

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

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

APPLICATION OF MILESTONE ENVIRONMENTAL SERVICES, LLC FOR APPROVAL OF A SALTWATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO. CASE NO. 20657

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

August 22, 2019

Santa Fe, New Mexico

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

This matter came on for hearing before the New Mexico Oil Conservation Division, Michael McMillan, Chief Examiner; Phillip Goetze and Kathleen Murphy, Technical Examiners; and Bill Brancard, Legal Examiner, on Thursday, August 22, 2019, at the New Mexico Energy, Minerals and Natural Resources Department, Wendell Chino Building, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

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1 (10:02 a.m.)

2 EXAMINER McMILLAN: Call the hearing back
3 to order.

4 The next case we're going to hear is Case
5 Number 20657, application of Milestone Environmental
6 Services, LLC for approval of a saltwater disposal well,
7 Lea County, New Mexico.

8 Call for appearances.

9 MR. LARSON: Good morning, Mr. Examiner.
10 Gary Larson and Dana Hardy, from the Santa Fe office of
11 Hinkle Shanor, for the Applicant, Milestone
12 Environmental Services.

13 We have five witnesses.

14 EXAMINER McMILLAN: Any other appearances?

15 MR. CARR: May it please the examiner,
16 William F. Carr, senior counsel for Concho Resources.

17 I do not have a witness. I may
18 cross-examine.

19 MR. RANKIN: Mr. Examiner, Adam Rankin,
20 with the Santa Fe office of Holland & Hart, here on
21 behalf of Delaware Energy.

22 No witnesses today, but I may conduct some
23 limited cross-examination.

24 MS. ANTILLON: Andrea Antillon on behalf of
25 State Land Office.

1 I also don't have witnesses, but I have a
2 statement I would like to make.

3 EXAMINER McMILLAN: Thank you.

4 Proceed.

5 MR. LARSON: I have five witnesses to be
6 sworn.

7 EXAMINER McMILLAN: The witness would
8 please stand up and be sworn in at this time.

9 (Mr. Rio, Mr. Price, Mr. Jessee,
10 Dr. Jordan and Mr. Davis sworn.)

11 MR. LARSON: May I proceed, Mr. Examiner?

12 EXAMINER McMILLAN: Yes.

13 MR. LARSON: Before I start with Mr. Rio,
14 I'd like to point out the packet of exhibits I handed to
15 you originally had an Exhibit Number 1. These were
16 marked yesterday afternoon. And we decided to pull that
17 exhibit. So there is no Exhibit 1. Our exhibits start
18 with Number 2.

19 GABRIEL J. RIO,
20 after having been previously sworn under oath, was
21 questioned and testified as follows:

22 DIRECT EXAMINATION

23 BY MR. LARSON:

24 Q. Good morning, Mr. Rio.

25 A. Good morning.

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

2 A. Gabriel Joseph Rio.

3 Q. And what is your position at Milestone
4 Environmental Services?

5 A. I'm the president and chief executive officer.

6 Q. And are you familiar with the matters addressed
7 in Milestone's application in this case?

8 A. I am.

9 Q. And have you previously testified at a Division
10 hearing?

11 A. I have not.

12 Q. And given that, would you summarize your
13 educational background and professional experience in
14 the oil and gas industry?

15 A. Sure. I have a Bachelor of Science degree in
16 chemical engineering from the University of Texas at
17 Austin. I spent some time doing market research in the
18 oil and gas industry early in my career and then have
19 been in the oilfield waste management business since
20 2004.

21 MR. LARSON: Mr. Examiner, I tender Mr. Rio
22 as an expert in petroleum environmental engineering.

23 MR. CARR: No objection.

24 MS. ANTILLON: No objection.

25 MR. RANKIN: No objection.

1 EXAMINER McMILLAN: So qualified.

2 Q. (BY MR. LARSON) Mr. Rio, has Milestone retained
3 Price, LLC to assist with preparing regulatory
4 applications --

5 A. Yes, we have.

6 Q. -- and obtaining necessary Division approval?

7 A. Yes.

8 Q. And has Milestone also retained Lonquist &
9 Company to provide expert analysis of the proposed well?

10 A. We have, yes.

11 Q. And representatives of those companies will be
12 providing more technical testimony today; is that
13 correct?

14 A. That's correct. Yes.

15 Q. Is Milestone proposing to employ a unique
16 process with regard to the injection of produced water
17 in its proposed Beaza SWD No. 1 well?

18 A. Yes. It's a unique process, but it is a
19 process that Milestone has been consistently using since
20 1993 at our locations in Texas.

21 Q. And could you briefly describe what that
22 process entails?

23 A. Sure. So Milestone receives various liquid
24 waste streams from the oil field, all RCRA and
25 nonhazardous waste streams from drilling, completion and

1 production operations. Those waste streams might
2 include water-based -- spent water-based drilling
3 fluids, spent oil-based drilling fluids, tank bottoms.
4 In Texas, we receive water that collects in reserve
5 pits. In New Mexico, reserve pits are more rare. We
6 also see frac flowback and produced water. We take all
7 of those waste streams. They almost all come in by
8 truck. Those trucks are unloaded into a -- the
9 saltwater trucks are loaded directly into tanks. The
10 other waste streams are unloaded into a reinforced
11 concrete washout pit.

12 Through both that -- that small concrete
13 washout pit and through some other processes, we remove
14 some of the solids that are associated with those waste
15 streams. Sometimes there are sands and other cuttings
16 that still haven't been screened out of those fluid
17 waste streams, so we screen out -- we dig out solids
18 that naturally settle to the bottom of that pit, and we
19 set them aside for disposal into an oilfield waste
20 landfill.

21 We further then process and screen out
22 materials that we deem too large to inject based on the
23 particular geology we're sitting on, and we screen out
24 more materials using shakers with different screen
25 sizes, pull out some but not all of the solids out of

1 that waste stream, blend the different waste streams
2 together and -- and create a slurry. And then we
3 ultimately inject -- we inject that slurry.

4 **Q. And when you say various waste streams, are you**
5 **talking about oilfield-produced water, liquid waste**
6 **stream?**

7 A. Yes. That's correct.

8 **Q. Would you identify the document marked as**
9 **Exhibit 2?**

10 A. Sure. This is marked "Midland Facility
11 Overview." These are photos of two of the closest
12 facilities to -- to New Mexico, our Orla Facility, which
13 is just -- just south of the state line in Reeves
14 County, Texas, and then some photos of our facility in
15 south Midland in Upton County, Texas.

16 **Q. And in terms of the location of the proposed**
17 **Beaza No. 1 well, will it have a similar footprint to**
18 **the Orla Facility shown in Exhibit 2?**

19 A. Yes, it will. It will have a very similar
20 fingerprint. It's a -- it's a nearly identical design
21 between Orla Facility, the South Midland Facility and
22 the -- and the Beaza Facility we're proposing in
23 New Mexico.

24 **Q. And how many of these produced-water disposal**
25 **well facilities does Milestone operate in Texas?**

1 A. We currently operate seven facilities. We have
2 a total of eight -- no. We actually have a total of
3 nine active injection wells at those facilities.

4 **Q. And the Beaza SWD No. 1 is the first one you've**
5 **applied for in New Mexico?**

6 A. That's correct.

7 **Q. And for your facilities in Texas, did the**
8 **Railroad Commission deem the SWD wells to be Class II**
9 **injection wells?**

10 A. Yes, they did.

11 **Q. And what regulatory authorizations did the**
12 **Railroad Commission require?**

13 A. We have -- our facilities in the state of Texas
14 require two permits. There is a permit to inject, which
15 is through the UIC program at the Railroad Commission.
16 We also get a pit permit from the Railroad Commission,
17 which goes through their technical permitting group.

18 **Q. So the Railroad Commission did not require a**
19 **solid waste management permit for any of your**
20 **facilities?**

21 A. That's correct. They did not.

22 **Q. And for purposes of the proposed Beaza SWD**
23 **No. 1, the Division has required Milestone to apply for**
24 **a solid waste management permit; is that correct?**

25 A. That's my understanding.

1 Q. And has Mr. Price submitted a C-137 application
2 to the Division on behalf of Milestone?

3 A. Yes. Yes, he has.

4 Q. And Mr. Price will testify about that
5 application?

6 A. Yes.

7 Q. And what do you believe are the advantages of
8 the process Milestone proposes to employ at the Beaza
9 SWD No. 1 well location?

10 A. So if you look at the -- there are several
11 different alternatives for how to manage particularly
12 drilling fluid waste and drilling waste. The primary
13 other alternative for managing those wastes, in the
14 state of Texas, it's put into a reserve pit. The State
15 of New Mexico doesn't allow that. In the state of New
16 Mexico, we generally go to an oilfield waste landfill.
17 Landfills are historically well designed to handle solid
18 waste streams.

19 Handling fluid waste streams is more
20 difficult for a landfill. The landfill either has to do
21 a significant amount of pretreatment to separate clean
22 fluids from dry solids to be able to landfill the dry
23 solids, or the landfill would have to take that fluid
24 waste stream -- what happens a lot is they would take
25 dry dirt or fly ash or some other drying agent to add to

1 that waste stream to be able to bulk -- to be able to
2 dry out the fluid waste and effectively -- and get that
3 waste to ultimately pass the paint-filter test, which
4 allows it to go into -- to be dry enough to go into the
5 landfill.

6 The problem there is that ultimately you
7 still have contaminated liquids going into a landfill,
8 and by adding all these drying agents, that has the
9 effect of bulking up the waste stream. So one barrel of
10 spent oil-based mud might turn into three or four
11 barrels of airspace in that landfill and ultimately
12 consume -- it will consume the limited airspace of the
13 landfill more quickly.

14 And so we see throughout -- not just Texas
15 and New Mexico but throughout the oil field, we see
16 oilfield waste landfills fill up very quickly because
17 they're using a lot of drying agents to be able to
18 process fluid waste.

19 Milestone's process, we inject 97 to 98
20 percent of the waste that we get. So those same
21 materials that are coming in, instead of being bulked up
22 and ultimately filling up -- instead of one barrel
23 ultimately filling up three barrels of airspace in the
24 landfill, we are injecting 97, 98 percent of that waste
25 stream, isolating it in formations that have been deemed

1 geologically safe to receive it, and I am putting a much
2 smaller amount of material into the landfill itself.

3 Also, we view -- in our opinion,
4 contaminated fluid waste streams are much more likely to
5 contaminate soil or groundwater if they're -- if they're
6 stored for permanent disposal at the surface.
7 Groundwater technically ranges from 100 feet to 1,000
8 feet, and I think in this particular case, that range is
9 roughly correct. So managing waste by storing
10 permanently at the surface is more likely to contaminate
11 soil and more likely to contaminate usable groundwater.

12 Taking those same contaminated waste
13 streams and injecting them -- and I think our injection
14 interval here -- at the top of the injection interval is
15 about 5,500 feet -- we have -- we have substantial
16 confining zones that isolate that waste stream
17 between -- in the area where it's ultimately disposed
18 gets isolated from groundwater to a much greater degree
19 than any other option for disposing of these drilling
20 wastes.

21 **Q. And just so we're clear, when you talk about**
22 **contaminated waste, we're only talking about RCRA**
23 **nonhazardous waste?**

24 A. Yes. That's correct.

25 **Q. And was Exhibit 2 derived from Milestone's**

1 **business records?**

2 A. Exhibit 2? Yes.

3 MR. LARSON: I would move the admission of
4 Exhibit Number 2.

5 MR. CARR: No objection.

6 MR. RANKIN: No objection.

7 MS. ANTILLON: No objection.

8 EXAMINER McMILLAN: Exhibit 2 may be
9 accepted as part of the record.

10 (Milestone Environmental Services, LLC
11 Exhibit Number 2 is offered and admitted
12 into evidence.)

13 MR. LARSON: I will pass the witness.

14 CROSS-EXAMINATION

15 BY MR. CARR:

16 **Q. Mr. Rio, I have just a couple of questions.**

17 **First of all, all the product coming into**
18 **the injection well site will be trucked in; is that**
19 **correct?**

20 A. Yes. That's generally true. The drilling
21 waste streams have to come in by truck. You just don't
22 pipe drilling waste streams long distances. We may have
23 small volumes of saltwater disposal that would get piped
24 in, but we don't have any plans to do that at this time.

25 **Q. How much additional truck traffic do you**

1 **anticipate this is going to create in this area?**

2 A. Well, to the trucks that are hauling the waste
3 streams that come to Milestone are already on the road.
4 It's just a question of where they're going. A typical
5 facility for Milestone might receive -- a busy facility
6 in the Permian, which this would certainly be, might
7 receive somewhere between 50 and 125 truckloads in a
8 day, would be typical.

9 **Q. Do you foresee any problems with additional**
10 **development in the immediate area? Concho has some**
11 **plans to development additional wells in the immediate**
12 **area. Do you see any problem with this additional truck**
13 **traffic or any problem with additional travel that will**
14 **be required on those roads at the time the wells are**
15 **drilled?**

16 A. No, I don't. I think we are, you know, located
17 off of -- I think we're located right off of Highway
18 128, which provides good road access into the facility.
19 You know, further, by putting a facility here in this
20 location, that enables operators like Concho to be able
21 to transport their drilling waste a shorter distance.
22 So instead of -- so Concho can send its waste to
23 Milestone, which will be close to their existing
24 operations instead of having to send it, you know,
25 further north into other -- other oilfield waste

1 disposal facilities or send it further south into Texas.
2 So it actually should reduce -- should reduce the truck
3 traffic on the roads for the state.

4 Q. And you discussed generally what you do with
5 the fluids that come in -- or the waste that comes into
6 your facility, and you filter out things and you do
7 various things that are proprietary. I understand. But
8 by removing certain things from -- first of all, you
9 bring in things which you might not ordinarily bring in
10 like tank bottoms, if I understand, and then you remove
11 things from the stream before you inject; is that
12 correct?

13 A. That's correct. Yeah. We remove some solids.

14 Q. In going through this process, does it make it
15 easier for you to inject a larger volume in that well,
16 or does it restrict that volume that can be injected, or
17 is there a pattern?

18 A. I don't understand the question.

19 Q. I take a stream that comes in. I filter things
20 out, and then I inject it.

21 A. Uh-huh.

22 Q. Am I able to put more in that well after I
23 filter these things out? Will it take more typically,
24 or will it receive or accept less?

25 A. We haven't really seen a correlation there with

1 regard to how much we filter out. I think that -- it's
2 important for us in the way we manage our business, we
3 measure the geological response and the pressure
4 response of the wells based on how much we're filtering
5 out. We also have to do -- we do some routine
6 maintenance on the wellbores, too. So if we put too
7 much solids into the wellbore, we might have to, you
8 know, get in there with coil tubing a little bit more
9 frequently to clean it out, but that's something we
10 normally do.

11 **Q. And you do that normally as you are in the**
12 **process of injecting into this well?**

13 A. That's correct.

14 **Q. Thank you.**

15 MR. RANKIN: Mr. Examiner, I have a few
16 questions.

17 CROSS-EXAMINATION

18 BY MR. RANKIN:

19 **Q. Mr. Rio, do you have a sense at this time what**
20 **portion of your injected fluids are going to be**
21 **comprised of produced water or flowback water?**

22 A. It's impossible for me to identify. It depends
23 on the demand for -- from our customers. So I can tell
24 you across the other seven facilities that we operate,
25 about half of the -- half of the waste that comes

1 into -- the volume that comes into our facilities tends
2 to be clean water that could go to any other SWD. The
3 other half of the waste stream tends to be drilling
4 fluids or completion fluids or tank bottoms.

5 Q. And in your proposal here, are you focused more
6 on the drilling fluids? Is that the focus of your
7 market here in your proposed well?

8 A. Yes. That's right.

9 Q. And so at this point, you can't say, because
10 you don't have -- you don't know exactly what the demand
11 is, what the contracts are, what you're going to be
12 servicing at this point for this well?

13 A. That's correct.

14 Q. Now, on the operation of this SWD, I understand
15 that the Division's going to require you to obtain a
16 surface waste management facility permit?

17 A. That's my understanding. They've asked us to
18 apply for one.

19 Q. Now, is the operation of this SWD dependent
20 upon the simultaneous operation of this surface waste
21 management facility? In other words, can you inject --
22 do you have plans to inject and dispose of your fluids
23 even if you do not get a permit for the surface waste
24 management facility?

25 A. I can't say at this moment. I mean, I think

1 that even with a permit -- with just a single permit to
2 inject, without a permit for a larger surface facility,
3 we would still be able to inject salt water through the
4 normal regulations. It would change our business model
5 at this site, but it's -- does that answer your
6 question?

7 Q. I think so.

8 I guess my question is: In other words,
9 if -- based on your unique process, is the injection
10 dependent upon the processes that you're going to be
11 doing under the surface waste management facility
12 permit?

13 A. Oh, I see. In order to inject slurries like we
14 do at our other facilities, proper processing of that
15 waste at the surface is important to the injection of
16 the waste.

17 Q. So under the current business model, you would
18 need that permit to be approved in order to do the
19 slurry injection process that you are describing?

20 A. Yeah. I think the permitting requirements are
21 up to the State of New Mexico, but yeah, we do need to
22 have the proper process at the surface in order to
23 process that field to inject into.

24 Q. So as we here stand today, if -- if that -- if
25 that permit gets held up or if it gets delayed or if it

1 doesn't get approved, you still have the intention to
2 proceed to inject clean produced water through this
3 well?

4 A. That's an option we'd like to retain. Yes.

5 Q. Okay. No further questions.

6 MS. ANTILLON: No questions.

7 EXAMINER GOETZE: Okay. My turn.

8 For disclosure purposes, I will say I have
9 met with Milestone earlier this year to review their
10 application. Noting that it was in the Delaware
11 Mountain Group, I recommended that it go to hearing, so
12 that's why you're here today.

13 The second item, I'm assuming that the
14 C-108 provided as Exhibit A during your application will
15 be the C-108 of record for this well?

16 MR. LARSON: That is correct. And I didn't
17 reproduce it to save part of a tree.

18 EXAMINER GOETZE: I'll leave that among the
19 lawyers.

20 CROSS-EXAMINATION

21 BY EXAMINER GOETZE:

22 Q. One of the concerns I raised earlier in this
23 application was the fact it submitted for a
24 20,000-barrel-per-day application. Do you have any
25 comments as to what a realistic number for this

1 **operation -- what it would require?**

2 A. Our -- our facilities -- so the
3 20,000-barrels-a-day is appropriate for a water-only
4 facility. Our facilities in Texas, I think our largest
5 injection day at any one facility is around 16- or
6 17,000 barrels in a day, which is a big day. So our
7 facilities are generally lower volume than, say, Solaris
8 SWDs would be.

9 Q. So based upon prior testimony, what I'm hearing
10 out of Milestone is if the surface facility doesn't go
11 through, then Milestone would still like to consider
12 this as a straight saltwater disposal well; is that
13 correct?

14 A. Correct.

15 Q. Do you have plans for any other additional
16 wells in this area?

17 A. Not at this time.

18 Q. Based on your history or operations in Texas, I
19 noticed that the total suspended solids are 35,000 parts
20 per million. How does this affect the reservoir, or do
21 you have someone better qualified?

22 A. I will defer to my other experts.

23 Q. To your experts?

24 A. Yes.

25 Q. We will hold that question for later.

1 A. Thank you.

2 **Q. No more questions. Thank you.**

3 EXAMINER McMILLAN: I don't have any
4 questions.

5 EXAMINER MURPHY: No questions.

6 REDIRECT EXAMINATION

7 BY MR. LARSON:

8 **Q. I have one follow-up, Mr. Rio. Based on the**
9 **well design and your potential operations of this**
10 **facility, would your average injection for produced**
11 **water be in the range of 6,000 barrels a day?**

12 A. Yes. I think that's an ordinary -- an ordinary
13 level.

14 MR. LARSON: That's all I have,
15 Mr. Examiner.

16 LESTER WAYNE PRICE,
17 after having been previously sworn under oath, was
18 questioned and testified as follows:

19 DIRECT EXAMINATION

20 BY MR. LARSON:

21 **Q. Good morning, Mr. Price.**

22 A. Good morning.

23 **Q. Would you state your full name for the record?**

24 A. Lester Wayne Price.

25 **Q. And where do you reside?**

1 A. In Rio Rancho, New Mexico.

2 Q. And what is the name of your company?

3 A. Price, LLC.

4 Q. And have you been retained by Milestone for the
5 purposes of obtaining the necessary regulatory approvals
6 for the proposed Beaza SWD No. 1 well?

7 A. Yes.

8 Q. And have you previously testified at Division
9 and Commission hearings?

10 A. I have.

11 Q. And did you provide testimony both as the chief
12 of the Division Environmental Bureau and as a private
13 consultant?

14 A. Yes.

15 Q. And at each of those hearings, were you
16 qualified as an expert in either environmental
17 engineering or Division regulatory matters or both?

18 A. I was.

19 MR. LARSON: Mr. Examiner, I tender
20 Mr. Price as an expert in environmental engineering and
21 Division regulatory matters.

22 MR. CARR: No objection.

23 MR. RANKIN: None from me.

24 MS. ANTILLON: No objection.

25 EXAMINER McMILLAN: So qualified.

1 Q. (BY MR. LARSON) Mr. Price, did you prepare the
2 C-108 that was submitted to the Division for
3 administrative approval?

4 A. I did.

5 Q. And that's the same C-108 that Mr. Goetze asked
6 if it's the application of record in this case?

7 A. Yes.

8 Q. And in the process of preparing the C-108, did
9 you identify all of the affected persons who were
10 entitled to receive notice as required by 19.15.27 and
11 19.15.26.8?

12 A. I did.

13 Q. And did all the affected persons receive your
14 certified mail notice letter?

15 A. They did.

16 Q. And did any of those affected persons protest
17 the administrative application?

18 A. They did not.

19 Q. And as Mr. Goetze indicated, the Division
20 subsequently informed you that the application would
21 have to go to hearing; is that correct?

22 A. That's correct.

23 Q. And was additional personal notice of the
24 hearing on Milestone's C-108 also provided to the
25 affected persons that you had previously identified?

1 A. Yes.

2 **Q. And would you identify the exhibit marked as**
3 **Exhibit 3? It's in that --**

4 A. Yes. This is the -- the first page is the main
5 list for all the pooling letters that we sent out, and
6 there is a list of a number of companies and people and
7 agencies.

8 **Q. And does the exhibit also include a sample of**
9 **the notice letter and all of the green cards?**

10 A. Yes, it does.

11 **Q. And just for clarification, if you look at the**
12 **first page of the exhibit, these were not pooling**
13 **letters. These were notice letters of the --**

14 A. Oh, that's correct. Yes. That's right,
15 pursuant to the 108 requirements.

16 **Q. And were the hearing notice letters prepared**
17 **and sent under your direction and supervision?**

18 A. Yes.

19 **Q. And did all of the affected persons identified**
20 **in Exhibit 3 receive the letter?**

21 A. Yes, they did.

22 **Q. And as Mr. Goetze pointed out, after you filed**
23 **your administrative application, you met with**
24 **Mr. Goetze. And I don't know. Were there other**
25 **Division representatives attending that meeting?**

1 A. Yes, there was.

2 **Q. And at that time, did the Division point out**
3 **any deficiencies in the administrative C-108**
4 **application?**

5 A. No deficiencies in the application.

6 **Q. And during your meeting, were any other**
7 **Division regulatory approvals discussed?**

8 A. Yes. During the meeting, we did discuss the
9 C-137 process application, whether it would be
10 applicable for this site.

11 **Q. And in your opinion, should a solid waste**
12 **management permit be required for this facility?**

13 A. No.

14 **Q. And why is that?**

15 A. Well, first of all, as bureau chief, I was part
16 of this rulemaking process, and it was never our intent
17 to include such facilities as extended type SWD
18 operations. And this rule -- the intent of this rule
19 was strictly for large integrated disposal facilities
20 where waste is actually disposed of on-site and are
21 build up into large mounds, typically what you see in
22 municipal landfills, et cetera, et cetera. And so
23 that's the reason, in my opinion, it doesn't meet the
24 definition of a surface waste management facility.

25 **Q. But, nevertheless, the Division is requiring**

1 **Milestone to obtain a solid waste permit?**

2 A. They are. They are.

3 **Q. Are all of the fluids that Milestone intends to**
4 **inject considered to be produced water as defined by the**
5 **Division's regulations?**

6 A. They are.

7 **Q. And in your C-108, did you provide information**
8 **about drinking water sources and proximity to the**
9 **proposed SWD well?**

10 A. Yes. I did a comprehensive water study.

11 **Q. And did you prepare the C-137 application for**
12 **Milestone?**

13 A. I did.

14 **Q. And what is the current status of that**
15 **application?**

16 A. It's pending.

17 **Q. And did you also conduct an analysis of the**
18 **produced water that Milestone will inject?**

19 A. I did.

20 **Q. And is that analysis included in your C-108?**

21 A. I believe it was. Yes. Uh-huh. It should
22 have been.

23 **Q. And did you compare the produced water to**
24 **injection interval water to address whether there are**
25 **any compatibility issues?**

1 A. I did. I had obtained water from the Delaware
2 Mountain Group in that particular area, and I made a
3 comparison of that water versus the injected water
4 from -- typical injection water from Milestone. And
5 just from my experience and my chemical background as
6 a -- years ago I was in the oilfield chemical training
7 business. It's primarily the same water. To back that
8 up, though, I went ahead and I plotted all of the cats
9 and ends [sic] onto a -- what's called a trilinear
10 diagram or a bifurdiagram. And in both cases -- or in
11 in all cases of the water I saw in the area, they all
12 fall into the same classification as basically sodium
13 chloride water.

14 **Q. Would you identify the document marked as**
15 **Exhibit 4?**

16 A. Yes. This is the -- this is the water analysis
17 of that -- the results of a water analysis that I
18 collected at the Milestone Orla Facility, which is just
19 right across the state line.

20 **Q. And is this a true and correct copy of Hall**
21 **Environmental's lab analysis?**

22 A. Yes, it is.

23 **Q. And what is your interpretation of the sampling**
24 **results?**

25 A. Well, as said before, I looked at this and

1 plotted it on the trilinear diagram, and it really is a
2 very, very representative sample of what typically would
3 be injected into produced waters in that area.

4 **Q. And what were the levels of TDS in the water**
5 **samples you took from the Orla Facility?**

6 A. Okay. The TDS, just looking here, was 87,800
7 parts per million or milligrams per liter.

8 **Q. And about total suspended solids?**

9 A. And suspended solids was in the range 35,000
10 milligrams per liter.

11 **Q. And in your opinion, do those two levels**
12 **compare to other salt water that's disposed in SWD --**

13 A. From my experience, this water is super clean
14 compared to my experience of what I've seen some waters
15 that go down some SWD wells. And so these suspended
16 solids, it's only about 3 percent at the most, and it's
17 not going to present any kind of problem whatsoever.

18 **Q. Mr. Rio was asked a question about the level of**
19 **solids that remain in the water that's produced.**

20 A. Uh-huh.

21 **Q. Is it in Milestone's best interest to remove as**
22 **many solids as possible to defer maintenance on the**
23 **well?**

24 A. Absolutely.

25 **Q. And we talked with Mr. Rio about the average**

1 daily injection rate included in the C-108. That was
2 20,000?

3 A. That's correct.

4 Q. But we've established the average would be more
5 in the range of 6,000 barrels a day?

6 A. 6,000. That's correct.

7 Q. Is Milestone nonetheless asking for approval of
8 20,000 -- approval of a daily maximum of 20,000 barrels?

9 A. Yes.

10 Q. And in your opinion, will Milestone's disposal
11 process have environmental benefits?

12 A. Oh, absolutely. I don't know if I could do a
13 better job than what Mr. Rio did, but yes.

14 But from -- from being in the -- even in
15 the disposal business a few years ago, I can tell you
16 that his comment about building -- reducing the amount
17 of waste that goes into our landfills nowadays should be
18 something of extreme primary interest, because if you --
19 if you've gone by some of these facilities, it's the
20 only mountains in Lea County (laughter). So they are
21 several feet high, maybe 100, 150 feet high. And so
22 yes. In order -- if we can reduce that bulking ratio
23 and then I think the environmental impact will be
24 extremely less than what it was before.

25 I would like to add one thing. When --

1 when you dilute something with clean soil -- clean soil
2 is a natural resource, and it's something that we
3 shouldn't be using nowadays to help dilute waste to go
4 into a landfill. It's my opinion that shouldn't be
5 allowed.

6 The other thing is just because you dilute
7 this waste with clean soil in order to pass the
8 paint-filter test so it can go into the landfill,
9 theoretically you haven't removed that water. You
10 haven't removed the liquid. You've just diluted it.
11 Now, there is some question whether did you make it less
12 mobile or not. But in huge landfills that we're seeing
13 now where the top of the landfill is in the hundreds of
14 feet, the primary head on that water is going to go
15 down, and some of the large landfills we have are not
16 lined. And so, therefore, that water is going to end up
17 in the groundwater any way you look at it. There is no
18 question about it.

19 So this projet to me has been -- I'm
20 surprised that someone hasn't done this before. It's
21 great.

22 MR. LARSON: Mr. Examiner, I move the
23 admission of Exhibits 3 and 4.

24 MR. CARR: No objection.

25 MR. RANKIN: No objections.

1 MS. ANTILLON: No objections.

2 EXAMINER McMILLAN: Exhibits 3 and 4 may
3 now be accepted as part of the record.

4 (Milestone Environmental Services, LLC
5 Exhibit Numbers 3 and 4 are offered and
6 admitted into evidence.)

7 MR. LARSON: And I will pass the witness.

8 CROSS-EXAMINATION

9 BY MR. CARR:

10 Q. Mr. Price, one short question. I look at the
11 C-108. You have the half-mile area of review, and you
12 have a map that covers wells in two-mile --

13 A. Two-and-a-half miles, I believe.

14 Q. Okay. Where does that two-and-a-half-mile
15 number come from?

16 A. Well, the reason we did that --

17 Q. Yeah.

18 A. -- we had a 40-acre -- or I'm sorry -- a
19 10-acre tract out there, and so we didn't exactly know
20 at that time where the center point or where the well
21 would be drilled on that. And so just out of an over
22 abundance of precaution, we extended up to
23 two-and-a-half miles to make sure we know to identify
24 all the wells in the area.

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

CROSS-EXAMINATION

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BY MR. RANKIN:

Q. Let's see. A couple of questions, Mr. Price. I believe that your testimony was that when the C-108 was filed administratively, that notice was provided to all the parties within the area of review; is that right?

A. That's correct.

Q. But I just was -- just me. I was looking through the C-108 attached to the application. I didn't see -- maybe I missed it -- where the -- demonstration that notice was sent to each of those parties. Is it part of that C-108?

A. It should be in there. Yeah. It's in there.

Q. I just wanted to make sure. I think I saw the -- I think I saw the notice -- Notice of Publication, the legal ad, but I didn't see any reference to the others or the green cards that were sent out to the parties.

A. It was submitted.

Q. Okay.

A. Yeah.

Q. Okay. Just wanted to confirm that.

Then the testimony about the average or expected volume of injection of 6,000 barrels per day,

1 is that --

2 A. Five to six. Uh-huh. Right.

3 Q. Now, is that -- is it your understanding it
4 would be the same in the case if the surface waste
5 management facility aspect of this project were not
6 approved? Do you understand that that volume would
7 still be about 5- to 6,000 barrels per day, or would
8 that change if their business model were to change and
9 then have to focus just on disposal of produced water?

10 A. I'm sorry. Rephrase your question or repeat it
11 so I can fully understand.

12 Q. Yeah. The testimony is that the volume of
13 injection is expected to be 5- to 6,000 barrels per day.

14 A. That's correct.

15 Q. My question is: If the surface waste
16 management facility, which is part of the overall, you
17 know, business model plan currently, is not approved,
18 will that average injection rate change in any way?

19 A. I have never anticipated that question. I
20 haven't discussed it with anyone, but I think Mr. Rio
21 covered it.

22 Q. So you just don't know one way or the other?

23 A. I really don't know.

24 Q. That's fine.

25 That's all my questions.

1 MS. ANTILLON: No questions from the State
2 Land Office.

3 EXAMINER GOETZE: Oh, my turn. Very good.

4 CROSS-EXAMINATION

5 BY EXAMINER GOETZE:

6 Q. Good morning, Mr. Price.

7 First of all, congratulations on finding
8 only one well in the AOR and getting a water sample of
9 it. That is a good record.

10 I only have one other thing in regard to
11 C-108. The affirmation statement here has listed two
12 consultants. I would state that Wayne Price, Price,
13 LLC, that you were the person who made that affirmation?

14 A. That's correct, sir.

15 Q. Okay. And Mr. Larson will ask Lonquist, when
16 they get up, who made their affirmation statement to
17 endorse this statement. Okay?

18 MR. LARSON: Yes.

19 EXAMINER GOETZE: Other than that, I have
20 nothing.

21 CROSS-EXAMINATION

22 BY EXAMINER McMILLAN:

23 Q. How come you chose the Delaware versus the
24 Devonian?

25 A. That -- that was a decision that Milestone

1 requested us to look at because they have a -- I'll call
2 it -- maybe it's going to be a sister facility down
3 across the state line, and they're in the Delaware.
4 They're disposing of it in the Delaware.

5 **Q. So is the density any different in the**
6 **injected -- in the Orla Facility versus a normal SWD,**
7 **because I'm concerned about the downward migration?**

8 A. Very little difference. Very little
9 difference. Not enough there to make -- make any
10 concern whatsoever, in my opinion.

11 To add to that, in my experience, I have
12 seen numerous SWD wells that were operated, in my
13 opinion, improperly that were approved that basically
14 were putting -- excuse the French -- crap down the hole.
15 And in this particular case, this water is almost like
16 slick water brine when I observed it and when I sampled
17 it, and it's pretty clean stuff. I'll tell you, it
18 looks good. It's very compatible with the Delaware
19 water, and like I said, I performed -- plotted this on a
20 trilinear diagram, and it falls right in the same
21 quadrant. They're very, very compatible.

22 EXAMINER MURPHY: No questions.

23 EXAMINER BRANCARD: No questions.

24 EXAMINER McMILLAN: Okay.

25 MR. LARSON: Thank you, Mr. Price.

1 PARKER L. JESSEE,
2 after having been previously sworn under oath, was
3 questioned and testified as follows:

4 DIRECT EXAMINATION

5 BY MR. LARSON:

6 Q. Good morning, Mr. Jessee.

7 A. Good morning.

8 Q. Would you state your full name for the record?

9 A. Parker Lee Jessee.

10 Q. I understand that you spelled your name for
11 Mary?

12 A. I did.

13 Q. And where do you reside?

14 A. Houston, Texas.

15 Q. And by whom are you employed and in what
16 capacity?

17 A. Lonquist & Company, and I am a staff geologist.

18 Q. And in that role, do you have experience with
19 oil and gas operations in southeast New Mexico?

20 A. Yes, I do.

21 Q. And are you familiar with the geological
22 matters that pertain to Milestone's SWD application?

23 A. Yes, I am.

24 Q. Have you previously testified at a Division
25 hearing?

1 A. No, I haven't.

2 **Q. And in light of that, would you summarize for**
3 **the examiners your educational background and**
4 **professional experience?**

5 A. I graduated from Texas A&M University with a BS
6 in geology in 2014, and then since then was hired by
7 Lonquist and have worked there since. And in my
8 services there, I've helped permit SWDs in the Permian
9 Basin and help out with any geological needs from an
10 injection standpoint.

11 MR. LARSON: Mr. Examiner, I tender
12 Mr. Jessee as an expert in petroleum geology.

13 MR. CARR: No objection.

14 MR. RANKIN: No objection.

15 MS. ANTILLON: No objection.

16 EXAMINER McMILLAN: So qualified.

17 **Q. (BY MR. LARSON) Mr. Jessee, what are the upper**
18 **and lower depths of the proposed injection interval?**

19 A. 5,497 feet to 7,240 feet.

20 **Q. And what formations does the interval include?**

21 A. The Bell Canyon and the Upper Cherry Canyon.

22 **Q. Those are both in the Delaware Mountain Group?**

23 A. Yes, sir.

24 **Q. And you have in front of you exhibits marked as**
25 **Numbers 5 through 10. Did you prepare all of these**

1 **exhibits?**

2 A. Yes.

3 **Q. And would you identify the first one which is**
4 **marked as Exhibit 5?**

5 A. Exhibit 5 is a top of Bell Canyon structure map
6 subsea -- subsea structure map with a 50-foot contour
7 interval on the Bell Canyon.

8 **Q. And what does your map tell us about the Bell**
9 **Canyon Formation?**

10 A. Just the structural trend from moving updip
11 from southeast to northwest.

12 **Q. And is there a geologic barrier at the top of**
13 **the Bell Canyon Formation?**

14 A. Yes, there is, in the Salado and Castile
15 Formations that are anhydrites and salts.

16 **Q. Would you identify Number 6, please?**

17 A. That is the top of Cherry Canyon structure map
18 subsea.

19 **Q. Okay. And what does this exhibit tell us about**
20 **the Cherry Canyon Formation?**

21 A. Just the general trend of the Cherry Canyon
22 Formation similar to the Bell Canyon, trending updip
23 from the southeast to northwest.

24 **Q. And in your opinion, is there any faulting in**
25 **the Cherry Canyon?**

1 A. No.

2 Q. Would you identify the document marked as
3 Exhibit 7?

4 A. That would be the top of Brushy Canyon
5 structure map subsea.

6 Q. And, again, could you explain what this exhibit
7 tells us about the --

8 A. Similar trends as the other maps, trending
9 updip as you go from southeast to northwest.

10 Q. So you don't see a lot of variation from the
11 Bell --

12 A. No.

13 Q. -- through the Brushy?

14 A. No.

15 Q. Do you see any indications of faulting in the
16 Brushy Canyon?

17 A. No.

18 Q. Would you identify the document marked as
19 Exhibit 9?

20 A. This would be the top of Bone Spring structure
21 map subsea.

22 Q. Does it include the Avalon -- what many
23 geologists refer to as the Avalon Shale?

24 A. Yes, it does.

25 Q. And what does your exhibit reveal about the top

1 of the Avalon Shale?

2 A. Similar trend to the other maps, dipping
3 upwards towards the northwest.

4 Q. And what is the distance between the bottom
5 depth of the proposed injection interval and the top of
6 the Avalon Shale?

7 A. I believe it is 2,030 feet.

8 Q. And are there any geological barriers between
9 the base of the proposed injection interval and the top
10 of the Avalon Shale?

11 A. Yes.

12 Q. Could you describe those, please?

13 A. There are quite a few siltstone stringers that
14 go from the base of our injection interval down to the
15 top of the Avalon Shale that we believe to be
16 impermeable, and we see them carried out through our
17 area as laterally extending. And those would be our
18 barriers between our bottom of injection to the Avalon
19 Shale.

20 Q. Would you identify the document marked as
21 Exhibit 9?

22 A. Exhibit 9? Oh, that is the cross-section
23 reference map.

24 Q. And the purpose of that is to identify the
25 wells indicated in your next exhibit, cross section?

1 A. Yes.

2 **Q. And is Exhibit 10 your cross section?**

3 A. Yes, sir.

4 **Q. And please describe what this exhibit is**
5 **intended to depict?**

6 A. Just the strata of the injection interval and
7 where we're planning on injecting and also structurally
8 the trend on that cross-section strike, and it also
9 depicts the stringers that we believe are laterally
10 across this area that would be our impermeable confining
11 layers.

12 **Q. And would you identify the document marked as**
13 **Exhibit 11?**

14 A. This is a porosity-versus-depth trend of the
15 wells that we analyzed in our area for a petrophysical
16 standpoint. And as you can see, the trend is as you get
17 deeper with depth, your porosity gets pretty tight. And
18 so as you get to the bottom of our injection interval,
19 it's only getting tighter and tighter and allowing it to
20 be another form of evidence that it can be confining
21 between the base of our injection to the top of the
22 Avalon Shale.

23 **Q. And has Lonquist assessed the issue of**
24 **potential injection and induced seismicity?**

25 A. Yes.

1 Q. In that regard, would you identify Exhibit 12?

2 A. This is the parameters we put into the USGS to
3 identify if there were any seismicity events.

4 Q. And what were your distances --

5 A. 9.08 kilometers, which I think is equivalent to
6 around 5.6 miles.

7 Q. And is that the parameter that the Railroad
8 Commission requires in Texas?

9 A. Yes.

10 Q. And what is Exhibit Number 13?

11 A. Exhibit 13 is the results of that search.

12 Q. And what were those results?

13 A. Zero seismic events.

14 Q. And in your opinion, is there any realistic
15 possibility of seismic activity resulting from
16 Milestone's proposed injection of produced water?

17 A. No.

18 Q. And in your opinion, is there any possibility
19 of a produced -- of produced water migrating into
20 oil-producing zones?

21 A. No.

22 Q. Were Exhibits 11, 12 and 13 prepared by
23 Lonquist representatives under your direction and
24 supervision?

25 A. Yes.

1 MR. LARSON: Mr. Examiner, I move the
2 admission of Exhibits 5 through 13.

3 MR. CARR: No objection.

4 MR. RANKIN: No objection.

5 MS. ANTILLON: No objections.

6 EXAMINER McMILLAN: Exhibits 5 through 13
7 may now be accepted as part of the record.

8 (Milestone Environmental Services, LLC
9 Exhibit Numbers 5 through 13 are offered
10 and admitted into evidence.)

11 MR. LARSON: And I pass the witness.

12 MR. CARR: No questions.

13 MR. RANKIN: None from me.

14 MS. ANTILLON: No questions.

15 EXAMINER GOETZE: All right.

16 CROSS-EXAMINATION

17 BY EXAMINER GOETZE:

18 Q. Good morning.

19 A. Good morning.

20 Q. First item, in your testimony you referred to
21 the lower confining layer as being a series of
22 stringers. In my days of geology, this would indicate
23 something that is not as continuous and as dominant as
24 seen through a series of heater cores or logs to provide
25 a level of confidence. Your interpretation was based on

1 **locations of wells separated by how far?**

2 A. In the cross section, you can see the distances
3 between the wells.

4 **Q. Uh-huh.**

5 A. One is 10,000 feet, 3,000 feet, so miles of
6 distance.

7 **Q. With that in mind, was there any type of**
8 **investigation as to fractures or any information with**
9 **regard to producing wells in this area to look at**
10 **characteristics of the reservoir in preparing your**
11 **information?**

12 A. Pulling on offset papers of producing intervals
13 out of the Delaware was, but there is no production
14 relatively close here, so the closest fields, I guess,
15 in any sort of paper.

16 **Q. What is the closest production out of any**
17 **portion of the Delaware Mountain Group in this area?**

18 A. I couldn't tell you. It's pretty far. Not in
19 our area of interest.

20 **Q. And did you look at the performance of any**
21 **other Delaware Mountain Group disposal wells in this**
22 **area?**

23 A. No, we did not.

24 **Q. No further questions. Thank you.**

25

CROSS-EXAMINATION

1

2 BY EXAMINER McMILLAN:

3 Q. Okay. I guess it looks like I'm looking at
4 Exhibit 10. And is the closest well the Pitchfork #1?

5 A. That is the closest well on the cross section.
6 Yes. Or I guess technically the Madera well is a little
7 closer. It's 4,000 feet.

8 Q. Well, if you -- where -- looking at these --
9 looking at these wells, I'm hard pressed to see a good,
10 hard shale stringer. Those silt stringers are liable to
11 be baffles. That's the overriding concern that I'm
12 getting out of it.

13 A. So there are stringers found at the top of my
14 Brushy Canyon pick, and they're about 30 feet thick.
15 And as you see at the base of our injection interval in
16 that Pitchfork well, you'll see these siltstone
17 stringers, and you can actually carry some of them over
18 to the offset wells. And so that's what we believe as
19 being laterally extending past what we believe our
20 pooling would extend, and those being our confining
21 layers.

22

CROSS-EXAMINATION

23 BY EXAMINER MURPHY:

24 Q. How thick is the Brushy Canyon?

25 A. Brushy Canyon in our area is 11,026 feet.

1 Q. And is that the thickness, on Exhibit 10, the
2 cross section? Is that the formation underneath the
3 injection zone --

4 A. Yes.

5 Q. -- that you have the red line?

6 A. Yes.

7 Q. And then Avalon is below it?

8 A. Yes. It's marked as top of Bone Spring, but
9 yes, that is the top of the Avalon.

10 Q. No more questions.

11 RE CROSS EXAMINATION

12 BY EXAMINER McMILLAN:

13 Q. Okay. I'm -- I'm confused because I'm looking
14 at the Pitchfork and it looks like it has a neutron
15 porosity log.

16 A. Yes.

17 Q. And it looks like you've got some shaley sand
18 in there. It looks like some of that shaley sand has
19 porosity of --

20 A. Right. But a siltstone might have porosity,
21 but it doesn't have permeability, similar to a shale.
22 You don't have permeability, but you have porosity. So
23 water can be held in it, but it can't go through. It's
24 impermeable.

25 Q. But do you see any spread on the dual

1 laterolog?

2 A. No spread on the dual. It looks pretty tight.

3 Q. Okay. So what would be the frac gradient in
4 here then?

5 A. That, we are -- I'll defer that to our next --
6 plume migration.

7 Q. Because the Delaware is notorious for not
8 handling frac jobs, going out of zone. That's the
9 concern that I'm getting.

10 A. We address that in our next --

11 MR. LARSON: Mr. Jordan will address that.

12 EXAMINER McMILLAN: Okay. All right. I'm
13 done.

14 MR. LARSON: I have nothing further.

15 Thank you, Mr. Jessee.

16 PETER W. JORDAN, Ph.D.,

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

19 DIRECT EXAMINATION

20 BY MR. LARSON:

21 Q. Good morning, Mr. Jordan.

22 A. Good morning.

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

24 A. Peter William Jordan.

25 Q. And where do you reside?

1 A. I reside in Houston, Texas.

2 **Q. And by whom are you employed?**

3 A. Lonquist & Company.

4 **Q. And what has been your role in Lonquist's**
5 **evaluation of Milestone's proposed SWD?**

6 A. I performed computer modeling to assess the
7 lateral spread -- lateral and vertical spread of the
8 plume and the lateral extents of pressure influence --
9 lateral and vertical intents of pressure influence.

10 **Q. So you also looked at pressure gradients?**

11 A. Yes. Uh-huh.

12 **Q. Have you previously testified at a Division**
13 **hearing?**

14 A. I have not.

15 **Q. And given that, would you summarize your**
16 **educational background and professional experience?**

17 A. I have a bachelor's and Ph.D. in biology from
18 UCLA. Subsequent to that, I taught for a time at LSU in
19 Baton Rouge and developed a class on migration of
20 pesticides in the environment, including in soils. And
21 then in 1992, I moved to an engineering consulting firm.
22 It was primarily dealing with injection wells, including
23 hazardous waste injection wells and also caverns --
24 cavern storage. And there and for the past 27 years,
25 now with Lonquist also, I dealt with plume migration and

1 pressure modeling.

2 MR. LARSON: Mr. Examiner, I tender
3 Mr. Jordan as an expert in petroleum engineering.

4 MR. CARR: No objection.

5 MR. RANKIN: No objection.

6 MS. ANTILLON: No objection.

7 EXAMINER McMILLAN: So qualified.

8 Q. (BY MR. LARSON) Mr. Jordan, what was the
9 overarching goal of the modeling that you performed?

10 A. Well, as I stated, to project the lateral
11 extent and vertical extent of the injected plume and
12 also the pressure influence, its lateral and vertical
13 extents.

14 The modeling that I did -- modeling
15 necessarily breaks up the world into a series of volumes
16 and projects migration among this matrix of cells. And
17 so I broke the world that I was modeling into -- into an
18 area extending approximately three miles in each
19 direction and into seven layers representing strata.
20 And when we get to the exhibits, I'll list what those
21 are.

22 Q. And what time period did your modeling cover?

23 A. The modeling represents injection at the
24 20,000-barrels-per-day maximum rate, 24 hours a day, all
25 year for 20 years.

1 **Q. And why did you pick 20 years?**

2 A. 20 years? That's commonly utilized as a
3 service life for this sort of demonstration in the
4 permitting process.

5 **Q. And what modeling program did you utilize?**

6 A. I utilized a program -- the acronym is SWIFT.
7 That stands for Sandia Waste Isolation Flow and
8 Transport model. And that is -- it's the model accepted
9 by the federal EPA for modeling hazardous waste
10 migration from hazardous waste injection wells. It was
11 originally developed to model radial nuclei migration
12 from -- from proposed locations of nuclear waste
13 repositories. It has -- it can model transport not only
14 of materials, fluid in the formation, injected fluid,
15 but also energy heat, if there is an issue, which there
16 is not here. But it's a very complete model.

17 **Q. And in your opinion, would it be considered the**
18 **standard in the industry?**

19 A. I believe so, yes, because certainly in -- in
20 the regulatory environment I deal with, as I said, EPA
21 accepts the results. The Texas Railroad Commission has
22 accepted these results in particular, you know, as
23 sophisticated, as being an acid gas disposal well, which
24 are a hot-button issue, and they have accepted the
25 results to that.

1 Q. And I'm going to address with you documents
2 that have been marked as Exhibits 14 through 16. Did
3 you prepare all of these exhibits?

4 A. Yes, I did.

5 Q. So let's start with Exhibit 14, and I'll ask
6 you to explain what this exhibit is intended to depict.

7 A. All right. Exhibit 14 depicts the extent of
8 the plume after the 20 years of injection at 20,000
9 barrels per day. It's plotted on the base of the
10 structure -- the subsection of Mr. Jessee's map of the
11 structure of the Bell Canyon primarily for -- for
12 orientation. But the model did include the effects,
13 which were very minor in this case, of rift driven by
14 the density contrast between the injected fluid and the
15 formation connate brine, the brine that's in the
16 formation. And the fluid sample that Mr. Price gave --
17 discussed was it's -- it's slightly lighter than we
18 expected, the brine is, in the formation, so migration
19 is slightly updip due to that.

20 But what we see then is the 0.01 denoted on
21 the blue contour. That denotes that the concentration
22 contour that I'm mapping is where the concentration in
23 the formation is 1 percent of what was injected at the
24 wellhead. Okay? Because these -- the plume that it
25 migrates will smear slightly. Okay?

1 The blue is the extent in the Bell Canyon
2 and Upper Cherry Canyon. That was the -- that was the
3 top layer of my model that encompassed the -- the
4 section that was directly in contact with the wellbore
5 down to the wellbore TD at 7,240.

6 And then the next layer down is the Cherry
7 Canyon, below the completion interval, and it had a
8 slight radius of -- migration in this case is -- is into
9 the Bell Canyon and Upper Cherry Canyon and then -- and
10 then downward, by the normal process of migration,
11 through porous media downward and into the Cherry
12 Canyon. And that's -- that's what the very small red
13 circle is around the well.

14 Beyond that, in none of the other -- the
15 other five layers below were concentrations above 1
16 percent anywhere. So you see that you just see the two
17 circles.

18 **Q. Anything you'd like to add with regard to**
19 **Exhibit 14?**

20 A. No. I believe that's it.

21 **Q. Let's move on to Exhibit 15.**

22 A. Exhibit 15 depicts the pressure rise in the --
23 well, I'm going to start with the Delta P. That is a
24 pressure rise in the Bell Canyon and Upper Cherry
25 Canyon. Again, that's the completion interval of the

1 well. And the blue curve that you see rise rapidly at
2 the date New Year's 2020, which was just my nominal date
3 for the beginning of service life, rises quite rapidly
4 and then adopts a more steady increase over the next 20
5 years. And that's the top blue curve that you see
6 there. Okay?

7 That -- these -- that particular pressure
8 rise is actually in the wellbore, and so it's a fair bit
9 higher than the next one, which is the purple one, which
10 is in the Cherry Canyon section below the well TD. And
11 that rises, as you see from the legend, to a max of 245
12 psi over the 20 years.

13 And then the layers below -- this is the
14 place where I list the layers, and so I'm going to add
15 some additional discussion here, just that the -- that
16 the very top stringer, when used by the geologist to --
17 to have a demarcation between the basis of the Cherry
18 and the top of the Brushy -- Brushy Canyon, that was --
19 there is a pretty continuous siltstone stringer. And so
20 I added that as a layer. And -- but then all of the
21 Brushy Canyon below was taken to be a homogeneous,
22 basically a sandstone type material. Then the Avalon
23 Shale at the top of the Bone Spring and then a lime and
24 a sand at the top of the Bone Spring.

25 So, again, we developed this model to

1 assess the -- the effects as we possibly could, and
2 hopefully let our neighbors know, you know, what -- if
3 there was any issue.

4 And the big bottom line here is that the --
5 that the maximum pressure increase in any layer below
6 the Cherry Canyon was -- you know, we're going 2 psi at
7 the next layer down and one-hundredths, you know,
8 fractures of psi below. So the pressure influence is
9 varied or it's, you know, total insignificant.

10 **Q. And has Lonquist calculated the frac gradients**
11 **in each of the formations to be included in the**
12 **injection interval?**

13 A. We have not directly calculated this, but we
14 have a lot of confidence that the fracture is --
15 fracturing is not going to be an issue. In particular,
16 considering the 763 psi that's seen -- that's the top
17 curve in Exhibit 15, that -- if you add that to the --
18 to the initial bottom-hole pressure -- the number
19 escapes me right now. But you add that and then
20 calculate the gradient for the top of the Bell Canyon.
21 It comes to .585 psi per foot. Okay? The reason we
22 feel pretty assured about that is because the -- the
23 default -- State of New Mexico assigns a default
24 surface-injection pressure equivalent to .2 psi per foot
25 of gap down to the top perforations. And so in this

1 case for this well, that would be -- I can't remember
2 what was on the application, but it's about 1,100 psi.
3 And if you have a standing water column in the wellbore,
4 which is really the best case for formation pressure,
5 the New Mexico default wellhead pressure is equivalent
6 to a downhole gradient of .65 psi per foot, which is,
7 you know, well above what we anticipate the greatest
8 pressurization.

9 **Q. Would you identify your last exhibit, which is**
10 **Number 16?**

11 A. All right. That's -- that's the lateral extent
12 of the pressure influence. And, again, as with the
13 other ones, a threshold for plotting had to be
14 established, and we selected that 217.6 psi Delta P as
15 being the -- as being the pressure that would support
16 migration up a completely open, unplugged hypothetical
17 wellbore. Okay? That's sort of the way you consider an
18 area -- an area of concern for -- for -- within many
19 regulatory programs, including the federal -- the
20 federal programs.

21 And so as I say, we call it the critical
22 pressure, and this was taken to be the pressure contour
23 that would be of concern. And that contour has a radius
24 of -- as you see from the legend, of .74 miles in the
25 Bell Canyon where injection is happening directly, and

1 .55 miles in the Cherry Canyon, and there was no
2 contour.

3 I'm sorry. I note a typo. That should
4 be -- in the legend, it should have the 217.6. These
5 radii correspond to the 217.6 psi contour. I'll write
6 it later. Yeah.

7 And, again, the same with the previous
8 exhibit, any of the lower -- the formations below the
9 completion zone of the well, the pressure -- the
10 pressure rise was not -- not a concern. I'll note also
11 just relative to those other formations that the
12 injection of the fluid that was somewhat lighter than
13 the brine. The native brine in these formations would
14 mean that -- that the -- that the pressure gradient
15 would be -- that this would have the effect of actually
16 lightening up the pressure gradient below. So yes.

17 **Q. And you heard testimony earlier about what**
18 **Milestone anticipates the average injection rate to be?**

19 A. Yes. Uh-huh.

20 **Q. And it was in the range of 6,000 barrels a day?**

21 A. Yes, I did.

22 **Q. So in light of that, would you consider your**
23 **modeling to be extremely conservative?**

24 A. It is extremely conservative, 24/7, 365 days,
25 20 years, full rate.

1 **Q. And in your opinion, do you see any potential**
2 **impact of the injection plume over 20 years on**
3 **producible hydrocarbons --**

4 A. No.

5 **Q. -- in the Delaware Mountain Group?**

6 A. No.

7 MR. LARSON: Move the admission of Exhibits
8 14 through 16.

9 MR. CARR: No objection.

10 MR. RANKIN: No objection.

11 MS. ANTILLON: No objection.

12 EXAMINER McMILLAN: Exhibits 14 through 16
13 may now be accepted as part of the record.

14 (Milestone Environmental Services, LLC
15 Exhibit Numbers 14 through 16 are offered
16 and admitted into evidence.)

17 MR. LARSON: And I will pass the witness.

18 MR. CARR: No questions.

19 MR. RANKIN: No questions.

20 MS. ANTILLON: No questions.

21 EXAMINER McMILLAN: Go ahead.

22 CROSS-EXAMINATION

23 BY EXAMINER GOETZE:

24 **Q. Good morning.**

25 A. Good morning.

1 **Q. So your modeling was based upon the original**
2 **concept of Milestone to have a facility with 6,000-**
3 **barrels-per-day injection; is that correct?**

4 A. Well, my modeling was for the 20,000 barrels
5 per day.

6 **Q. It was for the 20,000.**

7 A. I wanted to conform to the letter of the permit
8 application.

9 **Q. Did we look at anybody else in the neighborhood**
10 **as far as existing Delaware Mountain Group injection?**

11 A. We -- we looked at within a five-mile radius.
12 There were -- we had locations and some injection
13 history for the three conventional saltwater disposal
14 wells, not commercial, very low-rate wells. And they --
15 I did incorporate that into the plume modeling just to
16 look at movement of the plume, and it was very -- the
17 total effect was 8 feet in 20 years. Yeah.

18 **Q. So considering having looked at these wells, do**
19 **you think that 20,000 barrels a day is possible without**
20 **fracturing the formation?**

21 A. Yes, I do.

22 **Q. No further questions. Thank you.**

23 EXAMINER McMILLAN: I don't have any
24 questions.

25 EXAMINER MURPHY: No questions.

1 EXAMINER BRANCARD: No questions.

2 MR. LARSON: I have one more witness. Can
3 we take a five-minute break, please?

4 EXAMINER McMILLAN: Sure.

5 EXAMINER GOETZE: No. Suffer. Testimony
6 gets faster.

7 (Laughter.)

8 (Recess, 11:18 a.m. to 11:27 a.m.)

9 EXAMINER McMILLAN: Let's call the hearing
10 back to order.

11 MR. LARSON: Mr. Examiner, on to my last
12 witness, Mr. Davis.

13 BRIAN D. DAVIS,
14 after having been previously sworn under oath, was
15 questioned and testified as follows:

16 DIRECT EXAMINATION

17 BY MR. LARSON:

18 Q. Would you please state your full name for the
19 record?

20 A. Brian Douglas Davis.

21 Q. And where do you reside?

22 A. Houston, Texas.

23 Q. And what is the name of your company?

24 A. Oil & Gas Evaluation and Consulting, LLC.

25 Q. And do you work in conjunction with Lonquist on

1 matters such as this one?

2 A. I do.

3 Q. And what has been your role in the analysis of
4 Milestone's proposed well?

5 A. I have been tasked to look and ensure that
6 there are no hydrocarbons in the area of the saltwater
7 disposal well.

8 Q. And have you previously testified at a Division
9 hearing?

10 A. I have.

11 Q. And at that time, you were qualified as an
12 expert in petrophysics?

13 A. Yes, sir, I was.

14 MR. LARSON: Mr. Examiner, I tender
15 Mr. Davis as an expert in petrophysics.

16 MR. CARR: No objection.

17 MR. RANKIN: No objection.

18 MS. ANTILLON: No objection.

19 EXAMINER McMILLAN: So qualified.

20 Q. (BY MR. LARSON) Mr. Davis, I'm going to be
21 talking with you about Exhibits 17 through 25. Did you
22 prepare all of these exhibits?

23 A. Yes, sir, I did.

24 Q. Let's start with Number 17, and I'll ask you to
25 identify what it is.

1 A. It's a map of the wells surrounding the
2 proposed Beaza No. 1 location, and these were the wells
3 that we petrophysically evaluated in the process of
4 ensuring there were no hydrocarbons present in the
5 Delaware Mountain Group.

6 **Q. And why did you choose these wells?**

7 A. I chose these wells because they had full set
8 of data that was available for log interpretation.

9 **Q. And do you use a particular methodology to**
10 **assure quality control in your petrophysical analysis?**

11 A. Yes. One of the things I do -- because in
12 today's world we have, of course, paper copies, as well
13 as digital data, so one of the things -- and sometimes
14 you don't know the source of the digital data. So what
15 I always do is I get the original paper copy, and I take
16 the digital data and lay it back over the top to
17 quality-control the data to ensure that the digital data
18 matches the original paper copy data.

19 **Q. And do you take the Groningen effect into**
20 **account when you're conducting your analysis?**

21 A. Yeah. And as part of the QC process on this,
22 when I originally looked at three of the wells out here,
23 which were old laterolog-style wells, the wells, as you
24 initially looked at them, it appeared almost as if you
25 had pay in the top 200 feet of the log, which sort of

1 took me a bit aback and surprised me a bit. However,
2 when you start looking at some of the other curves, I
3 realized that the deep laterologs were reading
4 erroneously to the shallow logs. And after a little
5 more research, I realized that they were being affected
6 by anhydrite sequences at the casing set.

7 **Q. Would you identify the document marked as**
8 **Exhibit 18?**

9 A. Yeah. Exhibit 18 sort of demonstrates the
10 Groningen effect. And just a quick note on the
11 Groningen effect: It was first recognized in Holland,
12 which is why it's a hard-to-pronounce word. And what
13 basically it is is the old, deep laterologs returns the
14 current back to the surface, and when you have a thick,
15 like, anhydrite-type sequence at a casing set, it
16 usually affects that curve within a couple hundred feet.
17 And the example I gave here was 185 feet. And it varied
18 on the three laterologs only. You don't see this effect
19 on the induction logs, and you see a minimal amount of
20 effect on some of the other modern logs as well, but
21 it's more predominant on the older well logs.

22 **Q. And specific to Exhibit 18, would you explain**
23 **what your application of Groningen -- I guess is how you**
24 **pronounce it -- effect on the particular log?**

25 A. Yeah. And if you'll see here, there is -- the

1 red curve is the deep resistivity. That's the LLD
2 curve. You'll notice there is a green curve. This is
3 in the center. I'm sorry. This is in the center
4 logarithmic track. You'll see there is a green curve
5 that sort of goes straight line straight up the log.
6 You'll notice the red curve starts to increase
7 dramatically as you get closer to the casing, and that's
8 the area shaded in between in yellow. And so when you
9 typically encounter this effect as a petrophysicist,
10 you'll use the LLS curve to calculate the water
11 saturation across this interval because the LLD curve is
12 actually erroneous, and it will actually make it appear
13 as if there is pay when there is not.

14 **Q. And how did the Groningen effect affect your**
15 **analysis on the three wells indicated on Exhibit 18?**

16 A. It basically -- you know, once you got 200 feet
17 below casing, the effect disappears. And so it was just
18 the top part where I was able -- I was able to
19 substitute the shallow end for the deep to properly
20 calculate the interval immediately below the 200 feet of
21 casing or 185 in the exhibit.

22 **Q. Would you identify the exhibit marked as 19?**

23 A. Yeah. 19 was an offset well we had which
24 basically showed the base of the anhydrite sequence
25 right at the casing set point, and that anhydrite

1 sequence is effectively what was causing the phenomenon
2 of the Groningen effect that we had discussed earlier.

3 **Q. And did you review any data for a well for**
4 **which a drill-stem test was performed?**

5 A. I did. There was -- it's actually not on my
6 map, but I think it's on one of Parker's maps. We found
7 a well in Section 29, which is about a little over a
8 mile away from the Beaza saltwater disposal well, and
9 the API number was 02528171, I believe. And that well
10 had a drill-stem test. It was -- it drill-stem tested
11 water at 5,450, and the water was -- they described it
12 as sulfur water. I'm assuming it smelled funny, and,
13 therefore, they called it sulfur water. But there was
14 no indications of oil and gas and hydrocarbons, and that
15 well was actually on strike with the Beaza saltwater
16 disposal well. So we had a wet test that was a little
17 over a mile away from the Beaza well -- proposed Beaza
18 proposed location.

19 **Q. Let's focus now on Exhibit 20. What are you**
20 **intending to depict with this exhibit?**

21 A. Yeah. And this was really kind of part of the
22 quality control procedure. I put the six wells we
23 initially selected to evaluate. You'll notice that the
24 first two wells, they have a little blue LLD over them,
25 and you'll notice they're both shaded in the yellow

1 there in the tracks. And those two wells in blue and
2 then the far right well in blue, those were the three
3 laterologs that were actually affected by the Groningen
4 effect. You can sort of see it in a cross section.

5 And when you get to the two center wells,
6 the two wells marked "ILD," which will be the third and
7 fourth wells from the left, those wells were actually
8 original induction logs and where you don't see the
9 Groningen effect and the effect of the casing, because
10 they return their current back to the actual tool rather
11 than to the surface like the old laterologs do.

12 And so basically what I did is I
13 quality-controlled all of these. I sort of said, "Okay.
14 What's changing throughout the area? Are the logs
15 reasonable? Am I getting similar resistivities in this
16 well to this well to this well?" And kind of when I got
17 to the far right well, I noticed that well, the baseline
18 resistivity was kind of shifting shifted on that well in
19 particular. It looked like it was probably reading
20 three to four ohms higher than the other wells, and so
21 that well I was a little hesitant to run petrophysics
22 on. And it's not shifting because it's pay. It's
23 shifting because -- my guess is it could be a bad
24 calibration or something to that effect, so I excluded
25 that well from the computation, not for nefarious

1 reasons.

2 **Q. And I assume we're including Exhibit 21 to give**
3 **a brief summary of your --**

4 A. Yeah. This is just a basic overview of the --
5 of the computation process? You know, I took the
6 original logs. I calculated the porosities, and I used
7 the service company charts to calculate porosities
8 relative to which service company ran it. And we were
9 able to calculate the total porosities, correct for
10 shale with the effective porosities, and applied the
11 appropriate cutoffs that were helping us look for it.
12 If we saw water saturations over a certain amount, we
13 were flagging it. And we used 65 percent. So anything,
14 you know, less than 65 percent, we looked at for
15 hydrocarbon, but ultimately everything came out at 100.

16 **Q. And would you identify the document marked as**
17 **Exhibit 22?**

18 A. Yeah. Exhibit 22 is the cross section of the
19 petrophysical analysis of the Bell Canyon interval. And
20 I'm sorry it's a little small. But what this basically
21 is, this was the five wells that I included. And, of
22 course, after correcting for the Groningen effect, you
23 can see the water saturation. I know it's a bit tough
24 to see, but it's in the -- it's the second track from
25 the right of each log. And you can see that all the

1 water saturations were calculating and banging right off
2 the water-saturation line, with the exception of the
3 far-right well.

4 And the far-right well, you'll notice that
5 you kind of get up to almost 80 percent water saturation
6 there, which concerned me a bit, but then I went back in
7 the QC process. And I'll sort of lead you into your
8 next question here. If you'll switch to slide 23,
9 you'll notice that the porosities are blown out in the
10 top part of that log, and that's what's causing those
11 water saturations to blow out at the very top there,
12 because the hole's very washed out and porosities are
13 getting up and exceeding 39 percent, 40 percent. So I
14 think that's what's causing those high water saturations
15 on that far-right well.

16 **Q. And are you able to conclude from your Exhibits**
17 **22 and 23 that there are no indications of producible**
18 **hydrocarbons in the Bell Canyon?**

19 A. Yes. Yes.

20 **Q. And moving on to the last two exhibits, Numbers**
21 **23 and -- I'm sorry -- 24 and 25, please explain the**
22 **role they played in your petrophysical analysis?**

23 A. Yeah. And we just sort of -- as an abundance
24 of caution, we went through the whole Delaware sequence
25 to make sure we didn't miss hydrocarbons in some of the

1 lower zones. So we looked at the Bell Canyon. We
2 looked at the Cherry Creek, which is Exhibit 24.
3 Exhibit 24 effectively showed that -- pardon me -- we
4 had 100 percent water saturation throughout the
5 intervals, and we didn't see any indication of
6 hydrocarbons in the Cherry Canyon or in the Brushy
7 Creek, which was Exhibit 25.

8 **Q. Brushy Canyon.**

9 A. Brushy Canyon. Sorry. Sorry. Canyons, creeks
10 and (laughter) --

11 **Q. Now, you heard some testimony earlier about**
12 **frac gradients and --**

13 A. Yes, I did.

14 **Q. Have you looked at potential frac gradients in**
15 **the injection interval or discussed it with others at**
16 **Lonquist?**

17 A. Yeah. Yeah. I've had some discussions with
18 Peter and Parker about that.

19 I had to get that one in there, right?

20 (Laughter.)

21 **Q. In your opinion, is there any possibility of**
22 **fracturing in any of the formations in the injection**
23 **interval?**

24 A. I don't believe so. We looked at the original
25 mud weights that the wells were drilled with, which

1 enabled us to establish the -- the normal gradient, and
2 obviously there is a bit of a safety factor built into
3 that. And when we looked at that and applied the
4 State's .2 over that, Peter -- even Peter's scenario
5 where he had taken 20,000 barrels a day every day for 20
6 years and looked at the maximum pressure increase, it
7 was still well below the frac gradient that we would
8 see.

9 **Q. And based on your petrophysical analysis, are**
10 **you able to conclude that there are no economically**
11 **producibile hydrocarbons in the Delaware Mountain Group**
12 **formations that are included in the injection interval?**

13 A. Yes.

14 **Q. And in your opinion, would the granting of**
15 **Milestone's application result in impairment of the**
16 **correlative rights?**

17 A. No.

18 MR. LARSON: Mr. Examiner, I move the
19 admission of Exhibits 17 through 25.

20 MR. CARR: No objection.

21 MR. RANKIN: No objection.

22 MS. ANTILLON: No objection.

23 EXAMINER McMILLAN: Exhibits 17 through 25
24 may now be accepted as part of the record.

25 (Milestone Environmental Services, LLC

1 Exhibit Numbers 17 through 25 are offered
2 and admitted into evidence.)

3 MR. LARSON: And I will pass the witness.

4 MR. CARR: I have no questions.

5 MR. RANKIN: No questions.

6 MS. ANTILLON: No questions.

7 EXAMINER GOETZE: I have no questions, but
8 I do have a request. When you do submit these -- the
9 three cross sections by him, could you make it so
10 they're expandable so we can see it? Usually it comes
11 in a locked PDF and --

12 THE WITNESS: Gotcha.

13 EXAMINER GOETZE: -- the only thing we see
14 is big, fuzzy lines.

15 MR. LARSON: So you'd like an expandable
16 PDF?

17 EXAMINER GOETZE: Yes.

18 THE WITNESS: I actually write them out to
19 EMF files, so you can actually grab them. I'll give
20 it to -- can we give you guys a PowerPoint?

21 EXAMINER GOETZE: Yeah, yeah, yeah.

22 THE WITNESS: So I will give you guys EMF
23 files, which you can blow those up.

24 EXAMINER GOETZE: That would be good.

25 THE WITNESS: Absolutely. Absolutely.

1 CROSS-EXAMINATION

2 BY EXAMINER McMILLAN:

3 Q. Well, it's kind of obvious as to what DST --

4 A. Yup. Yup.

5 EXAMINER MURPHY: No questions.

6 EXAMINER BRANCARD: I just have one

7 question.

8 THE WITNESS: Yes, sir.

9 CROSS-EXAMINATION

10 BY EXAMINER BRANCARD:

11 Q. Again, I get to ask the dumb questions.

12 It seems to me from earlier maps that there
13 are a whole bunch of wells in this area.

14 A. Yes. And those are all the horizontal wells,
15 and those are all down in the -- in the Avalon
16 Shale-producing area. But most of those horizontal
17 wells don't have full suites of well logs that we're
18 able to run the petrophysics on, because they typically
19 don't log all those wells because they're horizontal
20 wells. And so the expense of getting a logging tool
21 down there on drill pipe to actually log it, people
22 just -- people just don't do it that much anymore.
23 Usually they'll log the pilot straight hole, but they
24 won't log the horizontal versions of the well. And some
25 people have even stopped logging the straight holes for

1 economic reasons, because it can add a substantial cost
2 to your well to go out there and have to shut down the
3 operation to do the well logging.

4 **Q. So the wells that you have the good data from,**
5 **these are older wells?**

6 A. Well, these are older -- I mean, they're not
7 like old, old like, you know, 1960 wells. They had all
8 the modern suite of logs which we use today in
9 petrophysics, and they were actually the saltwater
10 disposal wells that were previously out here that are
11 around in the area, most of them within two or three
12 miles. You can see on my original slide. I believe it
13 was 17, had the -- had the distances, and those were the
14 wells that had full suites of logs that we used.

15 **Q. Okay. Thank you.**

16 A. Sure.

17 EXAMINER GOETZE: We're done with this
18 witness, I believe.

19 MR. LARSON: And I have nothing further,
20 and we would ask the case be taken under advisement.

21 EXAMINER McMILLAN: One second. State Land
22 Office?

23 MS. ANTILLON: Thank you, guys.

24 The State Land Office just wants to say
25 that the proposed disposal well is sited as about 160

1 feet of both surface and minerals, and it's in the
2 easternmost margin of the Delaware Mountain Group risk
3 area where hydraulic fracturing by saltwater disposal
4 wells above the OCD standard of .2 psig wellhead
5 injection pressure limitation has caused damage to oil
6 and gas zones in and below that Lower Delaware Sand.
7 We've also got a cattle -- or a grazing lessee that's
8 located less than a quarter mile to the east with the
9 Vivian tank, a cattle watering pond just downslope of
10 the proposed well site. And the State Trust --
11 therefore, the State Trust surface resources and
12 groundwater are potentially at risk if there are any
13 fluids being disposed of that are spilled onto the
14 surface.

15 So for all these reasons, the State Land
16 Office would request that any order issued by the OCD
17 include the following proposed conditions:

18 A wellhead injection pressure limit of .2
19 psig with monthly average injection pressures reported
20 on the C-115 and a copy to the State Land Office with
21 monthly injection volumes.

22 We would ask that a maximum limit of 6,000
23 barrels per day be put on that order, and we would
24 request that the State Land Office receive copies of all
25 well logs, including the neutron GR resistivity and any

1 mud logs that are submitted to the OCD.

2 And lastly we would request that a baseline
3 sample of the water from that Vivian tank stock watering
4 tank and the nearby Madera Ranch watering well, which
5 are both located in Section 30, Township 24 South, Range
6 35 East and are being used by ranchers, if a water
7 sample could be collective of a copy of the analysis for
8 normal USGS ions be submitted to the State Land Office
9 prior to initiation of disposal operations, and then any
10 historical water samples that the Applicant has, if they
11 would submit those to the State Land Office as well.

12 EXAMINER McMILLAN: Before we go any
13 further, we need to make sure we include Exhibits 24 and
14 25. Did we do that?

15 MR. LARSON: Yes. I asked for 17 through
16 25.

17 And following up on Ms. Antillon's
18 statement, we still request a maximum daily pressure of
19 20,000 barrels with the understanding that our
20 anticipated average will be in the range of 6,000.

21 EXAMINER GOETZE: So you want a rate of
22 20,000 --

23 MR. LARSON: Correct.

24 EXAMINER GOETZE: Okay. And you're still
25 going to be able to achieve the .2, you think? That's

1 what's in your application.

2 MR. LARSON: Yes.

3 EXAMINER GOETZE: Okay. Thank you very
4 much.

5 MR. LARSON: And I have nothing further and
6 ask the case be taken under advisement.

7 MR. CARR: Nothing further.

8 MR. RANKIN: No objection.

9 EXAMINER McMILLAN: With that in mind, Case
10 Number 20657 shall be taken under advisement.

11 EXAMINER GOETZE: Send them out for lunch?

12 EXAMINER McMILLAN: Yes. Come back at
13 1:15.

14 (Case Number 20657 concludes, 11:47 a.m.)

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1 STATE OF NEW MEXICO
2 COUNTY OF BERNALILLO

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4 CERTIFICATE OF COURT REPORTER

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

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

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

20 DATED THIS 13th day September 2019.

21

22

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

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