where BTA wanted us to move
9 those pads to be.

10 Q. Okay. Let's, let's move on to the third page,
11 which is BTA opposes Novo's Astrodog plans. Could you run
12 through this exhibit?

13 A. Yes. So as I just said, BTA wanted us to move
14 the pad locations. They wanted us to move that Nido Drill
15 Island to the east, they wanted us to move pads, the other
16 pad in the middle to the east. They wanted to put it really
17 close to that salt lake.

18 And at first glance we weren't apprehensive to it
19 at all. If we could get all parties on board, we would be
20 fine with it, I think, as long as it meant all of Novo's,
21 you know, risk mitigation efforts, but that's not the case.
22 Mosaic opposed it for potash reasons as well as surface
23 reasons. United Salt Carlsbad opposed it for surface
24 reasons and salt mining operations.

25 And so, yeah, that just wasn't an option, and BTA

1 just told us they didn't want us to develop the NW/4 of
2 Section 8 and because they wanted to do it on their own with
3 1.5 mile laterals in N/2 of 7 and N/W of 8.

4 **Q. And if Mosaic and the salt company and the BLM**
5 **were amenable to it, we might not be here today?**

6 A. That's correct. That's correct. I mean, we
7 still -- Novo still reserves the right to be able to, you
8 know, determine on their own -- on our own if there is
9 significant risk at putting the pads that close to the lake,
10 and we don't want to, I guess, forfeit that. But, yes, in
11 general, if we get all -- the first step was finding out if
12 the parties would even agree, and they wouldn't, so the
13 question became moot.

14 **Q. Okay. And then let's move on to Page 4. Novo**
15 **and BTA discuss Novo's plans. What's shown in that one?**

16 A. Yeah, so this -- this just shows BTA's and Novo'
17 interactions. You will see on the bottom right Novo offered
18 to do trades with BTA. As I mentioned earlier, we own
19 mineral interests in this area that are better -- that are
20 under BTA's operated units that they have already drilled
21 wells on, and the have infill locations that they plan on
22 drilling as well.

23 So we made offers including those mineral
24 interests, but we were not able to find an agreement. And
25 then Willis, their land manager, wanted to meet and discuss

1 what was going on. So we hosted a meeting here in Oklahoma
2 City. He came up, we went to lunch, and it was very
3 cordial.

4 Novo told BTA that moving the pad locations
5 likely wouldn't get approved by Mosaic. We told them about
6 our conversation with Mary Langman, and we told him about an
7 onsite that we had scheduled for October 24 with the BLM to
8 go look at these pad locations. At the time the surface was
9 the main concern, and we advised them to go to that onsite
10 on October 24.

11 And then at the end of the meeting, basically the
12 way we broke the meeting up was Novo and BTA agreed to
13 jointly approach the BLM to discuss, to discuss these pad
14 locations and the possible -- the potential move, but BTA
15 requested that before we go and approach the BLM, they
16 wanted their engineer to review the pad location.

17 So we refrained from contact with the BLM. And
18 we waited, and a couple of weeks passed, and our vice
19 president of the land at the time reached back out to Willis
20 and said, "Hey, it's been a couple of weeks. Has your
21 engineer had an opportunity to review the pad locations?"

22 And that's when Willis revealed that they had
23 essentially gone behind Novo's back and gone to the BLM
24 without telling us and trying to talk to the BLM about
25 moving these pads that we would be drilling from, having

1 these ex parte type of communications with the BLM. And,
2 and we -- that ruffled our feathers, but still we wanted to
3 get something done. So, anyway, that's the end of that
4 part.

5 And then BTA proposed their Ochoa development
6 area, and we objected to it. We objected to that
7 development area because we -- it conflicted with our plans
8 for the N/2 of 8 and N/2 of 9, and our plan seemed like the
9 only plan that we could possibly execute. We didn't have
10 any alternative given the surface potash constraint, so we
11 had no choice, to protect our interest, we had to object and
12 protest that development area.

13 And then right before, the day before the onsite,
14 BTA sent an e-mail or (unclear) sent an e-mail essentially
15 threatening to object to any development area proposed
16 within the secretary's potash area unless Novo withdraws
17 their objection to the Ochoa development area.

18 And that was, even if BTA didn't have an interest
19 in the development area that we were going to be proposing,
20 they were going to object, which they actually followed
21 through with that promise.

22 We proposed a development area in the W/2 of
23 Sections 10 and 15 in the same township. BTA did not own an
24 interest in this section, but yet BTA filed a protest as
25 they promised and threatened in this October 23 e-mail.

1 Q. Okay. Thank you.

2 MR. BRUCE: Madam Chair, it's noon. Would you
3 care to take a break at this time?

4 CHAIRWOMAN SANDOVAL: Yes, that would be great.
5 Do you have more questions for your witness? If so, we will
6 continue those at 1:30.

7 MR. BRUCE: You know, it will -- we are getting
8 there, but, you know, if we reconvene, I forget what time
9 you said, that would probably be better just so people can
10 go out and take a break.

11 CHAIRWOMAN SANDOVAL: Yeah, no problem. Let's
12 see. So it's 12 o'clock now. We will reconvene at 1:30.

13 MR. BRUCE: Okay. Thank you.

14 MS. HARDY: Thank you.

15 (Lunch recess taken at 12 noon and the proceeding
16 reconvened at 1:30 p.m. as follows:)

17 CHAIRWOMAN SANDOVAL: It's 11:30 -- I'm sorry,
18 it's not 11, it's 1:33, good afternoon, and we will get
19 started again. Mr. Bruce, are you with us?

20 MR. BRUCE: Yes.

21 CHAIRWOMAN SANDOVAL: All right. Great. Would
22 you like to continue questioning your witness?

23 MR. BRUCE: Okay.

24 CHAIRWOMAN SANDOVAL: We remind you you are still
25 under oath from earlier.

1 MR. BRUCE: Okay.

2 CONTINUED DIRECT EXAMINATION

3 BY MR. BRUCE:

4 Q. Mr. Patrick, we were on Exhibit 6, the fifth page
5 which is headlined October 24 BLM onsite. Could you discuss
6 that exhibit for a minute?

7 A. Yes. So on October 24 the BLM held an onsite for
8 the pads that you see on the exhibit. They reviewed -- they
9 rereviewed the Nido Drill Island and other two pads that are
10 shown in red. The people that attended the onsite were BTA,
11 Novo, the BLM, United Salt Carlsbad, the surface lessee that
12 has the salt mining operation, XTO and Titus.

13 And the result of that onsite was that BLM
14 approved our pad locations for Astrodog development. Also,
15 at that onsite we had the opportunity to talk to the plant
16 manager at United Salt Carlsbad about the idea of moving the
17 pad further to the east.

18 And then we followed up that onsite with how I
19 got this e-mail from Tom Vandercross, the plant manager that
20 went to the onsite where he said, "We prefer the current
21 placement much more than the one proposed by BTA due to less
22 risk to harvesting areas."

23 That was immediately after the onsite, and then
24 actually this week I got another e-mail, it's not reflected
25 in this exhibit, but I'm happy to provide a copy of this

1 e-mail, it was from Tom Vandercross. Again, he, this week
2 reiterated, he sent me an e-mail and it says, "United Salt
3 Carlsbad in is full support of Novo's proposed pad
4 placement. Simply put, Novo's proposed pad placement will
5 not put any actively harvested part of the lake at risk. It
6 moved to the (unclear) that BTA proposes, the main section
7 for brine collection which feeds brine to all the other
8 sections will be put at risk. An accident could affect our
9 entire salt harvesting operation."

10 That's regard to Tom Vandercross. The point
11 being that United Salt Carlsbad is very much in favor of
12 Novo's plan and is in opposition of moving the pads that BTA
13 wanted.

14 **Q. Okay. And then the final page, Page 6 of Exhibit**
15 **6, what does this show?**

16 A. This shows a comparison of, you know, our plan,
17 Novo's plan on the left, what it would look like if you draw
18 2-mile laterals as shown from the pads that are approved.
19 And then if you went to the right, this is BTA's recommended
20 alternative plan as of the hearing that we had back in
21 November.

22 They want us to move those pads further to the
23 east, and as I've said before, that's not a viable option.
24 And, as a result, that would strand our 480 acres of
25 minerals if we are unable to, to drill the wells we want to

1 drill from the pad in the N/W corner -- NW/4 of Section 8.

2 **Q. And just to reiterate, the BLM has approved the**
3 **drill island in the western part of the NW/4 of Section 8;**
4 **correct?**

5 A. Yes, that's correct.

6 **Q. And Mosaic has approved those plans?**

7 A. Yes, they have approved those plans, and they
8 have also -- you can see on this slide on the bottom right
9 there is an e-mail from (unclear) at Mosaic saying they
10 would also object to the relocation of the Nido Drill Island
11 as it would impact their oil reserves.

12 So they not only agree with our pad is and
13 accepting of it, but they disagree with the relocation of
14 the pads.

15 **Q. And United Salt has agreed with Novo's plans?**

16 A. That's correct.

17 **Q. And is it, is it fair to say that when it comes**
18 **to surface locations, et cetera, the BLM can be pretty**
19 **deferential to what the potash company prefers?**

20 A. Yes, definitely within that designated potash
21 area. And within the designated potash area you have two
22 resources, the potash resource and oil and gas resource that
23 are competing and overlap, and that's when the BLM has to
24 step in and basically untangle the mess.

25 And, yes, they are very deferential to the potash

1 company because they don't want -- they don't want oil and
2 gas operators to place drill islands that could, one,
3 prevent the potash company from accessing the potash
4 resource, but two, even if the potash company tried, they
5 are posing a safety risk. And that's something important to
6 note is that the potash companies don't want you to put
7 drill islands that infringe on their potash floor because if
8 they were to go develop it, it would be a significant safety
9 risk.

10 **Q. So that's a safety risk as to the surface of the**
11 **lake itself; correct?**

12 A. That, too. I would really say it's about, it's
13 about the wellbore penetrating the potash resource -- I'm
14 not a geologist, but I understand at least that the potash
15 resource is shallow. It's in this area somewhere around
16 1000 feet, give or take, and it's -- the threat is if oil
17 and gas operators penetrate that resource with their
18 wellbores, they are worried about, the potash companies are
19 worried about if they go in there and try to develop that
20 resource and mine for it and they strike a wellbore or
21 something, you could potentially significantly harm all the
22 people that are down there in the mine. So it's a safety
23 risk that they are very careful about protecting.

24 **Q. In your opinion, is BTA's proposed alternative,**
25 **moving the Nido Drill Island to the east, reasonable?**

1 A. No. No, it's contrary to the risks that have
2 been raised by the surface owner lessees, BLM and just our
3 intuition.

4 **Q. Now, what happens if the Nido Drill Island can't**
5 **be moved and Order R-21252 is vacated?**

6 A. If that happens, then there is going -- we are
7 going to be forced to drill 2-mile laterals through the NW/4
8 of 8 from the (unclear) to the pads, and we would have about
9 2600 feet or so of dead hole, meaning we would not perforate
10 that hole, that portion of the hole. As our engineer will
11 speak to later, it creates operational risks as well, you
12 know, drilling big tangents should be avoided.

13 I'm not, again, I'm not an engineer, but at least
14 I know enough through, you know, having worked with plenty
15 of engineers at Devon and here that you want to avoid, you
16 know, big kick-outs when possible. Sometimes you have to
17 drill a big kick-out out of necessity. Sometimes it's
18 unavoidable.

19 Look at the S/2 of Sections 8 and 9, sure, we
20 would prefer to have a pad that's further south, but as you
21 can see, we can't just due to the surface constraints, we
22 can't put a pad in the middle of the lake, or at least on
23 the bank of the lake, it just won't happen. So we are
24 prepared to drill a kick-out out of necessity because
25 that's -- we have no other option.

1 **Q. But that's not -- that's not going to -- those**
2 **won't be, especially for the wells in the N/2 of the S/2 of**
3 **8 and 9, that's not going to be 2600 feet, is it?**

4 A. No. I'm going -- I will defer to the engineer on
5 that, but it doesn't appear so, no. And again, when you can
6 mitigate that, whenever you can drill a straight lateral, or
7 at least somewhat straight and avoid big kick-outs, it's
8 just common sense to do so. Big kick-outs create risk, and
9 there can be all sorts of risks. I'm sure the engineer can
10 speak more to that, but it's wasteful to kick out when it's
11 not necessary.

12 **Q. Okay. Now, Novo isn't proposing 2-mile laterals**
13 **just to try to impair BTA's development of its acreage, is**
14 **it?**

15 A. No. We are proposing this plan because it's the
16 only viable option. We are stuck with the pads that we
17 have. The pads that we have are very -- they are good
18 enough to get a job done, but this is the only plan we can
19 do feasibly.

20 **Q. And another thing, I mean, you can understand why**
21 **BTA wants to operate wells, can you not?**

22 A. Yeah. Sure, I mean --
23 (Overtalk.)

24 **Q. Novo wants to, Marathon wants to.**

25 A. Correct.

1 Q. But when you are looking at the definition in the
2 statutes of correlative rights, does it mention operatorship
3 of a well?

4 A. It's my understanding it does not.

5 Q. Isn't it more just to ensure the recovery of a
6 just and equitable share of production to each interest
7 owner in the acreage?

8 A. Yes, that's my understanding.

9 Q. And right behind that is a letter from Marathon's
10 counsel. What is that?

11 A. Exhibit 7 is the -- you will see there is a
12 support letter from Marathon that they support Novo's plan,
13 yeah.

14 Q. And has Oxy sent you a support letter also?

15 A. Yes, they have also sent a support letter. It
16 wasn't included in this exhibit just inadvertently, but we
17 are happy to provide a copy, yeah.

18 Q. And -- and I think you have already noted --
19 mentioned this, but Oxy is a working interest owner under
20 BTA's JOA; is that correct?

21 A. Yes. BTA claims that they control 100 percent of
22 the interest in the N/2 of 7, N/W of 8 by virtue of being
23 the operator of that JOA. I don't necessarily dispute that.

24 I do say that it is odd that the only other
25 working interest owner, Oxy, who they claim to control and

1 who has a considerable stake working interest in the N/2 of
2 7 N/W of 8, Oxy supports Marathon and Novo in these matters.
3 So BTA claims to control a party that seemingly doesn't want
4 to be controlled by BTA.

5 **Q. Let's move on to Exhibit 8. Is that just a**
6 **summary of the issues you have been talking about?**

7 A. Yeah, Exhibit 8 -- Exhibit 8 is a conclusion
8 plot, if you will. It just, on the left it shows all the
9 parties that support or don't oppose Novo's application, and
10 as you will see on the right the only party that opposes
11 Novo's application is BTA. So on the left you see the list.
12 It's Mosaic, United Salt Carlsbad, Oxy, Marathon and Concho.

13 **Q. And now, again, COG does not oppose Novo's**
14 **application. COG is the operator of the, the -- what is it,**
15 **the Road Lizard well that's completed in the Second Bone**
16 **Spring; is that correct?**

17 A. That's correct.

18 **Q. And what is Exhibit 9?**

19 A. Exhibit 9 is a summary of communications that we
20 had with Mosaic, United Salt Carlsbad and BTA prior to the
21 November hearing, November divisional hearing, and we have
22 already discussed most of that information in my testimony.
23 So just to be expedient, if I need to go through it all, but
24 for the Commissioner's convenience, if you would like to
25 review it, we wanted to put this together.

1 Q. And let's do a few questions about that. Do you
2 believe that Novo has negotiated in good faith with BTA
3 regarding its well proposals?

4 A. Absolutely, yes.

5 Q. Now, in order to come to an agreement of someone,
6 to use the old saying, it takes two to tango, doesn't it?

7 A. That's correct.

8 Q. And BTA has been pretty intent on simply
9 developing its mile and a half well units by itself. Is
10 that a way to put it?

11 A. That's correct.

12 Q. So if that's the case, if the other party or
13 parties won't negotiate with you, there's not much you can
14 do about that?

15 A. That's right, and the circumstances I mentioned
16 earlier, there is really only one plan that we can use to
17 develop our minerals, and so we had to work with them to try
18 to work out a way to maybe do a trade or something to get
19 them out. Our hands were tied, whereas BTA had more options
20 and they were unwilling.

21 Q. Okay. Now, I will get to some conclusory
22 questions in a minute, but very briefly, Exhibits 12 through
23 22 --

24 MR. BRUCE: -- if the Commission will allow me
25 just to lead the witness a little bit --

1 Q. Exhibit 12, as you've already mentioned is just
2 simply the Bone Spring C-102s?

3 A. That's correct.

4 Q. And Exhibit 13 are the Bone Spring proposal
5 letters?

6 A. That's correct.

7 Q. And Exhibit 14 are the Bone Spring AFEs?

8 A. Yes.

9 Q. And the rest of the exhibits are pretty much the
10 same thing as the prior ones you have just discussed;
11 correct?

12 A. That's correct.

13 Q. And were Exhibits 1 through 9 and -- what would
14 it be?

15 A. Be 11 through --

16 Q. 12 through --

17 A. Or, yeah, 21.

18 Q. -- 20 prepared by you or under your supervision?

19 A. Yes.

20 Q. Okay. And let me again ask you a few questions.
21 Are the AFEs for both the Bone Spring and the Wolfcamp fair
22 and reasonable and in line with similar wells drilled to
23 this depth and length in this area of southeast New Mexico?

24 A. Yes.

25 Q. And again, new AFEs will be prepared before the

1 wells are commenced; is that correct?

2 A. Yes, that's correct.

3 Q. And in your opinion, has Novo made a good faith
4 effort to obtain the voluntary joinder of both BTA and Oxy
5 in its well plans?

6 A. Yes.

7 Q. Do you request that Novo be named operator of the
8 Bone Spring and the Wolfcamp wells?

9 A. Yes.

10 Q. And what overhead rates do you request?

11 A. 8000 a month during operations, and 800 a month
12 while producing.

13 Q. Are those rates fair and reasonable and in line
14 with the costs that Novo and other operators in this area
15 charge for wells of this type?

16 A. Yes, we have pooling orders with identical rates.

17 Q. And would -- and would these be the type of rates
18 you would use in a joint operating agreement?

19 A. Yes.

20 Q. And do you request a maximum cost plus 200
21 percent risk charge in the event the working interest owner
22 goes non-consent in the wells?

23 A. Yes.

24 Q. Some more -- just a few more questions. Has
25 Novo obtained approval of its development area from the BLM?

1 A. Yes, we have. It's -- I have an e-mail from Jim
2 Rutley, mid April of this year, and under the provisions of
3 the secretary's order 3324, the BLM is issuing this
4 development area signed DA 2020023. And it's --

5 (Overtalk.)

6 A. -- 08, 09 development area.

7 **Q. And so, so far as the Bone Spring and Wolfcamp,**
8 **Novo is the BLM recognized operator in the N/2 of Sections 8**
9 **and 9?**

10 A. Correct.

11 **Q. Has BTA's development area been approved?**

12 A. No, it has not.

13 **Q. Has Novo filed APDs with the BLM?**

14 A. Yes, we have.

15 **Q. It takes a little while for those to be approved,**
16 **does it not?**

17 A. Yes, it does.

18 **Q. Under Novo's plans, would BTA receive its**
19 **proportionate share of recoverable reserves under Novo's**
20 **proposed well units?**

21 A. Yes.

22 **Q. And thus its correlative rights would be**
23 **protected; is that correct?**

24 A. Correct.

25 **Q. Now, during the opening argument which I believe**

1 you heard, BTA brought up a well in the Rana Salado area
2 just a few miles to the N, N/W?

3 A. Correct.

4 Q. And that well was supposed to be a 2-mile
5 lateral?

6 A. Yes.

7 Q. And it came up about what, 800 feet short or
8 something?

9 A. I will leave Alex, our drilling engineer, to
10 speak more about that. I don't know the exact footage, but,
11 yes, we stopped short of our projected bottom hole.

12 Q. And the next two witnesses could describe what
13 happened that caused that; correct?

14 A. Correct.

15 Q. Now, does Novo own drilling rigs?

16 A. We don't own drilling rigs, no.

17 Q. Do you just try to contract with drilling rig
18 operators that have a good reputation?

19 A. Yes, we -- Alex Bourland, our drilling engineer
20 who is here today, he worked at Devon and had extensive
21 experience drilling this area and has experience with
22 contracting with rig companies and has good relationships
23 with them, and in our experience we have only used reputable
24 rig contractors, but, yes, that's, that's accurate.

25 Q. Would the same apply to service companies? Novo

1 doesn't own or control service companies that also assist
2 the drilling of the wells, do they?

3 A. That's correct. We do not own the service
4 companies, no.

5 Q. And does, does the same apply to say BTA and
6 Marathon?

7 A. Yes, that's my understanding.

8 Q. And in your wells in the Rana Salado area that
9 BTA raised in its opening argument, who are the other
10 working interest partners of Novo in that area?

11 A. For the (unclear) 234H, it's Oxy who is involved
12 in this case. And then --

13 (Overtalk.)

14 A. Go ahead.

15 Q. Has -- have additional wells been drilled in the
16 Rana Salado area?

17 A. Not yet. This was at the time one of the
18 farthest north Lower Wolfcamp D wells, so our first well was
19 going to put up the (unclear) with the intent of going back
20 and infill drilling to fully develop the reservoir which we
21 are now under contract to do.

22 We actually signed a drilling contract this week,
23 which Alex Bourland can speak more to, but yes, we are going
24 back and fully developing the infill wells for the Lower
25 Wolfcamp in the Rana Salado area.

1 **Q. Has Oxy elected to participate in those with**
2 **wells?**

3 A. Yes. So -- yes. BTA brought up, you know, that
4 the well had stopped short and insinuating that it's Novo's
5 fault, but Novo -- and Alex can speak more to this -- but
6 during the problem that we were confronted with with
7 drilling that well, we were in close communication with Oxy.

8 Oxy agreed that it was the right thing, the
9 prudent thing to do was just to stop short. And that
10 didn't, that problem that was out of our control, that
11 didn't keep them from participating in the subsequent wells,
12 which were proposed after we were confronted with this
13 issue. So obviously Oxy is voting with their dollar that
14 their confidence still in Novo's ability to drill these
15 wells.

16 **Q. And in these particular two cases, Oxy favors**
17 **Novo over BTA proposals?**

18 A. That's correct.

19 **Q. And, in your opinion is the granting of Novo's**
20 **applications in the interest of conservation and the**
21 **prevention of waste?**

22 A. Yes.

23 **Q. Thank you, Mr. Patrick.**

24 MR. BRUCE: Madam Chair, I pass the witness. And
25 I would move the admission of Novo Exhibits 1 through 9, and

1 I think it's 12 through 20.

2 CHAIRWOMAN SANDOVAL: Do you have any objection
3 to the exhibits on behalf --

4 MS. HARDY: No objection.

5 CHAIRWOMAN SANDOVAL: Commissioners?

6 COMMISSIONER KESSLER: No objection.

7 CHAIRWOMAN SANDOVAL: Dr. Engler?

8 COMMISSIONER ENGLER: No, no objection.

9 CHAIRWOMAN SANDOVAL: Okay. We will admit Novo
10 Exhibits 1 through 9 and 12 through 20 into the record.

11 (Exhibits Novo 1-9 and 12-20 admitted.)

12 CHAIRWOMAN SANDOVAL: I think we would like to
13 slightly push up the order and go ahead and do Commissioner
14 questions now. Does the Commission have any questions?

15 COMMISSIONER KESSLER: I do. Good afternoon,
16 Mr. Patrick.

17 THE WITNESS: Hi.

18 COMMISSIONER KESSLER: Hi. I wondered if you
19 have -- and I apologize, I want to make sure that I have an
20 accurate picture of your -- one of the main questions I have
21 is related to the -- a portion in the prior case regarding
22 the exhibits with the spacing unit that would be partially
23 comprised of or would be partially comprised of Novo's
24 proposed spacing unit. Can you address that, please?

25 THE WITNESS: Yeah. So the Second Bone Spring,

1 we haven't proposed Second Bone Spring wells yet, but that's
2 not to say that we're not going to drill the Second Bone
3 Spring. We are -- our technical team sees the value in the
4 Second Bone Spring and other intervals, too, and we have
5 proposed --

6 COMMISSIONER KESSLER: Isn't that part of the
7 depth severance spacing unit?

8 THE WITNESS: Yes, the Second Bone Spring in that
9 depth severance spacing unit that cuts across Section 8, it
10 goes from surface down to part of the Second Bone Spring,
11 but it encompasses part of the producing interval of the
12 Second Bone Spring.

13 And so Novo, to speak more on Novo's plans, Novo
14 has been in communication with Concho for quite some time
15 about acquiring that Road Lizard wellbore. We would like to
16 acquire it and then run a gyro test to see exactly where
17 that wellbore is placed.

18 We have a general idea based on the depth
19 severance and the language that's in that, that was in that
20 lease, so we have a general idea of where that wellbore is,
21 but we would like to run some tests to make sure that we
22 know exactly where it is so we can avoid collision issues.
23 But our technical team would like to still drill
24 perpendicular to that wellbore.

25 That would be our first plan, our Plan A, if you

1 will. We would like to drill 2-mile wells across 8 and 9 in
2 the same fashion that all the rest of our formations are
3 while avoiding that Road Lizard wellbore. As a back-up
4 plan, if that's not, if that's not possible or proves to be
5 too difficult or an unnecessary risk to take, we'll make
6 the prudent choice. And as the back-up plan, we can drill
7 the W/2 of Section 8 with 1-mile laterals in the Second Bone
8 Spring.

9 There is nothing precluding that at all, and
10 1-mile laterals going north-south across the W/2 of Section
11 8 is very doable. So that's our back-up plan. So no matter
12 what, in either event, the Second Bone Spring in the NW/4 of
13 8 that BTA is concerned about, that's going to be developed.

14 COMMISSIONER KESSLER: I think Mr. Bruce asked,
15 what is the status of your BLM permits? They are not yet
16 approved; right?

17 THE WITNESS: They are not yet approved. Like he
18 said, it takes a long time, but we submitted them earlier
19 this year. It's a big priority for us to get those in and
20 drill the N/2 of Section 8 and 9 as soon as possible
21 because, as BTA said earlier in the earlier case, there is,
22 you know, there a parent-child effect, and we want to go in
23 there and mitigate the parent-child effect that the Rana
24 Salado 234H is creating our own mineral.

25 So we understand, we understand there is a

1 parent-child effect, and that's why we are going in there as
2 quickly as possible to drill the Astrodog N/2 as soon as we
3 get those permits in the door.

4 COMMISSIONER KESSLER: Thank you. Maybe I have
5 questions proposed to one of your technical folks, but I do
6 want answers. What is an acceptable amount of dead lateral
7 to drill from the drill island to your proposed interval
8 that you are going to drill in this area? I know it varies
9 by area, I know it varies by economics, I know it varies
10 by -- but I would like some type of answer to that.

11 THE WITNESS: Yeah. I don't think I'm equipped
12 to give you an exact number, but as a general statement, I
13 think our technical team would agree, you want to avoid dead
14 hole when at all possible. And in this circumstance, under
15 Novo's plan, there would be no dead hole. And so under
16 BTA's proposed alternative, there would be dead hole, and we
17 see that as unnecessary. The amount of dead hole that would
18 be acceptable in certain circumstances, I will yield to our
19 technical team on that, and I think it, like you inferred,
20 it would be based on the economics of that particular
21 circumstance. But when you can, you want to avoid dead hole
22 altogether, as a general statement.

23 COMMISSIONER KESSLER: I understand that, but
24 here we do have a particular circumstance that I think -- we
25 can evaluate that. Moving on, what are the size of the

1 drill islands as opposed to the size of the pads.

2 THE WITNESS: They are one and the same. The
3 drill island is the cleared space where you can put a
4 surface location, so it's going to be the same size. After
5 we build the pad and drill the wells, the pads will be
6 reclaimed, so only cover the surface as needed for producing
7 the wells, so they will retreat a little bit, but, in
8 general, they are the same says.

9 COMMISSIONER KESSLER: I know that some of the
10 drill islands in the potash area (unclear) so my question is
11 more along the lines of whether or not more than one will
12 have to (unclear) drill island for the (unclear).

13 THE WITNESS: Not here. So given the number of
14 of wells we plan on drilling, we plan on using all of these
15 drill islands. We are using every bit of the drill islands
16 have been approved. In fact, we'd love to get even more
17 space given the number of wells we plan on drilling, but
18 this is what we're allowed to get.

19 COMMISSIONER KESSLER: Okay. Last line of
20 questions is, why are Novo's proposed calculated costs
21 higher among the (unclear)?

22 THE WITNESS: I'm not sure. We have always done
23 \$8,000 a month, and that's the way it plugs in. I didn't
24 consult Marathon on theirs before we selected ours. We just
25 use the same number that we have used for every pooling

1 prior. If the Commission found that they would rather have
2 7000 a month and 700 a month during production, we wouldn't
3 be opposed to that. We are requesting 8,000 because that's
4 just what we have requested every time and that's what we've
5 been given.

6 COMMISSIONER KESSLER: That's all my questions.
7 Thank you.

8 CHAIRWOMAN SANDOVAL: Dr. Engler, do you have any
9 questions?

10 COMMISSIONER ENGLER: I have just a few. I would
11 like to follow up on Commissioner Kessler's discussion on
12 that Second Bone Spring development. And, you know, we have
13 that Road Lizard, that Concho Road Lizard well, are you
14 aware there is a already a directional survey on that well?

15 THE WITNESS: Yes. Yes, we understand that. We
16 we have been talking to Concho about getting all the data
17 that we can. Whenever we are having our preliminary
18 discussions with our technical team talking about all we
19 would possibly need to identify the wellbore, a gyro survey
20 was talked about, so that's the reason why I mentioned it.

21 Whether we would absolutely need to use that to
22 identify exact location of that wellbore, that, you know,
23 whatever it takes to get the exact location pinned down so
24 that we can avoid that wellbore. And also, we -- I think
25 that what Michael, our geologist, will talk to, is that we

1 do anticipate there is some -- there is going to be some
2 communication with the well that we would drill, or wells
3 that we would drill and that Road Lizard, which is primarily
4 the reason why we want to own the Road Lizard, is that if we
5 are -- if we are causing a detrimental impact to that
6 wellbore, we are doing it to ourselves, not to another
7 party.

8 And so that's -- we understand there would be
9 communication in our, our potential Second Bone Spring wells
10 and the Road Lizard, but that communication would not render
11 the future wells uneconomic to drill. And if we owned that
12 wellbore, there wouldn't be a legal issue or anything
13 putting that at risk.

14 COMMISSIONER ENGLER: I will ask you this
15 question that maybe, again, you can defer to your engineers
16 on this one. It's not just the intersection from the
17 drilling, but you know, these zones are hydraulically
18 fractured significantly. And so, you know, you have the
19 Road Lizard fracture, and then you're going to come across
20 and fracture your proposed well, the question I would pose
21 this as, do you see this as not just a communication
22 problem, but a complete failure of the Road Lizard? And you
23 can defer that to the engineer if you want.

24 THE WITNESS: Yeah, I would like to. I might be
25 out over my area on that one. And our geologist will speak

1 to that as well, so I will (unclear)

2 COMMISSIONER ENGLER: One more question on that.
3 Is there an opportunity or way to, again, this stranded 80
4 acres that was the Second Bone Spring, is there an
5 opportunity or method where again a well could be drilled to
6 capture the reserves when the wells are going north-south?

7 THE WITNESS: Yes. That was our back-up plan
8 that I mentioned. So 1-mile wells in the W/2 of Section 8
9 going north-south is absolutely possible. And we could
10 drill it from that Nido Drill Island, we could drill one of
11 those wells. We can also try to get another drill island if
12 we need to if the BLM is willing because the drill island
13 would be north of that railroad so I imagine that Mosaic and
14 United Salt Carlsbad wouldn't have an issue with it.

15 Once you got far away from the lake, a lot of the
16 hydrology and wildlife concerns are a little bit lightened.
17 So I like to think the BLM would work with us on
18 establishing another shallow drill island, shallow meaning
19 for the Second Bone Spring. And once you have that, you
20 might get into the weeds there, but basically a shallow
21 drill island to be drilled at shallower depths you can get
22 closer to the potash reservoir than the deeper potash --
23 than the deeper all depths drill island.

24 So my point is that we can get closer farther
25 east with a shallow drill island, and you can drill Second

1 Bone Spring wells from a shallow drill island. So I'm
2 confident that we would be able to secure a pad location to
3 drill the W/2 N/S 1-mile lateral to the Second Bone Spring
4 as a back-up plan.

5 COMMISSIONER ENGLER: I have one other quick
6 question. In your testimony you had mentioned multiple
7 times some communication you would be willing to share. I
8 think one was with Mr. Vandercross. I think one was a
9 letter from Oxy. I think you had something from BLM. I
10 guess I will defer to Chair Sandoval, but I would think that
11 that would be good to have those letters.

12 THE WITNESS: Absolutely we can provide those.

13 COMMISSIONER ENGLER: So that's my last question.
14 And again, Chair Sandoval, I just ask whether you would like
15 to have that data. I think that would be worthwhile for the
16 for the record.

17 CHAIRWOMAN SANDOVAL: Would it be possible to and
18 submit it to the Commission (unclear) the same deadline as
19 the Marathon exhibit?

20 MR. BRUCE: Yes, we will do that, Madam Chair.

21 CHAIRWOMAN SANDOVAL: Okay. Great. I do not
22 have any questions. Ms. Hardy, would you like to cross?

23 MS. HARDY: Yes, thank you very much.

24 CROSS-EXAMINATION

25 BY MS. HARDY:

1 Q. Good afternoon, Mr. Patrick.

2 A. Hi.

3 Q. I'm Dana Hardy and I represent BTA. Many of the
4 land exhibits that you provided in Case 21275 overlap with
5 those in 21276; is that right?

6 A. That's correct.

7 Q. So for ease of reference, I will refer to the
8 exhibits in 21275. Does that make sense to you?

9 A. Yes. Would that be Case 2091 -- the same as
10 20916?

11 Q. That's correct.

12 A. Okay.

13 Q. You testified earlier in response to Mr. Bruce's
14 questions and I believe it's also stated in your exhibits
15 that Marathon's proposal here -- I mean, I'm sorry -- Novo's
16 proposal here is the only viable option for Novo to develop
17 this acreage. Is that your testimony?

18 A. Yes.

19 Q. And that Novo's acreage will be stranded without
20 the granting of its applications in these cases?

21 A. That's correct. Yes.

22 Q. And I think you said earlier that you're not an
23 engineer; correct?

24 A. That's correct.

25 Q. And you also mentioned that Novo is willing to

1 drill a kick-out in the south part of this unit, is that
2 correct, to reach its wells?

3 A. Yes.

4 Q. You talked earlier about the approval of Novo's
5 development area. And specifically I think you were talking
6 about that approval in relation to pooling. And isn't it
7 correct that the development area was approved after the
8 pooling order was issued?

9 A. Yes, that's right.

10 Q. And isn't it correct that it was approved because
11 of the pooling order or that it had an impact on it?

12 A. I would say, yes, the BLM observed that, that
13 pooling order. But the BLM is not bound to just go with
14 whatever the NMOCD does. They can make their own decision,
15 and Jim Rutley made the decision in the adjudication to
16 issue that development area, approve our development area
17 after the NMOCD issued its order 21252.

18 Q. But the BLM does take pooling orders into its
19 consideration when it's approving a development area; isn't
20 that correct?

21 A. I can't -- I can't speak for Jim Rutley. I
22 presume that he does. There are instances where there is no
23 pooling involved, and I imagine in that scenario he has to
24 adjudicate on his own.

25 Q. Of course. Mr. Patrick, you testified earlier

1 that Novo's interest is unleased and that Novo doesn't have
2 to pay royalty. Was that your testimony?

3 A. That's correct.

4 Q. But isn't it technically true that Novo Fee
5 Minerals owns minerals and that they are leased to Novo Oil
6 & Gas Northern Delaware?

7 A. That's correct. Yes. We have two entities, yes.

8 Q. And Novo Oil & Gas Northern Delaware does pay a
9 royalty of 25 percent on the minerals; is that correct?

10 A. Yes. And we could just with signing one document
11 internally get rid of that lease if we wanted to. So I
12 guess from a practical standpoint, Novo -- Novo -- these
13 minerals probably should be considered at 100 percent in our
14 interest.

15 Q. But right now there is a lease?

16 A. Technically, yes.

17 Q. Let's look at some of your exhibits. If you
18 could look at Exhibit 4, please, and that's the exhibit that
19 reflects the ownership interest of the parties; is that
20 correct?

21 A. Yes.

22 Q. Do you have that in front of you?

23 A. Yes, I have it.

24 Q. Are you aware -- well, let me ask you this. Was
25 this exhibit prepared based on the situation that existed at

1 the time of the Division hearing?

2 A. Yes.

3 Q. Are you aware that BTA and Oxy entered into a
4 trade of 40 acres from Oxy to BTA subsequent to the hearing?

5 A. No, BTA, never told us that.

6 Q. And wouldn't that document be publicly filed,
7 wouldn't you expect that?

8 A. Sure. And I would also expect that BTA would let
9 us know, but they didn't.

10 Q. And if BTA's ownership increased, that of course
11 would affect what is reflected here; right?

12 A. Absolutely. I'm happy to update that and provide
13 it to the Commissioners if that's something they would like
14 me to do.

15 Q. Let's look at your Exhibit 5. BTA acquired its
16 interest and operating rights under the JOA in November of
17 2018; is that correct?

18 A. Yes.

19 Q. Okay. And Novo acquired its acreage in July of
20 2019?

21 A. That's correct.

22 Q. And Novo was aware of BTA's JOA at the time it
23 acquired its interest, wasn't it?

24 A. Yeah, we were aware that there was a voluntary
25 operating agreement that was out there. We were also aware

1 that this was located within the potash area, so a
2 development area would be required, and we also know there
3 was no development area approved covering anything in
4 Sections 7, 8 and 9.

5 But to answer your question, I guess, yes, we
6 were aware there was a JOA, a voluntary agreement between
7 those two parties covering the N/2 of 7, NW of 8.

8 **Q. Since the acreage was in the potash area, you**
9 **knew of course that there would be development restrictions;**
10 **correct?**

11 A. Yes.

12 **Q. And the risk that those restrictions could impact**
13 **Novo's development was foreseeable, wasn't it?**

14 A. Yes. Yes.

15 **Q. Novo's plan in these two cases gives no effect to**
16 **BTA's operating rights under the JOA. Isn't that correct?**

17 A. Can you repeat that?

18 **Q. Sure. Novo's applications here disregard BTA's**
19 **JOA, don't they?**

20 A. I don't know if that's absolutely accurate, if it
21 disregards it. We were aware there was a JOA. We were also
22 aware that our unit that we wanted to form covering N/2 of
23 8, N/2 of 9 is not covered by a JOA, and therefore we would
24 need to compulsory pool if we couldn't reach a voluntary
25 agreement with the owners in the NW/4 of 8.

1 **Q. Right. But your applications pooled BTA's**
2 **acreaage that's controlled under the JOA; right?**

3 A. I don't know if I can actually make the statement
4 that the N/2 of 7, N/W of 8 is absolutely controlled by that
5 JOA. I think it's subject to a JOA. I think it's also
6 subject to the federal rules in the potash, the secretary's
7 order 3324 that requires a development area.

8 So that wasn't the only box that BTA needed to
9 check. They also needed to check the development area box,
10 which has not been checked. So we knew that there was
11 basically no definite plans on how the acreage in 7, 8 and 9
12 would be developed.

13 **Q. Mr. Patrick, I understand your answer, but my**
14 **question wasn't really about the development area, it was**
15 **pretty straightforward. It was whether BTA's JOA acreage is**
16 **pooled by Novo's application, or that's the request?**

17 A. Yes, that's accurate, yes.

18 **Q. Okay, thank you. If you could please look at**
19 **your Exhibit 6. I'm looking at the first page. Do you have**
20 **it there?**

21 A. Yes, I have it.

22 **Q. Okay. Novo proposed its wells in August of 2019;**
23 **right?**

24 A. That's accurate.

25 **Q. And it had its onsite with BLM in October 2019?**

1 A. Yes.

2 Q. Do you know when BTA had proposed its wells
3 within the Ochoa acreage?

4 A. Now I'm aware based on the previous case. I
5 don't have the exhibits in front of me, but I think that it
6 was in June of '19.

7 Q. Okay. And do you know when BTA had it's onsite
8 with the BLM?

9 A. I don't recall. I was not aware of their onsite
10 at the time of proposing our wells or buying the minerals or
11 establishing our own onsite or development area or any of
12 that.

13 Q. Can you please turn to Page 4?

14 A. Page 4 of Exhibit 6?

15 Q. Yes.

16 A. Titled, Novo and BTA discuss?

17 Q. Yes.

18 A. Okay, yes.

19 Q. Okay. Your second bullet point there highlighted
20 in red says Novo invited BTA to attend the October 24 BLM
21 onsite; is that right?

22 A. That's accurate.

23 Q. And I think you testified about that earlier;
24 correct?

25 A. Yes.

1 Q. Okay. BTA was an affected party that was
2 entitled to notice of Novo's onsite, wasn't it?

3 A. Yes, it was. I put it here under the BTA Novo
4 meeting in OKC just for technical reasons. This invitation
5 to BTA occurred at the BTA Novo meeting in Oklahoma City, so
6 that's the reason why I put it in there.

7 Q. So even -- but BTA was required to have notice of
8 it, you are pointing out here that you also invited them?

9 A. Yes. Just to let them -- just, I guess, to be, I
10 guess, comprehensive.

11 Q. Okay. And do you recall if BTA was actually able
12 to participate in that onsite?

13 A. Yes, they attended.

14 Q. Your bullet point -- let's see. I'm looking at
15 the bullet point where you state that BTA went behind Novo's
16 back, yes, Number 3.

17 A. Yes.

18 Q. And you testified about that earlier?

19 A. Yes.

20 Q. BTA is actually the record title owner of the
21 acreage that would be affected by the drilling island; isn't
22 that correct?

23 A. Yes. I'm not sure what them having title, if
24 that gives them a license to come to an agreement on how we
25 would communicate with the BLM and violate that agreement

1 though.

2 **Q. Do you have any understanding of whether BTA**
3 **believed it was working with BLM on behalf of both parties?**

4 A. I'm not sure. I wasn't part of those
5 conversations, so I can't say. I wish that I could say -- I
6 wish I was part of the conversation to know definitely
7 whether Willis and BTA were working with our best interest
8 in mind, but I gotta have a little bit of doubt whether
9 that's true considering that they felt a need to not include
10 us.

11 **Q. I'm sure Mr. Price will talk about that later.**

12 A. Is that a question? I'm sorry.

13 **Q. No, it wasn't. Thank you. I'm sorry.**

14 **BTA objected to Novo's development area; correct?**

15 A. Yes.

16 **Q. And Novo also objected to BTA's development plan;**
17 **isn't that right?**

18 A. Yes.

19 **Q. Okay. On Page 6 of your exhibit, I think you**
20 **state there again that Novo's plan is the only guaranteed**
21 **path to avoid stranding Novo's 480 acres; correct?**

22 A. Yes. That's accurate. At the time of this -- or
23 at the time I prepared the slide back in November 2019,
24 BTA'S proposed alternative was to move the drill island
25 further east, which was not a viable option. And so between

1 the two options, and knowing that there was, there was no
2 other way to move the pads around given the potash surface
3 constraints, this seemed to be -- and I still stand behind
4 it -- that was the only guaranteed path to avoid stranding
5 our 480 acres of mineral.

6 **Q. Since you are not an engineer, you can't offer**
7 **opinions about whether other opinions would be viable to**
8 **access those wells; is that correct?**

9 A. I can -- I definitely understand where pad
10 locations can go, and I can tell you from my experience
11 these are the only pad locations available. So if we're not
12 able to drill from these pad locations, then our acreage
13 would be stranded, but you are correct, I am not an
14 engineer.

15 **Q. Thank you. And you're not giving opinions about**
16 **any engineering solutions that could exist; is that right?**

17 A. That's correct.

18 **Q. Can you please look at your Exhibit 7?**

19 A. Yes.

20 **Q. And that exhibit discusses Marathon's Valkyrie**
21 **pooling application?**

22 A. Yes.

23 **Q. And those applications have been heard**
24 **separately; right?**

25 A. Yes.

1 Q. And were you present for that hearing?

2 A. For which hearing? I'm sorry.

3 Q. For the hearing on Marathon's Valkyrie pooling
4 application that occurred yesterday and today.

5 A. Yes.

6 Q. And BTA's presented evidence that Marathon's
7 plans will not fully develop this acreage; correct? Did you
8 hear that evidence?

9 A. Can you repeat that? I'm sorry.

10 Q. Did you hear the evidence that BTA presented that
11 Marathon's plans will not fully develop this acreage?

12 A. I heard something to the effect about the S/2
13 NW/4 as to the Second Bone Spring not being developed by
14 Marathon's plan, and I believe I testified earlier in
15 response to the Commissioners' questions about the Second
16 Bone Spring, to, to show that those statements are
17 incorrect. In fact, the NW/4 as the Second Bone Spring of
18 Section 8 will be developed by Novo in the event we are
19 named operator.

20 Q. Well, there is no well proposed in this
21 application that is situated in that area; right?

22 A. Not currently, no, but the fact that we have
23 haven't proposed a well doesn't preclude us from proposing
24 those wells in the future as BTA has also stated in our case
25 against Marathon.

1 **Q. We are here today on the application that**
2 **currently exists; right?**

3 A. That's right. That's why our Second Bone Spring
4 conversation being irrelevant, but I'm happy to speak to
5 them, you know, just because, you know, I want to be open,
6 but our cases today, Novo's cases today are only as to the
7 Third Bone Spring and Wolfcamp.

8 **Q. Thank you. That answers my question. With**
9 **respect to your references to Oxy, I think you said during**
10 **your testimony a few minutes ago that BTA claims to control**
11 **Oxy's interest. Is my understanding of your testimony;**
12 **correct?**

13 A. I said that they claim to control Oxy's interest
14 by virtue of a joint operating agreement, but there is still
15 the need to get a development area approved. In the absence
16 of an approved development area basically renders this, the
17 effect of that JOA, I guess, sort of meaningless.

18 **Q. And I guess my question is, really, isn't it true**
19 **that BTA does control Oxy's interest by contract under the**
20 **JOA? It's not their claim, they actually do. Isn't that**
21 **right?**

22 A. I guess it depends on the definition of control
23 because if they completely controlled it, then Oxy shouldn't
24 be able to support our application and Marathon's
25 application which they have written letters to support us.

1 So it's not complete control. It doesn't get rid of their
2 rights to speak to how they think the acreage should be
3 developed. I think, contractually, yes, the N/2 of 7 and
4 N/2 of 8 covered by a joint operating agreement, all of the
5 interests are subject to that joint operating agreement, but
6 I still reiterate that the non-operating party, Oxy, that
7 BTA claims to control, seemingly doesn't want to be
8 controlled by BTA.

9 **Q. But you understand that under the agreement, BTA**
10 **does control Oxy's interest?**

11 A. I would re -- I still say the same thing. I
12 think, yes, I completely agree with you that the joint
13 operating agreement covers the N/2 of 7, N/W of 8 and that
14 Oxy's interest is subject to that agreement.

15 **Q. Are you aware that Oxy has signed an agreement**
16 **affirming BTA as operator of the JOA acreage?**

17 A. I'm aware that was before the -- before they sent
18 support letters to Marathon and Novo, yes.

19 **Q. And that's a contract; correct?**

20 A. Yes, that's a contract, yes.

21 **Q. Let's look at your Exhibit 9.**

22 A. I'm there.

23 **Q. And with respect to BTA's negotiations with Novo,**
24 **BTA requested to meet with Novo in Novo's offices in**
25 **Oklahoma; isn't that correct?**

1 A. Yes. And we agreed to do that.

2 Q. But BTA's representative traveled to Oklahoma for
3 that meeting; is that right?

4 A. Yes. I suppose we would have also done the same.
5 We would have gone to Midland, it's just he offered to come
6 up here. I'm not sure what the relevance of this travel is.

7 Q. And BTA subsequently offered to meet with BTA
8 again in Oklahoma, didn't it? Do you remember that?

9 A. I do.

10 Q. And Novo declined that meeting; right?

11 A. I believe I stated to Willis that we had
12 conflicts in our schedules and weren't able to meet, and
13 that it was -- now I'm really -- I can't remember exactly
14 when that was. My memory says that it was right before the
15 October onsite, and so I felt like it was just -- I felt
16 like we were going to be meeting, anyway, in person already,
17 essentially.

18 We essentially already had a meeting scheduled
19 for October 24, so an additional meeting prior to that
20 seemed unnecessary, but that wasn't the reason. The reason
21 was we had conflicts in our schedule.

22 Q. You testified earlier in response to some of Mr.
23 Bruce's questions about the Rana Salado well that didn't
24 penetrate the final part of the acreage. Do you recall that
25 testimony?

1 A. Yes.

2 Q. And that well was pooled, wasn't it?

3 A. It was. We subsequently executed a joint
4 operating agreement with, with Oxy.

5 Q. And Novo didn't file a notice with the Division
6 regarding the fact that the well failed to penetrate the
7 last tract, did it?

8 A. We did not. And this is where I guess I would
9 lien on my counsel here. But I'm not sure, is that a
10 requirement if we already had a joint operating agreement
11 that nullifies that order?

12 Q. Well, I think that really my question is just the
13 fact that you didn't didn't file a notice. You didn't;
14 correct?

15 A. I'm not sure if it was required, no, we didn't.
16 I'm not sure if it was required considering we already had a
17 joint operating agreement which under the terms of that
18 pooling order would be nullified by the voluntary
19 joinder -- the voluntary agreement that we got with Oxy.

20 Q. And had Novo notified the Division that the
21 pooling order was terminated and no longer necessary?

22 A. No.

23 Q. Can you pull up BTA Exhibit 35? Do you have that
24 with you?

25 A. I think so. One moment. I will have to reopen

1 it. You said 35?

2 Q. Yes, please.

3 A. I only have 32. Were there additional exhibits
4 that were entered afterwards?

5 MR. BRUCE: Yeah.

6 Q. No. These were all submitted at the same time.

7 MR. BRUCE: Mr. Patrick and Ms. Hardy, I correct
8 you. These were provided a day or two later, and I e-mailed
9 them to Mr. Patrick. He might not have downloaded them.
10 That's all.

11 A. I'm pulling them up. Okay. Yes. I am opening
12 it up right now. Okay.

13 Q. Okay.

14 A. 30 -- okay, I'm at 35.

15 Q. Okay. And that is the pooling order in Case
16 Number 16286; correct?

17 A. That's correct.

18 Q. And that order was issued in November of 2018; is
19 that right?

20 A. That's right.

21 Q. And in Paragraph 7H of that order, there is a
22 statement that, it looks like a statement that has been made
23 by Novo that was proposing to drill the wells back to back
24 and complete simultaneously. Do you see that?

25 A. Yes. I believe that was at the request of our

1 COO who testified yesterday, yes.

2 Q. And Novo has spudded the Rana Salado 234H; right?

3 A. That's correct.

4 Q. And was that in July of 2019?

5 A. I think that's right, yes.

6 Q. And it hasn't spudded the 214H which is the other
7 well covered by that order; is that right?

8 A. I'm not actually sure because we're in -- you
9 are catching us on the week that we actually signed the rig
10 contract, so we might actually have a spudder rig out there
11 right now. I think you have to ask our drilling engineer.

12 Q. Okay. So as far as you know, there is no notice
13 filed with OCD at this point that the well has been spudded;
14 is that right?

15 A. I don't think so, but I would ask our drilling
16 engineer, Alex.

17 Q. Can you look at BTA Exhibit 36, please.

18 A. Yes, I'm there.

19 Q. And is that a copy of the Division's pooling
20 order in Case 16282.

21 A. Yes.

22 Q. And that order was issued on February 21 of 2019;
23 is that right?

24 A. It appears so. Well, yeah, May 29. Is that what
25 you said?

1 Q. I think I said February, but is it May?

2 A. I think it says, now on this 29th day of May
3 2019.

4 Q. The order in Paragraph 5 required Novo to
5 commence drilling within one year of the date of the order
6 unless an extension was granted; right?

7 A. That's right.

8 Q. And the order pools the Bone Spring formation for
9 the Rana Salado 0504 134H; correct?

10 A. That's right.

11 Q. And has Novo spudded that well?

12 A. No, but we did expand the contract area of our
13 JOA with Oxy to include the Third Bone Spring. It actually
14 includes all the Bone Springs, so this order is also
15 nullified by that JOA.

16 Q. Has Novo filed any notice with the OCD stating
17 that the order was nullified and unnecessary?

18 A. No.

19 Q. Can you please look at BTA Exhibit 34?

20 A. Yes, I'm there.

21 Q. Is that a copy of May 4th, 2020, e-mail from Cory
22 Walk to Dean McClure at OCD?

23 A. Yes.

24 Q. And Cory Walk is Novo's consultant?

25 A. Yes.

1 Q. And he's a permitting consultant?

2 A. Yes.

3 Q. And Mr. Walk stated in that e-mail that Novo
4 doesn't plan on drilling any of the Bone Spring wells on
5 this pad any time soon; is that right?

6 A. Yeah, I wouldn't say that's necessarily an
7 accurate statement. Cory is not an employee of Novo. He
8 doesn't have access to our internal plans. He is not part
9 of those conversations.

10 Frankly, as far as the regulatory consulting
11 goes, I believe that he is one of the staff level that we
12 don't -- I think there are permitting guys here that the
13 landman, he communicates with him trying to get APDs filed,
14 but I don't think that he would have -- I know Cory wouldn't
15 have access to our development plans.

16 Q. But he was authorized on behalf of Novo to send
17 an e-mail to OCD about the status of the wells, wasn't he?

18 A. Yes.

19 Q. Okay. And the Bone Spring wells that he is
20 referencing, would those include the Rana Salado Fed Com
21 0504 134H that had been pooled in Order 20567?

22 A. Well, I can't necessarily even agree with this
23 statement, so I'm not -- I wasn't part of their
24 communication. I can't speak to his intent.

25 Q. Okay. And can you determine from his e-mail

1 **which wells he is referring to? Well, he refers right there**
2 **to 0504 234H and 214H, doesn't he**

3 A. Yes, he does.

4 Q. And then he was talking about other Bone Spring
5 wells on that pad; correct?

6 A. Yes.

7 Q. Okay. And he stated they don't plan on drilling
8 any time soon; right?

9 A. Yes. And, again, I can't speak to the accuracy
10 of that statement. He wouldn't necessarily have the
11 information for that necessarily to be true.

12 Q. Do you still use Mr. Walk as your consultant for
13 permitting?

14 A. Yes. We, we cut back on him or on using Permits
15 West entirely. We do a lot of it in-house as well.

16 Q. But at this point, he was your authorized
17 consultant?

18 A. He was working for us, yes.

19 MS. HARDY: I think those are all of my
20 questions. Thank you.

21 MR. BRUCE: I do have a few follow-up questions,
22 Madam Chair.

23 CHAIRWOMAN SANDOVAL: Please proceed.

24 REDIRECT EXAMINATION

25 BY MR. BRUCE:

1 Q. Mr. Patrick, let's get back, one of the questions
2 about the Rana Salado 0504 Well Number 234H, actually Novo
3 filed, and it's part of its Exhibit 33, BTA Exhibit 33,
4 filed an as-drilled C-102; right?

5 A. Yes.

6 Q. So they did report back to the OCD on that, on
7 that well?

8 A. It appears so.

9 Q. And the com agreement for that well would still
10 cover that 40 acres with BLM approval that the wellbore
11 didn't touch; is that correct?

12 A. That's correct.

13 Q. And there was some questions about the drill
14 island -- you answered some questions that you would like
15 even more drill islands out here because of the number of
16 wells you are going to drill. Because of the number of
17 wells you need to drill, you think there will be full use of
18 the surface facilities or of the drill islands for Novo's
19 surface facilities. Is that a fair statement?

20 A. That is, yes.

21 Q. And is that one of the reasons that in that
22 development area the BLM has only one operator, so there is
23 no conflict --

24 A. Yes.

25 Q. -- in those facilities?

1 A. Yes, that's my --

2 Q. And then you talked about stranded acreage in
3 response to Ms. Hardy's questions. I suppose one thing that
4 maybe should be clarified or brought up is you're drilling
5 from the NW/4 of Section 8 east over to Section 9. What
6 about drilling from the east side of Section 9, west of
7 Section 8, what is the problem there?

8 A. That's just not possible. I mean, it's so deep
9 in the potash area that there's absolutely no hope of
10 getting a drill island over there, not to mention that I
11 believe all of 9 is under water or practically all of 9 is
12 under water.

13 Q. Okay.

14 A. It's just not feasible.

15 Q. Okay. Now, Ms. Hardy also asked you could potash
16 restrictions affect Novo's development. That's a fair
17 statement, of course; correct?

18 A. Yes.

19 Q. But it could also, the potash restrictions could
20 also affect BTA's development; is that correct?

21 A. Yes. And their acreage in the N/2 of 7, N/W of 8
22 is within the designated potash area, therefore it's subject
23 to that secretary's potash order 3324.

24 Q. And then finally, it's not disputed that Oxy's
25 interest is subject to the BTA operated JOA. Would you

1 **agree with that?**

2 A. Correct.

3 **Q. Does that prevent Oxy from joining in a well that**
4 **includes acreage outside of BTA's JOA?**

5 A. It does not, and that's one of the reasons why I
6 refrain from making those very broad brush statements that
7 Oxy's interest is just in general controlled by BTA.

8 **Q. Thank you, Mr. Patrick, that's all I have.**

9 MS. HARDY: Madam Chair, I apologize, I intended
10 to ask the Commission to take administrative or admit BTA
11 Exhibits 34 through 36 since they were taken from Commission
12 records or Division records.

13 MR. BRUCE: I have no objection.

14 CHAIRWOMAN SANDOVAL: Do the Commissioners have
15 any objections?

16 COMMISSIONER ENGLER: No objection.

17 CHAIRWOMAN SANDOVAL: 30 -- was it 34 through 36?

18 MS. HARDY: That's correct.

19 CHAIRWOMAN SANDOVAL: Are admitted into the
20 record.

21 MS. HARDY: Thank you.

22 (Exhibits BTA 34 through 36 admitted.)

23 CHAIRWOMAN SANDOVAL: All right. Mr. Bruce,
24 would you like to call your next witness?

25 MR. BRUCE: Okay. Hold on a second.

1 CHAIRWOMAN SANDOVAL: Court reporter, do you need
2 a break?

3 REPORTER: I'm okay for now.

4 MR. BRUCE: A five-minute break would be fine
5 with me.

6 CHAIRWOMAN SANDOVAL: Okay. Let's come back at
7 2:55.

8 MR. BRUCE: Thank you.

9 (Recess taken.)

10 CHAIRWOMAN SANDOVAL: It's 2:57. We are going to
11 get started again. Mr. Bruce, would you like to call your
12 next witness.

13 MR. BRUCE: Yes. I call Michael Hale, Novo's
14 geologist.

15 MICHAEL HALE

16 (Sworn, testified as follows:)

17 DIRECT EXAMINATION

18 BY MR. BRUCE:

19 Q. Again, Mr. Hale, would you please state your name
20 and city of residence?

21 A. Yes. Michael Hale, Oklahoma City.

22 Q. Who do you work for and in what capacity?

23 A. I'm the vice president of geoscience and
24 exploration for Novo Oil & Gas.

25 Q. Have you previously testified before the

1 **Division.**

2 A. I have.

3 **Q. And were your credentials as an expert petroleum**
4 **geologist accepted as a matter of record?**

5 A. They were.

6 **Q. Have you testified before the full Commission**
7 **before?**

8 A. I have not.

9 **Q. Would you summarize your educational and**
10 **employment background?**

11 A. Yes. I have a bachelor's and masters of science
12 in geology from East Carolina University. I have 13 years
13 of experience in oil and gas. I started my career as a
14 consultants called Frontier Geoscience. I spent a little
15 less than two years there. Then I went to work for
16 Sandridge Energy in Oklahoma City. I was there for about
17 three and a half years working their Permian Basin assets.

18 From there I went and worked for Assent
19 Resources. At the time it was American Energy Partners, it
20 became Assent Resources. I was there for a little over five
21 years, and for the last two years I have been with Novo.

22 **Q. Does your area of responsibility at Novo include**
23 **this area of the Permian Basin in southeast New Mexico?**

24 A. It does.

25 **Q. And are you familiar with the geologic matters**

1 involved into these two applications?

2 A. I am.

3 Q. And you have two exhibits. I believe they are
4 Exhibits 10 and 21.

5 A. Yes.

6 Q. And are they basically identical?

7 A. Yes, they are identical.

8 Q. And did you prepare those or were they prepared
9 under your supervision?

10 A. I prepared them.

11 Q. Let's go through them, and they are marked in the
12 lower right-hand corner by page number. If you could go to
13 Page 1 on Exhibit 10 and discuss that for the Commissioners.

14 A. Yes. What you are looking at on Page 1 is an
15 area map, so location map showing the location of the
16 Astrodog Fed Com (unclear). That is indicated in a dashed
17 navy blue outline and the approximate location of the
18 proposed wellbores is located in red dashed lines.

19 What you will see in the call-out box attached to
20 that is a bunch of names and numbers. I will try to explain
21 what those mean. This was in an effort to simplify things.

22 It says Astrodog Fed Com 0809 131H, 211H, 221H
23 and 231H, just for the first line. This will apply to all
24 of these. The 130 series refers to the Third Bone Spring
25 sand. The 210 refers to the Wolfcamp XY or the uppermost

1 Wolfcamp interval just below the Third Bone Spring.

2 The 221 refers to the Wolfcamp A, and the 231 or
3 the 230 series refers to the Wolfcamp B or the Lower
4 Wolfcamp interval. And so each one of these, that's what
5 it's referring to. It's an approximate location for all of
6 those different benches.

7 What you can also see on the map is color coded
8 sticks. Those colors refer to different productive
9 horizons. So the green bubbles at the end of the sticks
10 would indicate a Wolfcamp B producer.

11 What's come up a couple of times during this
12 hearing is that directly north of the Astrodog unit, Novo
13 drilled Rana Salado Fed Com 0504 234H, so that is the
14 wellbore, the producing wellbore just north of the Astrodog
15 unit.

16 To the south of the Astrodog unit you can see the
17 three Huran Ranch Fed Com wells. The 2, 3 and 4H wells.
18 Off to the west I have the El Torro Invicta and El Torro
19 Gigante, those were drilled by (unclear) and those are a
20 Wolfcamp XY and Wolfcamp B well.

21 And then to the south I have the RB wells which
22 are Wolfcamp A and XY producers drilled by Chevron, and I
23 also have the Cyprus 3310H which is a Third Bone Spring
24 producer.

25 So the whole idea of this map is just to acquaint

1 you with the location of this and then also give you an idea
2 about what has been producing in the interval and what
3 intervals have essentially been derisked.

4 Q. Okay. Are you through with that page?

5 A. Yes.

6 Q. Move on to Page 2, please.

7 A. Okay.

8 Q. So what Page 2 is showing is a block diagram
9 showing our full proposed -- our proposed development plan
10 as it relates to this hearing. The -- you can see that the
11 block diagram has a dashed green line that goes down and
12 separates it, and it shows the N/2 of Sections 8 and 9, that
13 is the Astrodog unit that we are referring to today. And
14 then you can see there is also a S/2 of 8 and 9. I wanted
15 to show you what our full development plan looks like, but
16 really either one of these will work just fine since they
17 were identical.

18 Also to the right I have a corresponding type
19 log, and that type log is just south of the proposed unit in
20 the same section, Section 8. And so it's very proximal and
21 is a very good indicator of what a reservoir quality would
22 look like.

23 I do also note on there there is a dashed red
24 line that cuts below the Second Bone Spring Sand interval,
25 that is the depth severance at 8773 TBD, and that is in

1 reference to the depth severance related to the producing
2 Road Lizard well that was drilled by Concho.

3 I have also indicated on there in black dots with
4 a blue ring around them the proposed wellbores as they lie
5 within the productive intervals, and then you can see the --
6 sorry -- the interval thicknesses of the frac barriers. So
7 the frac barriers are identified and then the thicknesses of
8 those frac barriers are also listed.

9 Q. Okay. And we'll get back to some of this again.
10 Have you refer back to this exhibit. What are Pages 3
11 through 6?

12 A. So Pages 3 through 6 are showing structure maps,
13 subsea structure maps of the Third Bone Spring, the Wolfcamp
14 XY, Wolfcamp A, and Wolfcamp B respectively. The first
15 three maps all are done showing -- actually, I want to make
16 sure that's right. Yes. There is, the first three maps are
17 all on 25-foot contour intervals. Page 6, which is the
18 Wolfcamp B map, was done on 20-foot contour intervals. That
19 was not intentional. My desire to be consistent was
20 apparently ill-fated.

21 But you can see the structure contours show a
22 gently dipping structure to the east. Also on there, I have
23 shown as red plusses, those are the wells that were actually
24 incorporated into making this structure map.

25 And then the magenta numbers on there are showing

1 the depth at which that structural horizon was encountered.
2 So you can see in the vicinity of this there is a lot of
3 data and very high confidence that this is an accurate
4 structure map.

5 The main takeaway from this is that there are no
6 structural impediments. We don't see any major geohazards
7 or anything like that in the subsurface.

8 **Q. So this area is suitable for horizontal**
9 **development?**

10 A. Yes, absolutely.

11 **Q. And what is Page 7?**

12 A. Page 7 is showing a stratographic cross section
13 bringing in three wells. The three wells going from left to
14 right or west to east would be the HF 7 Fed Com 1, which is
15 actually an Ochoa type log.

16 The Teledyne 8 Gas Com 1 and Teledyne 4 Gas Com 1
17 are both essentially straddling the Astrodog unit or give a
18 good indication of both the west and east sides of the
19 Astrodog unit, and those would be considered type logs for
20 the Astrodog.

21 **Q. And do these well logs accurately represent the**
22 **Bone Spring and Wolfcamp zones in this area?**

23 A. Yes, they do.

24 **Q. And are the Bone Spring and Wolfcamp zones in**
25 **this area continuous across the proposed well units?**

1 A. Yes. They are continuous, but I think it's worth
2 pointing out they are not necessarily consistent in their
3 reservoir quality.

4 One, I would say the Wolfcamp XY and the Third
5 Bone Spring are relatively consistent going from west to
6 east. But I would point out that the Wolfcamp A, which is
7 the third target horizon down, so you can have targets
8 labeled on the left hand margin of this, in that interval,
9 co-developed interval that is starting from the top target
10 down, that's the Third Bone Spring Wolfcamp XY and the
11 Wolfcamp A, that is a co-developed interval -- it should be
12 a co-developed interval because there is one flow unit, and
13 there are no frac barriers in there to prevent a reservoir
14 degradation if you drilled one without drilling the others.

15 What I want to point out is using the third
16 horizon down, which is using the Wolfcamp A, you can see at
17 a depth of about 9900, between 9900 and 10,000 feet on the
18 left log, which is the Ochoa well, there is a 70-foot thick
19 low porosity interval, and that is massive limestone.

20 I have done extensive mapping of carbonated
21 debris flows in this area, and just to the west of the
22 Astrodog unit there a massive carbonate debris flow.

23 It actually reaches over 100 feet thickness just
24 to the west of the Valkyrie, but in the Ochoa, it is still
25 present and still about 70 feet thick. Because this is

1 thick it really means that it's not a very good interval for
2 BTA to try and develop.

3 So obviously BTA is not proposing wells in the
4 Wolfcamp A, they are really only recommending drilling wells
5 in the Wolfcamp XY, which makes sense because their Wolfcamp
6 A doesn't look very good.

7 But as you can see going from west to east into
8 Novo's acreage, that first -- the second log, which would
9 be the log, that first log of the Astrodog unit, that
10 limestone essentially disappears. It goes down to about
11 maybe 15 feet thick, and it's really no longer much of a
12 frac impediment.

13 The interval that we want to target is just below
14 that about 2 percent average porosity. So we feel confident
15 that we can target that and we would have a 200 foot
16 interval before we would encounter the next target, which
17 would be the XY.

18 The point I'm trying to make here is by doing
19 this, we are actually bringing in inferior reservoir from
20 the Ochoa unit. In a lot of ways this is a way to develop
21 acreage that the Ochoa unit would not capture on its own.
22 So we are actually, I think, doing a good service in that we
23 are going to produce reservoirs that they would not produce
24 otherwise.

25 Q. And, again -- go ahead. Go ahead.

1 A. No, I'm not sure where I was going with that
2 thought.

3 **Q. But again, the Third Bone Spring, the Wolfcamp XY**
4 **and Wolfcamp A, in your opinion, should be co-developed?**

5 A. Yes. It should be, and there is ample evidence
6 to suggest that this is really a must-do unless you want to
7 have reservoir designation by coming in later and trying to
8 infill.

9 This is just the industry standard now. You
10 basically see that any time somebody drills wells, they
11 essentially co-develop these intervals. There are various
12 ways in which the intervals are co-developed, and I think
13 there is still some debate about what the proper number of
14 wells to actually permit is or to develop this, and of
15 course that's going to be entirely contingent on commodity
16 price.

17 But there are various tests that are taking place
18 just in our township and range, so in 23, 29, there are
19 various tests that are all co-developing this interval, all
20 with various numbers of wells. So I think the most notable
21 one would be XTO Remuda well which is located in southeast
22 corner -- or, I'm sorry, the Remuda unit located in the
23 southeast corner of 23, 29, they are actually putting in
24 eight wells per half section, testing two different benches
25 in the Wolfcamp A, one low in the A, one high in the A, one

1 in the Wolfcamp XY, and one in the Third Bone Spring. So
2 four separate benches with all three horizons all
3 co-developed. And they actually have eight -- they have 16
4 wells producing in that unit, but eight wells per half
5 section.

6 Also Blue Seal, which is Marathon, they are
7 drilling seven wells per section co-developing the Wolfcamp
8 A and the Wolfcamp XY. Sorry, I have a list here of all the
9 different tests. I'm sorry, no Blue Seal, Marathon Blue
10 Seal has eight wells per section, so four wells per bench.
11 Wolfcamp A and XY.

12 Devon Spud Muffin which is in the southwestern of
13 corner of 23, 29, they have once again seven wells between
14 the Wolfcamp A and XY, approximately three and a half wells
15 per half section, testing two separate benches.

16 And Mewbourne is doing six wells using three per
17 half section.

18 I think you can look at what we are doing and
19 saying we are being a bit overly aggressive, but what we are
20 trying do is be prudent, and there is three lines of logic
21 behind this.

22 One is, you know, we are paying very close
23 attention to all the various spacing tests going on in our
24 township and range; two, we have a lot of non-op working
25 interest in some of those wells, or we have actually traded

1 for those wells and we have good production, so we know
2 exactly what they are producing; three, because we have
3 incredibly high nets, that actually gives us a little bit
4 more -- there is a little bit more impetus on us to make
5 sure we capture everything because we are paying ourselves,
6 when we develop those wells, so we want to be a little bit
7 aggressive.

8 Whether or not we drill all nine of those wells,
9 that's up for debate. Things have obviously changed in the
10 last few months and commodity prices have definitely fallen,
11 but at the time -- at the time these were permitted, nine
12 definitely seemed reasonable to us.

13 We don't necessarily feel that nine is
14 unreasonable now, but we would probably pay a little more
15 attention to how many we actually did.

16 And then finally, the fact that it takes a really
17 long time to permit these wells, meaning, it actually
18 behooves us to be aggressive up front and permit the maximum
19 number that we can reasonably expect to drill, because if we
20 get to a situation where -- I mean, in the same way that we
21 have this unpredictable event happen with pandemic and oil
22 prices went to negative \$47 dollars, what if we had a
23 horrible hurricane just this month.

24 A lot of meteorologists are actually predicting a
25 very bad hurricane season this fall. What if we had a

1 horrible hurricane and would up taking out multiple
2 refineries in the Houston area? You could wind up with a
3 price surge in oil, and then everyone would want to be
4 drilling wells and we would be incredibly happy that we had
5 those additional permits in hand. So in a --

6 **Q. And you --**

7 A. I'm sorry.

8 **Q. No, go ahead.**

9 A. I'm just saying, a lot of this is based off the
10 idea that, you know, we are trying to be prudent and we want
11 to be absolutely prepared for any scenario.

12 **Q. So what you are saying is Novo is not going to**
13 **over-develop the reservoir; correct?**

14 A. Correct. What I want to say is --

15 **Q. But you wanted to have the -- you want to have**
16 **the flexibility to have the permits there to take advantage**
17 **of what you are discovering in these nearby newer wells that**
18 **are showing that co-development is necessary?**

19 A. Absolutely.

20 **Q. Also looking at the cross section, when you are**
21 **looking at the Wolfcamp B, there is a frac barrier between**
22 **that and the Upper Wolfcamp zones; is that correct?**

23 A. Yes, that's correct. There is approximately a
24 300-foot thick high clay interval. The clay contrasts from
25 within the productive interval of Wolfcamp B to that

1 interval that we call the frac barrier, the Upper Wolfcamp B
2 shale, that increases about 20 to 25 percent in the amount
3 of clay, and it represents a very plastic barrier. And so
4 we have not seen any evidence that we are getting fracs
5 either through that or that they stay open afterwards, so we
6 feel that that is a very confident frac barrier.

7 **Q. And insofar as drilling, I think Mr. Patrick**
8 **referred to this, but you are recommencing drilling in this**
9 **area, are you not?**

10 A. Yeah. We are -- we are going to spud sometime in
11 the next week the first of four guaranteed wells. But as --
12 our plans within Novo are to keep this rig running
13 indefinitely with the hopes of picking up a second rig
14 sometime soon. You know, we had plans to drill 12 wells
15 this year.

16 The success of our two Rana Salado wells, we were
17 just incredibly excited, and we couldn't wait to drill more,
18 and if it weren't for the pandemic, we would still
19 be drilling. I think it's incredibly telling that despite
20 the fact that almost every other operator, with the
21 exception of BTA, they are still running rigs, but almost
22 every other operator is still not drilling.

23 And from all the conversations we have had with
24 our peers, they don't have any intention to drill until the
25 first quarter of 2021, and Novo is putting a rig on the

1 ground with hopes of even adding a second potentially.

2 Q. And looking at the development, you just
3 mentioned the Rana Salado were successful wells.

4 A. Yes.

5 Q. And in a minute I will ask you about that, but
6 that includes the well that stopped a few hundred feet short
7 of its target; is that correct?

8 A. That is correct, yes, the 234H, the one directly
9 north of the Astrodog 08-09 unit, yes.

10 Q. And the -- well, let's get on to the depth
11 severance for a second. Mr. Patrick mentioned the depth
12 severance in the Road Lizard well. Could you address that?

13 A. Yes. So that depth severance at 8773 is located
14 just below the base of the Second Bone Spring, and if you
15 were to -- if we were to go back real quick to Exhibit 10,
16 Page 2, the block diagram, what you would see on there is
17 that I have the frac barriers labeled, and between the Third
18 Bone Spring and the Second Bone Spring, we feel very
19 confident that that is a frac barrier, not just because it's
20 840 feet thick, but also because the uppermost 350 feet of
21 that interval are really just entirely a porous limestone.
22 I mean, that calculates at basically between zero and one
23 percent, and that's about as confident of a frac barrier
24 that you can expect to get.

25 Q. So there is not going to be any interference with

1 **between your Third Bone Spring completions and the Road**
2 **Lizard Well?**

3 A. What I would say, if there is any interference,
4 it is entirely unforeseeable.

5 Q. And then looking at the cross section, would you
6 anticipate each well, for the Bone Spring wells, each
7 quarter-quarter section in a well unit, or in the Wolfcamp,
8 each quarter section in the well unit to contribute more or
9 less equally to production from a geologic standpoint?

10 A. Yes.

11 Q. And let's get into that just briefly, the -- the
12 Rana Salado 234.

13 A. Yes.

14 Q. And I don't know if this is better for you or for
15 Mr. Bourland next, but do you have a basic knowledge of what
16 happened that caused the well to be cut short, so to speak?

17 A. Yes, I do.

18 Q. Could you explain that to the Commissioners.

19 A. Yes. So what had happened was, as Brandon
20 Patrick, our VP of land already mentioned, we use reputable
21 companies. Most of the companies we use come because we
22 have prior working relationships with them where they have
23 come highly recommended.

24 Well, the drilling company that we used had very
25 good ratings, but one of their rig hands accidentally left

1 the orbital valve closed when we returned to drilling, so
2 what happened was pressure built up within the reservoir and
3 actually wound up fracking the reservoir.

4 So while we were drilling, I'm sure that Britton,
5 Mr. McQuien, sorry, could testify to this, but the Lower
6 Wolfcamp is an incredibly impressive reservoir with respect
7 to its pressure because of how much gas is in place in that
8 reservoir, and while we were drilling, we were taking
9 pressure spikes from that reservoir that we couldn't counter
10 balance because of the mistake made by the rig hand in
11 fracking the reservoir, which meant we were simultaneously
12 taking losses.

13 So we found out ourselves in a very dangerous
14 position based off of a mistake made by a contractor, and we
15 had to -- we took it as far as we absolutely could. And we
16 were starting to get to the point where we were seeing
17 significant pressure spikes at surface. So the first thing
18 we did, we called Oxy, who was our working interest partner
19 on that well, and we had a discussion with them about what
20 was the best course of action. And Oxy absolutely agreed
21 with us that we should go ahead and cut that well short and
22 we would capture the reserves on the next wellbore, and so
23 that's what we did.

24 **Q. So that's not going to, the 234H, the Rana Salado**
25 **is not the only well that you are going to use to test that**

1 **zone in that unit?**

2 A. Not at all.

3 **Q. Okay. I think you already touched on this, but**
4 **you are proposing three wells per spacing unit per**
5 **productive interval.**

6 A. Yes.

7 **Q. From what you know right now, does that look**
8 **right?**

9 A. For the most part, yes. What I would say is, as
10 I mentioned earlier, we are constantly monitoring offsetting
11 spacing tests. Based on the fact that Tap Rock has been
12 testing two horizons within the Lower Wolfcamp, and also
13 Devon has in the Spud Muffin test, both of these units are
14 located within the same township and range, 23-29 South,
15 just a few miles south of the Astrodog unit, we have been
16 considering permitting additional wells within the Lower
17 Wolfcamp flow unit, actually very similar to what BTA has
18 proposed.

19 **Q. Would you, looking at the Astrodog well units,**
20 **how do you plan on developing them?**

21 A. We would drill the deepest horizon first. We
22 think it's a responsible move to work our way up from the
23 bottom, and largely that's because it reduces the risk of
24 mechanical complications later.

25 So, for example, if we were to go in right now

1 and drill up the Wolfcamp A, XY and Third Bone Spring, you
2 would have a very large, you know, 700-foot thick flow unit
3 that would be largely depleted.

4 And if you tried to drill through that interval
5 later, you would have very high risk of taking losses on
6 your drilling mud, you basically create a very dangerous
7 situation for yourself, or you could create a very dangerous
8 situation for yourself.

9 So instead, we think it's prudent to start with
10 the lowest intervals, produce those, and work our way up.
11 I'm under the assumption that BTA agrees with us on that
12 because they have a very similar plan.

13 **Q. Now -- and then let's get back to this, just --**
14 **just once again. Why, in your opinion, should the Wolfcamp**
15 **A, Wolfcamp XY and the Third Bone Spring be co-developed?**

16 A. They should be co-developed because if you
17 selectively drill a few wells within those horizons, any
18 well that you come in and complete later will have
19 diminishing returns. It just is -- it's just the reality of
20 this. How much degradation those wellbores see is really a
21 function of time, but still, you will see some, some
22 reservoir degradation as a function of pressure depletion
23 within the reservoir.

24 **Q. What people have referred to in the prior hearing**
25 **as the parent-child relationship?**

1 A. That's correct, parent-child relationship.

2 **Q. In your opinion, is the development plan proposed**
3 **by Novo superior to that proposed by BTA?**

4 A. I do. I definitely think it's -- it is with
5 being able to sequester as much hydrocarbons as we possibly
6 can, whereas I think BTA's plans to do it with two wells is
7 leaving a lot on the table.

8 (Overtalk.)

9 **Q. Okay. In your opinion is the granting of Novo's**
10 **applications in the interest of conservation and prevention**
11 **of waste?**

12 A. Absolutely.

13 MR. BRUCE: Madam Chair, I'd move the admission
14 of Exhibits 10 and 21.

15 MS. HARDY: No objection.

16 MR. BRUCE: And I would pass the witness.

17 CHAIRWOMAN SANDOVAL: Any objection from
18 Commissioners.

19 COMMISSIONER ENGLER: No objection, and for the
20 record, we didn't objection or no objection to Mr. Hale
21 being an expert, so I have no objection to that, either.

22 THE WITNESS: Thank you. I appreciate that.

23 CHAIRWOMAN SANDOVAL: Ms. Hardy, do you have any
24 objections to Mr. Hale being designated as an expert?

25 MS. HARDY: No, I don't.

1 CHAIRWOMAN SANDOVAL: I'm sorry, after the fact,
2 Mr. Hale is an expert in the field. And Novo Exhibits 10
3 and 21 are entered into the record. Ms. Hardy, would you
4 like to cross.

5 (Exhibits Novo 10 and 21 admitted.)

6 MS. HARDY: Yes. Thank you very much.

7 CROSS-EXAMINATION

8 BY MS. HARDY:

9 Q. Good afternoon, Mr. Hale.

10 A. Good afternoon.

11 Q. I'm Dana Hardy, and I represent BTA, and I have
12 some questions for you.

13 A. Okay.

14 Q. On your Exhibits 10 and 21, can you identify the
15 wells that Novo has drilled and completed?

16 A. Yes. So on Exhibit 10 and 21, Page 1, the two
17 wells that Novo has drilled and completed are the two wells
18 located directly north of the Astrodog proposed units. So
19 those are the Rana Salado Fed Com 0605 231H and Rana Salado
20 0504 234H.

21 Q. Okay. On all of these pages, those are the two
22 that Novo's drilled and completed?

23 A. Yes, correct. We drilled an additional well off
24 to the west which was the (unclear) 214H, which is literally
25 just off of this map to the west by one section. It's

1 located in Section 4 and 9, north to south, but we did not
2 complete that. We are actually -- we already have a frac
3 crew lined up to complete that very soon.

4 **Q. Okay. Do you have in front of you or available**
5 **to you BTA Exhibit 33? That's the C-102 as-drilled for the**
6 **Rana Salado Fed Com 0504 234H?**

7 A. Apparently not. Let me see if I can get it here.
8 Sorry, the exhibit that I have from BTA goes up to
9 Exhibit -- what is it -- 32. So it literally stops right
10 there. So it was probably the one we were referring to
11 earlier where you sent it and we probably did not download
12 it, so there is a few pages missing.

13 **Q. That's perfect. I did sent it a day later, I**
14 **believe.**

15 A. Let's see. I don't have it right in front of me.
16 CHAIRWOMAN SANDOVAL: Is it possible for you to
17 share your screen?

18 A. Yeah, is it possible?

19 **Q. Sure. Let me do that.**

20 A. Thank you.

21 **Q. Sure.**

22 A. And I do apologize for that. I hate to be
23 unprepared.

24 **Q. Take me one second to get to it here.**

25 A. Sure. No problem.

1 Q. There. Can you see it?

2 A. It's coming up. Yeah, I can.

3 Q. Okay. Okay. So is that a copy of the C-102 for
4 the Rana Salado 504 234H that we were talking about earlier?

5 A. Yes. That looks correct.

6 Q. Okay. And it shows on the bottom right the tract
7 that wasn't penetrated by the well; is that right?

8 A. That's correct.

9 Q. And it's your testimony that a contractor
10 basically made a mistake that resulted in the inability to
11 penetrate the last tract; is that right?

12 A. Yes, that is correct.

13 Q. And the contractor was working under the
14 direction of Novo as the operator; right?

15 A. He was.

16 Q. Thank you. Can you hear me?

17 A. Yes, I can hear you.

18 Q. You testified earlier, at least my understanding
19 of your testimony, and I'm not a geologist so you have to
20 forgive me here, I will do my best, but the geology is
21 different inside the Ochoa acreage and outside?

22 A. Just the Wolfcamp A, yes.

23 Q. The Wolfcamp A, okay. And you're including --
24 well, on different geology within the unit that you're
25 pooling, right, that you are seeking to pool?

1 A. Yes.

2 Q. And isn't it true that to pool acreage, geology
3 needs to be continuous and consistent throughout the pooled
4 acreage?

5 A. Well, it is continuous. And I would say it is
6 consistent because by the time it makes it to the Astrodog
7 unit, as I show based off the pilot log, that interval has
8 large diminished to basically nothing.

9 So what I'm saying is, by the time it gets into
10 the Astrodog unit, that acreage is consistent and
11 continuous, but in the Ochoa unit it is not.

12 Q. Okay. Thank you. You testified about evaluating
13 Novo's plans and the wells that Novo may drill. And it
14 sounds to me like you are evaluating, determining which
15 wells you will complete. Is that a fair understanding?

16 A. I'm not sure I understand. Well, what I think
17 you are asking me, and correct me if I'm wrong, that we are
18 permitting this, you know, X numbers of wells, but the
19 reality is that all operators will, you know, make decisions
20 based on new information.

21 And so if we permit nine wells and we think
22 that's the correct course of action, but then we have
23 another price fluctuation that actually hurt that, it is
24 very unlikely we would go forward with nine wells. The
25 truth is, any prudent operator is going to be paying

1 attention to what's going on his surroundings and making the
2 best decision based off of that information, and we are no
3 different.

4 Q. So your plans as you proposed them in this
5 application could change; is that correct?

6 A. Yes, plans can always change.

7 Q. And there is a difference, isn't there, between
8 permitting and pooling?

9 A. That's correct.

10 Q. Okay. So you can get a well permitted and you
11 may or may not drill it; right?

12 A. Yes.

13 Q. But with pooling, you're actually seeking to tie
14 up the working interest owners' acreage so that you can
15 develop it and make (unclear); right?

16 A. I suppose that's probably correct.

17 Q. So if Novo's application here is granted, it
18 would preclude BTA from drilling its proposed well in its
19 Ochoa acreage; right?

20 A. I mean, yes, only in that 40 acre tract; correct.

21 Q. Well --

22 A. Not 40-acre, I'm sorry. What is it, 160 acres,
23 the N/W corner, but it would not prevent them being from
24 being able to develop the rest of their acreage.

25 Q. And the rest -- well, parts of the rest are

1 subject to an application by Marathon?

2 A. Yeah, but that has nothing to do with us.

3 Q. But my question really is that you are pooling
4 wells in your application that you may or may not decide to
5 drill later; is that correct?

6 A. Technically, yes.

7 Q. Have you executed a plan anywhere in New Mexico
8 that's similar to the development plan you are proposing
9 here with respect to the number of wells and formation?

10 A. No, we as Novo have not.

11 Q. Those are all my questions. Thank you, Mr. Hale.

12 A. Thank you.

13 CHAIRWOMAN SANDOVAL: Thank you. Dr. Engler, do
14 you have any questions?

15 COMMISSIONER ENGLER: I guess my first comment, I
16 do like the figures. Thank you very much.

17 I was -- I want to start on the cross sections
18 are easiest, I want to get some nomenclature correct there.
19 It looks like to me everyone is calling the Wolfcamp XY,
20 whether it's BTA, Marathon or Novo; is that correct?

21 THE WITNESS: That's correct, but you are
22 referring to the disparity between everything below that
23 amongst operators, right?

24 COMMISSIONER ENGLER: What you are calling
25 Wolfcamp A, BTA is calling it the Upper Wolfcamp; is that

1 correct?

2 THE WITNESS: That's correct. Largely speaking,
3 at least the way I understand it, the Upper Wolfcamp
4 essentially refers to everything above that clay-rich
5 interval that we call the Wolfcamp B Upper Shale. So the
6 Upper Wolfcamp would be the productive interval above that.
7 The Lower Wolfcamp would be anything below that interval.
8 Those are essentially two separate flow units.

9 COMMISSIONER ENGLER: And then what you're
10 calling the Wolfcamp B, they are calling the Lower Wolfcamp
11 A and B; is that correct?

12 THE WITNESS: That's correct, yeah.

13 COMMISSIONER ENGLER: And so you have a target in
14 your Wolfcamp B. In BTA's Exhibit 11, they're saying your
15 target was in their Lower Wolfcamp B. I don't know if
16 you've seen that or have heard that.

17 THE WITNESS: Let me pull it up. I've got their
18 stuff in front of me.

19 COMMISSIONER ENGLER: Look at Exhibit 11, or at
20 least it was Exhibit 11 in the past one. I don't know what
21 it is on this one. Let me go back to it.

22 THE WITNESS: No worries.

23 COMMISSIONER ENGLER: It's Exhibit 11 on the
24 Marathon one. Let's see, so this one -- I would have to
25 find it. I don't know even if -- here it is.

1 MS. HARDY: I believe it's 25.

2 COMMISSIONER ENGLER: Yes, 25.

3 THE WITNESS: I have Exhibit 25 in front of me.

4 COMMISSIONER ENGLER: Yeah. So there what you
5 are calling Wolfcamp B target they say that's Lower
6 Wolfcamp B.

7 THE WITNESS: Yes. Yeah. There's -- trust me,
8 it gets even weirder. I mean, I think Marathon calls this
9 interval Wolfcamp D. So just getting operators to agree
10 about what to call this stuff is a little bit complicated,
11 but I hope that by providing type logs we are at least able
12 to come to an understanding about what specific intervals we
13 are. We still call this Wolfcamp B, they are just calling
14 it Lower Wolfcamp B.

15 COMMISSIONER ENGLER: Well, as a comment, maybe
16 all the geologists should get together and come up with a
17 common name. I'm just kidding.

18 THE WITNESS: Well, it would be very helpful.
19 There's no doubt.

20 COMMISSIONER ENGLER: Maybe I will recommend that
21 to the state geologist. So I wanted to get clarified what
22 is on what -- so if I go to your, now on your Exhibit 21,
23 and it's your first, first figure, which is basically
24 Astrodog's Fed Com full development plan.

25 THE WITNESS: Let me find it. Yes, the map,

1 Page 1.

2 COMMISSIONER ENGLER: Yes, the map. We went
3 through the various wells that you have highlighted.

4 THE WITNESS: Yeah.

5 COMMISSIONER ENGLER: My -- is analysis of
6 production under your domain or somebody else?

7 THE WITNESS: No. Analysis of production is done
8 by our reservoir engineers which we don't have here today,
9 but, you know, I always get to see that data, I just
10 wouldn't be able to quote you specific numbers or anything
11 like that.

12 COMMISSIONER ENGLER: Because, as I looked
13 through all the exhibits, I see nothing from Novo which
14 would provide me anything in terms of some type of
15 production analysis or comparison.

16 THE WITNESS: Okay.

17 COMMISSIONER ENGLER: And I guess, you did a good
18 job on explaining all of these wells and where they are at,
19 but then my question is, I guess, so what's the pertinent
20 (unclear) to why you are trying to develop.

21 THE WITNESS: So without being able to quote from
22 direct numbers, what we are paying attention to are all the
23 various tests of all these different horizons. So
24 essentially we are looking at whether or not the different
25 intervals have been derisked.

1 So then if you add into that the inconsistency
2 where they have been actually co-developed and tested in the
3 case of like the Third Bone Spring, Wolfcamp XY, and
4 Wolfcamp A, and it's very unfortunate I don't have those
5 examples on this map, but I can point you to the location of
6 them and if you wanted to look them up, they would be very
7 easy to find.

8 But if you look at the RB northeast 532 at the
9 bottom of the page, those are located in Sections 32 and 5;
10 right? If you go just to the west in Section 31 and the
11 section north of that, that's where Devon's Spud Muffin test
12 is. Our drilling engineer, Alex Bourland, actually was one
13 of the drilling engineers who drilled that unit. They have
14 tested seven wells in the Wolfcamp A, XY, Third Bone Spring
15 per section, so seven wells total, and they have two
16 different benches within the Wolfcamp B tested, and we have
17 that data through a data trade.

18 And so by having the actual production data, we
19 can look at that, look at the way in which those wells
20 interact when they are co-developed, come up with accurate
21 decline curves and pay attention to commodity prices and run
22 some different sensitivities and determine whether or not
23 those would still make sense to drill.

24 So everything is based off looking at the actual
25 numbers. We try to do as many data trades as possible. We

1 have, I think we have data on something like 15 or 16
2 producing wells in the immediate vicinity, and then we have
3 the working interest in numerous wells in the vicinity. So
4 you build up your database of production data, and then that
5 helps guide your decision making.

6 COMMISSIONER ENGLER: I would agree. Oil
7 production data is actually public domain, and what you said
8 makes sense, but then you don't provide that production
9 performance to really prove the case on which benches are
10 more productive. And I would have preferred to the see the
11 reservoir engineer provide that kind of background to
12 support all your evidence.

13 THE WITNESS: Okay.

14 COMMISSIONER ENGLER: Last line of questioning.
15 On your block diagram, I'm curious, because the co-developed
16 area, your Third Bone Spring Sand, Wolfcamp XY, Wolfcamp A,
17 you have a development of, of Third Bone Spring Sand and the
18 XY very close to each other, and you have no frac barriers.
19 Do you not foresee some type of interference when you try to
20 stimulate those wells?

21 THE WITNESS: Yes, we would almost certainly see
22 interference, but interference in and of itself is not a
23 problem, it's how much interference. You want there to be
24 frac overlap, because if you are not having overlap in your
25 stimulations, then you are effectively leaving undrained

1 reservoir behind.

2 So it's all just a function of engineering and we
3 want to make sure we create a very complex network of
4 fractures that are going to drain that entire flow unit, and
5 yes, they will interfere with each other.

6 COMMISSIONER ENGLER: From your Bone Spring, the
7 Third Bone Spring for that matter, and the XY, it appears to
8 me that you have about 150 feet between the two targets.

9 THE WITNESS: Yeah. Between that XY and Third
10 Bone Spring, it's approximately 150 feet. And between the A
11 and XY it's about 200 feet, correct.

12 COMMISSIONER ENGLER: So again, I would -- my
13 question, I guess, is related to within this development,
14 when you have frac height development from fracking the
15 XY -- and I understand what you are saying about a little
16 bit of interference, but with 150 feet between them, and you
17 are fracking between the Third Sand and XY, and you have the
18 wells fairly closely spaced together from a vertical
19 standpoint, I would -- I guess I would ask, again, you
20 know -- modifying a development, but do you not see this as
21 a problem since you are in a co-developed area with no
22 barriers?

23 THE WITNESS: No, I don't see it as a problem
24 because essentially this is -- a very similar pattern has
25 actually already been derisked by XTO in their Remuda unit,

1 and that has over a year of production that is public data
2 that's available. They drilled two different benches within
3 the Wolfcamp A, so Lower A, Upper A, XY, Third Bone Spring.
4 And, to be honest with you, their pattern is not much
5 different than ours.

6 And the key here, which I may not have done a
7 good job of highlighting on the block diagram, and if I
8 didn't that's my fault and I apologize, but our plan is to
9 wine rack these so that they are never stacked directly on
10 top of each other. So there may be 150 feet of vertical
11 separation, but there is always going to be 660 feet
12 horizontal separation between wells.

13 So even though we are going frac vertically, they
14 should never frac directly into the well below it, but the
15 hope is to create a complex fracture network by overlapping.

16 COMMISSIONER ENGLER: Can you -- I will ask you
17 this, but can you get your reservoir engineer to provide
18 data for the Remuda group by Tuesday?

19 THE WITNESS: Let me see what I can do.

20 COMMISSIONER ENGLER: That might not be fair to
21 you. That might be a question for Novo in general or
22 counsel.

23 THE WITNESS: Well, this is what I will say. I
24 will do my best. We are --

25 MR. BRUCE: Commissioner, we will get that data

1 for you.

2 COMMISSIONER ENGLER: I asked the same thing
3 about Marathon yesterday, and so I guess, again, we are
4 using production performance and offsets to be able to make
5 our decisions, and I want to see that data.

6 THE WITNESS: Okay.

7 COMMISSIONER ENGLER: I actually appreciate the
8 geologist (unclear) but we have time limits here. Thank
9 you very much. I'm done.

10 CHAIRWOMAN SANDOVAL: Thank you, Dr. Engler. I
11 have really three things. Would the next witness be the
12 more appropriate to ask about your contracts for takeaways?

13 THE WITNESS: He would definitely be better than
14 me.

15 CHAIRWOMAN SANDOVAL: Okay. Has Novo done any --
16 had any operations in the potash area or is --

17 THE WITNESS: Well, the Rana Salado wells are in
18 the potash area.

19 CHAIRWOMAN SANDOVAL: So you have experience
20 drilling in the potash area?

21 THE WITNESS: Yes.

22 CHAIRWOMAN SANDOVAL: Are you doing anything
23 different in the design of your well because of the potash
24 area than say a well that was (unclear).

25 THE WITNESS: I will defer that question to Alex

1 Bourland, our drilling engineer. He would be able to answer
2 that better for you.

3 CHAIRWOMAN SANDOVAL: All right. And then I
4 think we're going to get to this in more production data.
5 Is that kind of what you are you were looking for, Dr.
6 Engler?

7 COMMISSIONER ENGLER: That is correct.

8 CHAIRWOMAN SANDOVAL: Okay. Well, then I will
9 hold that question for now.

10 Okay. I guess that's it. Mr. Bruce, do you have
11 any redirect?

12 MR. BRUCE: Just a couple, Madam Chair.

13 REDIRECT EXAMINATION

14 BY MR. BRUCE:

15 Q. With respect to the number of wells you are
16 permitting, is it simply, to put it very simply for my mind,
17 be prepared to take advantage of the situation. Even though
18 you might not eventually drill all of the wells, you should
19 be ready if you need to?

20 A. Yes.

21 Q. Mr. Hale?

22 A. Yes.

23 Q. And then one other question from Commissioner
24 Engler about getting the geologists to agree on everything,
25 that would be nice, but don't geologists have a lot of

1 **differences of opinion?**

2 A. Yeah. The problem with geologists, if you
3 notice, we are all egomaniacs, so we would probably disagree
4 just for calling it a different name, so --

5 **Q. Okay. But it would be nice if everybody would**
6 **agree on a nomenclature for the zones?**

7 A. Yes, it would to be able to discuss apples as if
8 it was the same thing would be fantastic.

9 **Q. Thank you.**

10 MR. BRUCE: That's all I have, Madam Chair. And
11 if I didn't ask --

12 MS. HARDY: Sorry, Mr. Bruce.

13 MR. BRUCE: I was just going to make sure -- and
14 I can't remember if I asked to admit Mr. Hale's exhibits
15 into the record.

16 MS. HARDY: I have no objection.

17 CHAIRWOMAN SANDOVAL: What numbers were they?

18 MR. BRUCE: 10 and 21.

19 CHAIRWOMAN SANDOVAL: Yeah, we did that earlier.

20 MR. BRUCE: Okay, thank you. Sometimes I forget.

21 MS. HARDY: Madam Chair, I also have forgotten
22 and would like to request admission of BTA Exhibit 33.

23 MR. BRUCE: I have no objection.

24 CHAIRWOMAN SANDOVAL: Mr. Bruce?

25 MR. BRUCE: I have no objection.

1 CHAIRWOMAN SANDOVAL: Dr. Engler?

2 COMMISSIONER ENGLER: No objection.

3 CHAIRWOMAN SANDOVAL: BTA Exhibit Number 33 is
4 entered into the record.

5 (Exhibit BTA 33 admitted.)

6 MS. HARDY: Madam Chair, I have one question on
7 the procedure with respect to supplemental information. I
8 understand it will be provided on Tuesday by noon in advance
9 of the rest of the hearing next Thursday.

10 Would BTA, though, have an opportunity to submit
11 supplemental exhibits if they need to do that? I understand
12 they will be able to address Novo's exhibits in their
13 testimony, but if they need to submit supplemental exhibits,
14 would they have that opportunity?

15 CHAIRWOMAN SANDOVAL: You basically opened the
16 door for everybody else, so yes.

17 MS. HARDY: Okay, thank you.

18 CHAIRWOMAN SANDOVAL: Mr. Bruce, would you like
19 to call your next witness?

20 MR. BRUCE: Yes, I would. Our next witness is
21 Alex Bourland, B-o-u-r-l-a-n-d. Are you there, Mr.
22 Bourland?

23 THE WITNESS: Yes, I am.

24 ALEX BOURLAND

25 (Sworn, testified as follows:)

DIRECT EXAMINATION

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BY MR. BRUCE:

Q. Will you please state your name and city of residence?

A. Alex Bourland, Oklahoma City.

Q. Who do you work for and in what capacity?

A. I am currently work as the senior operations engineer for Novo Oil & Gas.

Q. Have you previously testified before the Division or the Commission?

A. No, sir.

Q. Would you please summarize your educational and employment background for the Commissioners.

A. Yes, sir. I graduated in 2012 from University of Oklahoma with a bachelor's degree in petroleum engineering. Recently in 2019, graduated with my MBA also from University of Oklahoma.

As far as my work history, after graduating in 2012 I began working as a drilling engineer for Devon Energy. That was June 2012. I worked for them until late 2019. During this time I worked for, in the Barnett Shale, the Mississippi Lime, the Stack and the Delaware Basin. My responsibilities included asset planning and execution. I spent the second half of my seven and a half years at Devon doing particularly craning, spacing, and dealing with the

1 extended reach projects.

2 And then I transitioned into the Delaware Basin
3 group where I continued working in the asset role, but also
4 within the execution of the Wolfcamp wells primarily in this
5 area. I'm a senior operations engineer at Novo. I handle
6 the craning and execution for drilling operations, as well
7 as some takeaway responsibilities as well.

8 **Q. Does your area of responsibility at Novo include**
9 **this portion of the Permian Basin in southeast New Mexico?**

10 A. Yes, sir, it does.

11 MR. BRUCE: I would submit Mr. Bourland as an
12 expert operations engineer.

13 CHAIRWOMAN SANDOVAL: Is there any opposition,
14 Ms. Hardy?

15 MS. HARDY: No, Madam Chair.

16 CHAIRWOMAN SANDOVAL: Commissioners?

17 COMMISSIONER ENGLER: None.

18 CHAIRWOMAN SANDOVAL: He is tendered as a
19 witness or -- as a witness -- as an expert. Please proceed.

20 BY MR. BRUCE:

21 **Q. Mr. Bourland, you've -- your exhibit is**
22 **Exhibit 11, and I think it's basically identical as Exhibit**
23 **22; is that correct?**

24 A. Yes, sir, it is.

25 **Q. Could you go to Exhibit 11 and discuss what it**

1 **shows?**

2 A. Yes. Essentially Exhibit 11 represents the
3 geologic stratcom prepared by Michael Hale with some
4 wellbore locations that are meant to represent our spacing
5 in the Astrodog unit.

6 On the right side of Exhibit 11 you will see the
7 BTA wellbore as proposed and the current Novo 2-mile
8 wellbore as proposed.

9 You will see there is overlap in the (unclear)
10 formation at the lateral depth, and due to this, both
11 companies are pursuing an aggressive spacing. The impact
12 collision risk that exists significantly increases our
13 operational risk, and that is largely due to our MWD, our
14 modern surveying technology has an acceptable amount of
15 error, and that error grows over time, and we refer to this
16 as the elipse of uncertainty.

17 And over the course of a lateral, this elipse
18 size grows primarily it's left and right; in this situation,
19 the north and south direction. For wells drilling to the
20 east and west, we lose our ability to confidently be able to
21 say that these wellbores will not hit each other. So for
22 that reason I'm going to refer to the elipse of uncertainty
23 often as one of the risks with the proposed development
24 strategy.

25 **Q. It's already been established by Mr. Patrick that**

1 Novo must drill its wells from the drill island on the west
2 section line of Section 8; is that correct?

3 A. Yes, sir, he has.

4 Q. And if BTA drills wells into the NW/4 of Section
5 8, is there a possibility that there could be a collision
6 risk with Novo's Astrodog wells?

7 A. Absolutely, especially with the proposed spacing.

8 Q. I mean both, companies are proposing to drill a
9 number of wells. Is that fair to say?

10 A. Yes, sir.

11 Q. When you talk about the ellipse of uncertainty as
12 the area within which the wellbore is located, does the
13 operator know exactly where the wellbore is within that
14 area?

15 A. No, sir. The ellipse represents the probable area
16 of where the wellbore likely is. So as long as we
17 ensure that the ellipses for two wells do not overlap, we
18 can say with a high amount of confidence that they will not
19 leave that ellipse, therefore, not collide.

20 Q. Is BTA proposing to drill its wells from the west
21 side of Section 7, eastward?

22 A. Yes, sir.

23 Q. And does that ellipse of uncertainty grow the
24 farther you -- the further the distance that you drill the
25 well?

1 A. Yes, sir. For a lateral drilled in any
2 direction, you are going to see the elipse grow and
3 primarily in the left and right direction. But like I
4 mentioned a moment ago, these wells are drilled to the east
5 and west, which is the worst-case scenario for magnetic
6 interference just due to the earth's magnetic field. So
7 these cases, our confidence is even lower than it would be
8 if these were north to south wells.

9 Q. And again, the bottom hole location or toe of
10 each BTA well would be in the NW/4 of Section 8?

11 A. Yes, sir. That's correct.

12 Q. So if BTA has permission to drill its wells into
13 the NW/4 of Section 8, would those wells overlap with Novo's
14 Astrodog wells?

15 A. Yes, sir.

16 Q. It would be roughly the last one-third of the
17 lateral length of BTA's wells that would overlap with Novo's
18 Astrodog wells; correct?

19 A. Correct.

20 Q. And that's about -- how many feet would that be,
21 a little bit less than a half a mile?

22 A. I would say roughly 2300 feet.

23 Q. Does modern drilling technology allow an operator
24 to know exactly where a wellbore is located?

25 A. We know that it's within that elipse that I had

1 referenced, but we cannot confidently say that's exactly
2 where it is within that ellipse.

3 Q. Okay. So there is -- there is -- there is
4 uncertainty there?

5 A. Yes, sir.

6 Q. Would you need to know where BTA's wellbores are
7 located so Novo could avoid them when drilling the Astrodog
8 wells if it had to drill a half a mile through the NW/4 of
9 Section 8?

10 A. Absolutely.

11 Q. Novo --

12 A. Continue. Sorry.

13 Q. No, I said if BTA is allowed to drill its wells,
14 there is a lot of uncertainty about where they might
15 interfere with Novo's wells?

16 A. Yes, that's correct. This, this type of density
17 would be a very challenging task just from a technical
18 standpoint. If they were 100 percent Novo-operated wells,
19 and I had guaranteed access and ability to fine tune the
20 plans. Two operators working separately to do the same
21 thing, we would have a high risk of a potential issue.

22 Q. What is an anti-collision test?

23 A. An anti-collision test refers to -- or for any
24 two wells, assume for this case it's one, there is two
25 lateral wells going in the same direction. They are both

1 going to have an ellipse side. If those ellipses are
2 touching, that would result in a safety factor of 1.0. Any
3 space in addition to that is between the ellipse, that safety
4 factor grows to one or higher.

5 A typically acceptable, industry acceptable
6 number is a safety factor of 1.5, meaning not only are the
7 ellipses not touching, but there is a significant amount of
8 space proportional to half the ellipse size separating the
9 two wells and their ellipses.

10 **Q. And would Novo or BTA be taking a risk for each**
11 **well in their drilling plans?**

12 A. I would say there would be a substantial amount
13 of risk if we were to proceed with that development
14 strategy.

15 **Q. And how many wells does Novo plan on drilling in**
16 **the N/2 of Sections 8 and 9, again, approximately?**

17 A. I believe Brandon mentioned it earlier. Because
18 of our high -- it's a very dense number, higher than our
19 typical development, I believe it was a total of 13 to 16
20 with essentially being three in the Third Bone Spring, three
21 in the Wolfcamp XY, three in the Wolfcamp A and four to six
22 in the Wolfcamp B, so, yes, there is --

23 **Q. Sir -- go ahead.**

24 **(Overtalk.)**

25 A. 13 to 16.

1 **Q. 13 to 16. Are there also -- does Novo anticipate**
2 **drilling wells in First and Second Bone Spring also?**

3 A. I know we are evaluating it. I believe there are
4 plans to look at drilling two to three in the First, and two
5 to three in the Second Bone.

6 **Q. What happens if there is a collision between**
7 **wells?**

8 A. There is -- obviously the biggest issue would be
9 the safety of the people on the rigs. We have exposed them
10 to potentially under balance situations of where one rig may
11 communicate with the other, and it could cause unsafe
12 operations for either rig.

13 Definitely an economic impact. If you hit
14 another well, you're -- if you're lucky enough not to have
15 a safety incident, you are at least going to have to plug
16 off that wellbore, side track and redrill the lateral, so a
17 significant amount of economic impact could occur.

18 We've got environmental risk if there is an
19 uncontrolled release of hydrocarbons, and then it just --
20 it's a wasted potential lateral if that occurs and you have
21 to reroute your client to a different location, and you may
22 leave a bit of reservoir undeveloped.

23 **Q. Is there also a waste concern?**

24 A. Yes. I would say with the -- that last point
25 there, you -- if, if undeveloped a certain lateral that --

1 I believe I covered that.

2 **Q. And are there any other risks other than wellbore**
3 **collision?**

4 A. Yes, there's -- you know, one of these operators
5 will be there first, and when that wellbore is in place,
6 frac operations will take place. And not knowing the time
7 of the -- of the other operation, you could have drilling
8 and frac operations going on at the same time, but even if
9 that were not the case, and one well existing and the other
10 well is within a few hundred feet of it, if you began a frac
11 offsetting that well, the pressure communication could very
12 well collapse your production casing string which would
13 leave a similar issue that we just discussed and a loss of a
14 wellbore or just extensive economic impact.

15 **Q. If your pooling application is not granted, the**
16 **only option would then be to drill the mile and a half**
17 **laterals with a half mile of no productive zone roughly;**
18 **correct?**

19 A. Yes, sir. I believe the two options would be
20 drill the half mile of unproductive lateral and parallel to
21 BTA, or as they proposed a nudge of over a quarter mile to
22 reach our intended or our revised or stake point, which I
23 believe in either situation would be economically -- the
24 risk associated with anti-collision would apply to both, and
25 that there would be also some economic impact that's very

1 similar to (unclear).

2 **Q. The longer step up, of course, costs more;**
3 **correct?**

4 A. Yes, sir.

5 **Q. Without any associated productive reservoir?**

6 A. Yes, sir, I will add some color on this. The
7 typical nudge that we would approve is in the 1000 to 1500
8 feet range. By necessity we will occasionally, due to line
9 restraints or just remote situations, we will extend that to
10 around the 2000-foot range. And when we do that, we take on
11 a lot of additional risk and financial impact of the -- has
12 a lot more physical feet than the vertical because it's a
13 larger hole size, and if you have to dig significant amounts
14 of directional work to drill a long nudge, you typically
15 will require additional BHA, and those can easily be
16 \$100,000 for each additional BHA, and not to mention that
17 you are just in an open hole for a much longer duration,
18 which increases the risk of having hole issues.

19 So for those reasons we take nudge drilling very
20 seriously if it's in the range of 1500 plus. So I think
21 anything in the ballpark that would be required to hit that
22 remaining mile and a half would be significantly outside of
23 our comfort zone, especially with the density of this
24 development.

25 **Q. You don't think that would be a prudent**

1 **development strategy?**

2 A. Absolutely not. I think there are, there are
3 places where the economic risk justifications may call for
4 those types of trials, but not under normal drilling
5 circumstances. I typically here approach it like this, in
6 the more remote areas, drilling offshore from, from, you
7 know, a location that is over a mile or half a mile to a
8 mile away from the target, that's not something you see very
9 often on US land.

10 **Q. How about some other issues, what about by having**
11 **BTA's development plan, there would be a lot of additional**
12 **surface disturbance, would there not?**

13 A. My understanding is that if BTA does not drill
14 their wells, they didn't have any surface locations
15 necessary. I heard some comment earlier this morning that
16 they potentially or they said that they wouldn't, and I'm
17 not quite sure what they are referring to. But my
18 understanding is that if they don't drill the lateral, there
19 are a significant amount of verticals and surface locations
20 that would not be drilled limiting the surface disturbance
21 and the economic extent of putting those verticals in the
22 hole.

23 **Q. And BTA's plan would require a lot more vertical**
24 **holes to be drilled to access the same amount of reservoir?**

25 A. Yes, sir. Oxy's -- I'm sorry -- Marathon and

1 Novo could adequately produce both reservoirs from their
2 proposed verticals without the need for additional verticals
3 from BTA.

4 Q. In your opinion, is that -- in your opinion, is
5 that a more efficient development strategy, doing two groups
6 of 2-mile wells rather than two groups of 1.5-mile wells
7 plus one group of 1-mile wells?

8 A. Absolutely. When I plan a development block, my
9 goal is always to minimize surface impact and maximize
10 efficiency from each pad and our proposed development would
11 definitely do that.

12 Q. What is the approximate cost to drill -- what is
13 the approximate cost to drill the vertical intermediate
14 section of these horizontal wells?

15 A. There are multiple approaches, multiple designs
16 in this immediate area. This is a potash area where about a
17 good portion of that with the Novo acreage is in the R 111P
18 area, and a good portion of it is outside of that. The R
19 111P area requires a four-string design, which is more
20 costly for the vertical, whereas if you are outside of that,
21 like one of our pads, then you can take advantage of a
22 three-string design and that is a less expensive design.

23 So I would say with both designs you are looking
24 at a range of 1.5 to \$2 million to reach your, your 10,000
25 foot intermediate casing point.

1 Q. Per well?

2 A. Per well.

3 Q. So you can take that number and multiply it by
4 the number of excess wells that might be required, and
5 you're dealing with quite a bit of, quite a bit of money?

6 A. Yes, sir. If you extrapolate that times the
7 number of verticals that may be deemed unnecessary, that
8 would be a significant amount of economic expense.

9 Q. And you mention that 1.5 million or \$2 million
10 per well for the vertical or intermediate section, you don't
11 have access to all of BTA's economics, do you?

12 A. No, sir.

13 Q. But would you expect their costs to be similar?

14 A. I would. I would think that if they are a good
15 operator in the area, they could be in that same ballpark,
16 but even conservatively if they were able to do it at a
17 lower cost, that's a very reasonable projection at 1.5
18 million.

19 Q. And both companies are looking at drilling a
20 substantial number of wells, not only, not only BTA and
21 Novo, but also Marathon?

22 A. Correct.

23 Q. Were Exhibits 11 and 22, which I believe are
24 virtually identical, prepared by you?

25 A. In combination with our geology team, yes, sir.

1 Q. In your opinion, is the granting of Novo's
2 application -- applications in the interest of conservation
3 and the prevention of waste?

4 A. Yes, sir.

5 MR. BRUCE: Madam Chair, I would move the
6 admission of Novo Exhibits 11 and 22.

7 MS. HARDY: No objection.

8 CHAIRWOMAN SANDOVAL: Any objection from the
9 Commissioners?

10 COMMISSIONER KESSLER: No objection.

11 COMMISSIONER ENGLER: No objection.

12 CHAIRWOMAN SANDOVAL: Novo Exhibits 11 and 22 are
13 now entered into the record.

14 (Exhibits Novo 11 and 22 admitted.)

15 MR. BRUCE: And before I pass the witness, Novo
16 also submitted Exhibits 23 through 28, and these are
17 generally the exhibits required by the Division.

18 Exhibit 23 is the application and proposed ad for
19 the Wolfcamp application.

20 Exhibit 24 is the application and proposed ad for
21 the Bone Spring application.

22 Exhibit 25 is Division Order Number R-21252,
23 which applied to both Division cases.

24 Exhibit 26 is simply my affidavit of notice from
25 the original hearing showing that notice was given to Oxy

1 and BTA, the two parties who were subject to pooling showing
2 that they did receive actual notice.

3 And Exhibits 27 and 28 are the pooling checklists
4 that the Division now requires in its pooling applications.
5 And I would move the admission of Novo Exhibits 23 through
6 28.

7 MS. HARDY: No objection.

8 CHAIRWOMAN SANDOVAL: Commissioners?

9 COMMISSIONER KESSLER: No objection.

10 COMMISSIONER ENGLER: No objection.

11 CHAIRWOMAN SANDOVAL: Novo's Exhibits 23 through
12 28 are entered.

13 (Exhibits Novo 23 - 28 admitted.)

14 MR. BRUCE: And with that, I would pass the
15 witness over to Ms. Hardy.

16 CROSS-EXAMINATION

17 BY MS. HARDY:

18 Q. Thank you. Good afternoon, Mr. Bourland.

19 A. Hello.

20 Q. Can you hear me?

21 A. Yes, ma'am.

22 Q. I just have a few questions for you. You
23 testified just a minute ago about the cost per well, and did
24 you hear Mr. Hale's testimony just a little while ago?

25 A. Yes, ma'am.

1 Q. And I think he said that Novo may change its
2 drilling plans depending on what happens in the future. Did
3 you hear that testimony?

4 A. Yes, ma'am.

5 Q. So with respect to per well, at this point Novo
6 hasn't determined how many wells it will drill; is that
7 correct?

8 A. That's my understanding.

9 Q. And on collision risk, did you hear Dr. Engler's
10 questions for Mr. Hale regarding the separation between
11 Novo's proposed wells?

12 A. I don't recall that comment.

13 Q. My question is whether you are concerned about
14 collision risk with respect to Novo's proposed wells with, I
15 think Mr. Hale said, 150 feet of separation between the
16 wells?

17 A. I'm sorry, was that all the question?

18 Q. Yes.

19 A. I don't recall the exact spacing that he
20 mentioned.

21 Q. And if there is 150 feet of separation between
22 the wells that Novo is proposing, would that cause you
23 concern about a collision risk?

24 A. With our most likely plain, the density would
25 indicate that we have a substantial amount of collision

1 risk. I believe there is some, as Mr. Hale mentioned, some
2 validity based on commodities pricing how we would execute,
3 but we currently expect a very high amount of wells in that
4 development. So, yes, I believe it is a concern.

5 Q. So -- and my question is really about Novo's
6 wells, even if BTA's wells aren't drilled, if Novo's
7 application is granted, would you be concerned with
8 collision risk with respect to Novo's wells if they are
9 separated by 150 feet?

10 A. The 150 feet that you are referring to, is that
11 within the same target zone? I will have to have more
12 information about the specific situation you are referring
13 to to comment on this anti-collision risk.

14 Q. Okay. So my question is really a hypothetical to
15 you since you didn't -- don't recall Mr. Hale's testimony
16 in response to Dr. Engler's question. But here is my
17 question: If there is 150 feet of separation between Novo's
18 proposed wells, does that create a collision risk?

19 A. So if the two wells are separated by 150 feet,
20 that is a reason for concern for collision. I don't believe
21 that is the proposed spacing that Mr. Hale was referring to
22 because that would result in roughly 40 wells (unclear). I
23 think his spacing is more in a staggered approach where the
24 150 feet is actually mitigated through TBD differences.

25 Q. Okay. Thank you. Regarding access to Novo's

1 wells through tangents, Novo does drill tangents; correct?

2 A. Yes, ma'am.

3 Q. And I think you mentioned typical would be up to
4 2000 feet, or you may consider tangents up to 2000 feet?

5 A. My preference is in the 1000 to 1500 feet range,
6 but in certain circumstances, we do go above that.

7 Q. And Novo is drilling a tangent to reach its wells
8 in the S/2 of the Astrodog unit, isn't it?

9 A. Yes. We have a drill island which we refer to as
10 at Pad U just on the northern part of the S/2 which would,
11 because of that drill island, requires us to hit our
12 furthest slot in the south side of that section which does
13 push us into that 2000 foot nudge territory.

14 Q. Okay. That was going to be my next question was
15 how long that tangent is, if you know.

16 A. Yes, ma'am. That's -- the center of that pad to
17 the Salado is I believe 2100 feet. And we would design that
18 wellhead layout to place that specific wellhead closer to
19 that Salado, so we would be at about a 2000-foot nudge,
20 which is a very technical endeavor.

21 Q. Is it correct that Novo hasn't drilled any other
22 multi well pads in New Mexico?

23 A. We are currently drilling one --

24 Q. In which --

25 A. -- with two drilled, and we are currently rigging

1 up to drill intermediate.

2 Q. And which well pad is that? Which wells are
3 those?

4 A. This is the Rana Salado 0605 231H and Rana Salado
5 605 121H and 211H.

6 Q. Okay. And at this point in time, Novo hasn't
7 completed any multi well pads in New Mexico; is that
8 correct?

9 A. That is correct.

10 Q. Those are all of my questions. Thank you.

11 CHAIRWOMAN SANDOVAL: Thank you. Do the
12 Commissioners have any questions they want to ask?

13 COMMISSIONER ENGLER: I don't know if
14 Commissioner Kessler's got any questions.

15 COMMISSIONER KESSLER: I don't. Thank you.

16 COMMISSIONER ENGLER: I have one. Thank you.
17 Referring to your wellbore collision risk diagram, which is
18 your Exhibit 22, you have your elipse of uncertainty, could
19 you -- again this is for clarification -- is that elipse --
20 what plain is that elipse that you are showing? Is it the
21 XY plain and YZ plain? What plain is that?

22 THE WITNESS: The (unclear) represents the
23 (unclear) plain, the height represents the Y plain, and the
24 width, the larger portion represents the X, which would be
25 to the left and right of the wellbore, or, in this case,

1 north and south. So it's represented at that exact depth
2 where your wellbore could be, and more likely than not there
3 is uncertainty in the left and right direction.

4 COMMISSIONER ENGLER: So the 422 feet really for
5 that left-right direction, I would call that in the X plain
6 or the XY plain; is that correct?

7 THE WITNESS: Yes, sir.

8 COMMISSIONER ENGLER: And the 150 feet is, that's
9 a vertical, so that's in the Z plain, the vertical plain; is
10 that correct?

11 THE WITNESS: Yes, sir, in what I would say the
12 TBD plain.

13 COMMISSIONER ENGLER: Right. So --

14 THE WITNESS: Yes, sir.

15 COMMISSIONER ENGLER: So again, you were
16 mentioning -- I guess I want to clarify which to make sure I
17 understand, which two of those directions do you have the
18 most uncertainty in?

19 THE WITNESS: So if you are looking down the
20 wellbore, the XY -- the X plane, that wellbore is to the
21 left and right, and that is where the most uncertainty is.
22 And for that specific depth, those numbers represent BTA's
23 uncertainty at a one mile and a half distance in the east
24 and west direction. And those are actual numbers, so there
25 is 200 feet to the right and 200 feet to the left, and that

1 wellbore can be anywhere in between.

2 COMMISSIONER ENGLER: Right, and 75 feet up
3 higher or 75 feet lower; correct?

4 THE WITNESS: Yes, sir. That is correct.

5 COMMISSIONER ENGLER: So --

6 (Overtalk.)

7 COMMISSIONER ENGLER: Go ahead.

8 THE WITNESS: Yes, sir. Due to geosteering
9 efforts and log data, you can typically pinpoint the up and
10 down a little better, but the left and right is not
11 possible, it's very uncertain.

12 COMMISSIONER ENGLER: So the question -- one of
13 the questions that I was asking Mr. Hale about had to do
14 with the Third Bone Spring Sand and Wolfcamp XY and the
15 proposed development, the distances between, the vertical
16 distance between those two horizons about 150 maybe 200
17 feet.

18 So my question to you about this drilling
19 collision is, do you -- if you are going to drill three
20 wells in the Third Bone Spring and three in the XY, do you
21 perceive this as a collision problem?

22 THE WITNESS: If you are referring to the up and
23 down direction, I think that is a non-issue. I think the
24 type log for the area and gamma ray readings while you are
25 drilling help us confirm the exact depth. And in relation

1 to the other wellbores, we can make sure we maintain the
2 intended TBD difference. In the XY plain, the 200 feet to
3 the right would, would be an issue if your spacing was 200
4 feet, you know, if those ellipses are touching, so we -- so
5 that close together.

6 COMMISSIONER ENGLER: That's what I was asking.
7 My question was more about the vertical plain and the
8 multiple development in two zones that are 150 feet, 200
9 feet vertically separated, and I think you answered that
10 question. Thank you.

11 THE WITNESS: No problem.

12 COMMISSIONER ENGLER: No further questions.

13 CHAIRWOMAN SANDOVAL: Thank you, Dr. Engler. I
14 have a couple of questions. So at this point Novo doesn't
15 know what the schedule may be if their plan -- if they are
16 able to proceed with their plan?

17 THE WITNESS: We have a four-well package that is
18 confirmed and approved, and we, we (unclear) develop. And
19 we are hopeful that the plan will continue after this
20 packet.

21 CHAIRWOMAN SANDOVAL: Do you have any sort of
22 time frame as to its, you know, if you were able to proceed,
23 when you might drill and complete those wells?

24 THE WITNESS: Specific to the Astrodog?

25 CHAIRWOMAN SANDOVAL: Yes.

1 THE WITNESS: I, as soon as we get approval. I
2 should probably defer to others. I'm more of an execution,
3 but once those permits are approved, but from my perspective
4 and the conversations I have heard, I believe we are ready
5 to move on those right away.

6 CHAIRWOMAN SANDOVAL: Okay. Assuming you were
7 able to move forward, have you already had discussions with
8 third party contractors or whatever to take away your gas or
9 would you be required to flare it?

10 THE WITNESS: Well, we actually believe
11 Enterprise is going to be our best option there. We have
12 not secured a contract, but we know that they are close
13 enough in discussions right away or currently, so I don't
14 believe that timing will be an issue.

15 CHAIRWOMAN SANDOVAL: Okay.

16 THE WITNESS: Similar story with water takeaway.

17 CHAIRWOMAN SANDOVAL: Do you have experience
18 drilling and completing wells in the potash area?

19 THE WITNESS: Yes, ma'am. As Michael mentioned,
20 in my previous job I was the asset engineer for Devon Energy
21 in this immediate area, and I planned and executed these
22 (unclear).

23 CHAIRWOMAN SANDOVAL: Does your -- would you have
24 a modified well design -- would you have any modifications
25 for your well design in the potash area for a well that's

1 not in the potash area?

2 THE WITNESS: So if you are referring to potash
3 only, I could use a (unclear) design. If you are talking
4 about the R 111P area within the secretary's potash, I'm
5 required to use a four-string design.

6 CHAIRWOMAN SANDOVAL: That is all the questions I
7 have. Mr. Bruce, do you have any redirect of this witness?

8 MR. BRUCE: Yes, just a couple of follow-up
9 questions.

10 REDIRECT EXAMINATION

11 BY MR. BRUCE:

12 Q. Mr. Bourland, regarding Ms. Hardy's question
13 about 150 feet of vertical severance, these Third Bone
14 Spring, Wolfcamp XY and Wolfcamp A wells are not being
15 drilled vertically on top of each other; is that correct?
16 They are being spaced out horizontally?

17 A. Yes, sir, I believe that is correct.

18 Q. So that's not 150 feet between wells, it's
19 substantially more than that because of the horizontal
20 separation as -- as the wells are -- you could look at the
21 C-102s and see where the wells are being placed; is that
22 correct?

23 A. Yes, sir. Based off of the three-well spacing, I
24 would guess there is at least 1000 feet separating them in
25 the left and right direction, as well as the 150 feet of TBD

1 that was mentioned previously. You're right, that's a
2 substantial amount.

3 Q. So that would, that would massively reduce any
4 collision risk?

5 A. Yes, sir.

6 Q. And then about the nudge, you said -- your 1000
7 to 1500, at most you really want to do is 2000 feet. Is
8 that a correct summary of your testimony on that?

9 A. Yes, sir. I consider anything over 1500 a high
10 risk nudge that will likely bear additional cost and risk.

11 Q. And what BTA is suggesting is you are looking
12 more at like 2300 to 2800 feet; is that correct?

13 A. I believe they are in the 20 -- by my own numbers
14 I believe there is about 2300 to 2700 feet.

15 Q. Okay.

16 A. (unclear) for every well drilled.

17 Q. Are you personally uncomfortable with that
18 length?

19 A. Yes, sir, I would be very uncomfortable
20 recommending that execution.

21 Q. And when you are looking at the S/2 of Sections 8
22 and 9, in that instance it's only Novo drilling, so you have
23 a lot more control and a lot more knowledge of where the
24 wells are located; is that correct?

25 A. That's absolutely correct. Having complete

1 control over the wellbore placement and the data from those
2 wells, but in my mind, the significant difference between
3 what the nudges we were referring to in the N/2 versus the
4 S/2 is the wells that are being drilled in the same
5 direction.

6 In the N/2 you are talking about a dozen wells
7 going the same direction, and you are going to have
8 anti-collision issues from the start. Where, if you do that
9 in the S/2, you are able to get efficient separation by
10 managing your directional plans. You don't have that option
11 in the N/2.

12 Q. And I think you listened to Mr. Hale -- I mean,
13 you are permitting these wells. Now, Novo does plan on
14 drilling a bunch of wells out here. I think the number you
15 mentioned was anywhere from, say, a dozen up to 20 wells.
16 Now, there might be a couple fewer than that, but you are
17 permitting them all with the intent to drill them all, are
18 you not?

19 A. Yes, sir, that's correct.

20 Q. And Mr. Patrick testified that the APDs have been
21 filed. If the BLM issued the APDs, would you be -- would
22 you be ready to drill at that time?

23 A. If the BLM issued the APDs we would be able to
24 move in probably a month's time. More likely it would be
25 immediately following our primary work.

1 **Q. Thank you.**

2 MR. BRUCE: That's all I have, Madam Chair.

3 CHAIRWOMAN SANDOVAL: Thank you, Mr. Bruce.

4 MR. BRUCE: And that is my last witness. And I
5 haven't talked with Ms. Hardy about this, but I'm kind of
6 guessing she would probably rather start her witnesses off
7 on Thursday, and I think we can finish then, rather than
8 starting with Mr. Price and going for 15 minutes and then
9 breaking.

10 MS. HARDY: Whatever the Commission prefers is
11 fine with me.

12 CHAIRWOMAN SANDOVAL: I think we will conclude it
13 for the day at 4:37 and recess until 11 o'clock on Thursday,
14 starting -- I think we committed with the new exhibit in
15 Marathon's case for one hour at the beginning of Thursday.
16 Following that, we will restart the Novo BTA case starting
17 with Ms. Hardy's witnesses, with -- with it being concluded
18 on Thursday.

19 And we will need, keep in mind, probably need an
20 hour, at least, if not more, for deliberations that day.
21 The deadline for anything due is Tuesday at noon. So if you
22 were asked to provide any additional data, your deadline is
23 at Tuesday at noon. And we have --

24 MR. BRUCE: We will -- Novo will comply with
25 that.

1 CHAIRWOMAN SANDOVAL: Great, thank you. We have
2 posted an updated notice on the web site for day three.
3 Please don't log into the same one, it won't work. So that
4 should be the only hearing page for Thursday at 11.

5 MR. BRUCE: Thank you very much.

6 CHAIRWOMAN SANDOVAL: Is there anything from any
7 of the parties?

8 (No audible response.)

9 CHAIRWOMAN SANDOVAL: Okay. Well, everyone have
10 a great weekend and we will look for you. See you again on
11 Thursday.

12 MS. HARDY: Thank you very much for your time.

13 CHAIRWOMAN SANDOVAL: Thank you.

14 COMMISSIONER ENGLER: I will be there Thursday.

15 CHAIRWOMAN SANDOVAL: Oh, goody.

16 (Recessed.)

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1 STATE OF NEW MEXICO
2 COUNTY OF BERNALILLO

3

4 REPORTER'S CERTIFICATE

5

6 I, IRENE DELGADO, New Mexico Certified Court
7 Reporter, CCR 253, do hereby certify that I reported the
8 foregoing virtual proceedings in stenographic shorthand and
9 that the foregoing pages are a true and correct transcript
10 of those proceedings that were reduced to printed form by me
11 to the best of my ability.

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

16 I FURTHER CERTIFY that the Virtual Proceeding was
17 of poor to good quality.

18 Dated this 14th day of August 2020.

19

/s/ Irene Delgado

20

Irene Delgado, NMCCR 253
License Expires: 12-31-20

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