

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:

ORIGINAL

APPLICATION OF LIGHTNING DOCK Case No. 15357
GEOTHERMAL HI-01, LLC, FOR APPROVAL TO
INJECT INTO A GEOTHERMAL AQUIFER THROUGH
THREE PROPOSED GEOTHERMAL INJECTION WELLS
AT THE SITE OF THE PROPOSED LIGHTNING DOCK
GEOTHERMAL POWER PROJECT, HIDALGO COUNTY, NEW
MEXICO.

and

APPLICATION OF LIGHTNING DOCK
GEOTHERMAL HI-01, LLC, TO PLACE Case No. 15365
WELL NO. 63A-7 INJECTION-GEOTHERMAL
RESOURCES AREA, HIDALGO COUNTY, NEW MEXICO

REPORTER'S TRANSCRIPT OF PROCEEDINGS
COMMISSION HEARING

VOLUME 5

October 9, 2015
Santa Fe, New Mexico

BEFORE: DAVID R. CATANACH, CHAIRPERSON
ROBERT S. BALCH, COMMISSIONER
PATRICK PADILLA, COMMISSIONER
BILL BRANCARD, ESQ.

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This matter came on for hearing before the New
Mexico Oil Conservation Commission on Friday,
October 9, 2015, 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.

REPORTED BY: PAUL BACA, CCR #112
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1 (Time noted 8:33 a.m.)

2 CHAIRMAN CATANACH: I call the hearing
3 back to order at this time, and I believe that you
4 were done with your direct case, Mr. Lakins?

5 MR. LAKINS: Yes, sir.

6 CHAIRMAN CATANACH: And you were going to
7 call some rebuttal witnesses?

8 MS. HENRIE: Yes, Mr. Chairman. Before I
9 do that, I would like to just address the Commission
10 really briefly. Our team listened to AmeriCulture's
11 concerns yesterday. While we may disagree about the
12 science behind them, we understand the concerns are
13 felt heavily by AmeriCulture.

14 We also heard the Commissioner talk
15 about compromise yesterday. And with that, in the
16 spirit of compromise, we are authorized to, in this
17 proceeding, withdraw one of the four injection well
18 applications, the application that is closest to the
19 AmeriCulture facility, which is 63A-7. I would like
20 to, at this time, hereby withdraw that application.

21 We will be submitting probably on
22 Monday another application. We do still feel
23 strongly that we need all four wells, but we will
24 pull that well to the south further into the
25 greenhouse area to keep it further away from the

1 AmeriCulture property. And I don't know exactly
2 what that kettleman number would be, but it will be
3 pulled further south to help provide more of a
4 buffer for the AmeriCulture property. And I didn't
5 get a chance to run that by Mr. Lakins and
6 Mr. Seawright before the hearing, so I apologize,
7 but that is what we felt was the right thing to do
8 after hearing the concerns yesterday.

9 And with that, I did ask to recall a
10 couple of witnesses. I would like to recall first
11 Roger Bowers, who is the project geologist and the
12 prior owner of the project.

13 CHAIRMAN CATANACH: Mr. Lakins?

14 MR. LAKINS: I sort of have a standing
15 objection to anticipated testimony here. This is
16 being presented as rebuttal. Rebuttal has always
17 been in response to something new and unexpected
18 that came up on our case. And rebuttal is not for
19 the purpose of saying Let me tell you again why I am
20 right and why he is wrong.

21 What I anticipate is that is what we
22 are going to get, and so unless there is something
23 that can be identified as what came up that was new
24 and unexpected to which rebuttal is proper, I think
25 that putting on witnesses to just say Let me tell

1 you again why I am right and why they are wrong is a
2 waste of time and inappropriate.

3 CHAIRMAN CATANACH: Go ahead, Ms. Marks.

4 MS. MARKS: Two points here. I think to
5 address Ms. Henrie's new application or the
6 application that will be forthcoming, I did ask --
7 this hearing obviously went on for way longer than
8 anticipated. I would ask that if the Commission, in
9 any order, could make any findings or conclusions
10 for this area so we are not putting on the same
11 facts, the same testimony, the same conclusions and
12 be before the Commission again for the same matters
13 and waste everybody's time again. If we could
14 consider this in the order, that would probably save
15 everybody here a lot of time. I would just ask that
16 the Commission consider that knowing that we have
17 heard testimony in geothermal resource area.

18 And with respect to rebuttal, I think
19 a lot of the witnesses did testify about matters
20 that were not in the prehearing statement, so I
21 would ask for a little bit of latitude to be
22 considered by the Commission.

23 MS. HENRIE: Mr. Chairman, I will go ahead
24 and before I ask a question, clarify where the
25 question is coming from. In many cases it is to

1 correct testimony or to fill in gaps that the
2 Commission has not heard, but have asked for.

3 MR. LAKINS: Correcting testimony is just
4 changing what I said before. That is not rebuttal.

5 MS. HENRIE: I am correcting your
6 witnesses' testimony.

7 MR. LAKINS: Once again, my witnesses'
8 testimony was my witnesses' testimony. They don't
9 get to correct it. That is not rebuttal. Just
10 saying what they said was wrong is not rebuttal. It
11 has to be something that came up, unexpected, new,
12 not just I am going to correct what they said. That
13 is basically saying Let me put my case on again when
14 I bear the burden of proof. Let me put it on again
15 or parts of it again when they have countered what I
16 said in my case-in-chief. That's not rebuttal.

17 MR. ROGERS: May I? It is not our
18 intention to address all the erroneous statements or
19 all the erroneous factual matters that were pervade
20 nor all the erroneous factual or legal errors with
21 regard to legal pronouncements or so on. We are
22 going to be focused, but it is important and we
23 selected some particularly relevant and material
24 presentations that were erroneous to address. It is
25 classic rebuttal. That is rebuttal.

1 MR. LAKINS: That is closing. That is not
2 rebuttal.

3 MR. BRANCARD: Rebuttal is a witness,
4 closing is a lawyer.

5 Mr. Chairman, I think there is room
6 for rebuttal. Obviously, the Commission does not
7 want to have the whole case reheard again and we
8 would like to keep this as specific and directed as
9 possible. You know, we did not have prefiled direct
10 testimony in this case, instead we had prehearing
11 statements that made fairly general, statements
12 about what witnesses were to testify to and we
13 received a lot of detail from the witnesses, and in
14 particular AmeriCulture witnesses. So I think it is
15 appropriate to have some rebuttal testimony here.
16 And I think keeping it focused on what you're
17 actually rebutting as opposed to restating the
18 original case, I think is -- that you can do in your
19 closing statement.

20 MS. HENRIE: Fair enough.

21 CHAIRMAN CATANACH: Okay. Let's proceed
22 on that, on that matter.

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1 ROGER BOWERS,
2 after having been first duly sworn under oath,
3 was questioned and testified as follows:

4 MS. HENRIE: Commissioners, we previously
5 heard from Roger Bowers. He is the project
6 geologist and he has been with this project for a
7 number of years, as you have heard on prior
8 testimony.

9 DIRECT EXAMINATION

10 BY MS. HENRIE:

11 Q. And, Roger, are you familiar with the
12 temperatures of the Lightning Dock Geothermal wells?

13 A. Yes, I am.

14 Q. Will you please describe these
15 temperatures --

16 MS. HENRIE: And, Mr. Chairman,
17 Commissioners, this goes to the point, AmeriCulture
18 said only two wells were above 250 degrees and we
19 disagree with that. I would like to get the
20 testimony on record.

21 MR. LAKINS: This should have been part of
22 their case-in-chief. Standing objection.

23 CHAIRMAN CATANACH: We'll allow it. Go
24 ahead.

25 Q. (By Ms. Henrie) Roger, will you please

1 describe the temperatures of the Lightning Dock
2 wells?

3 A. The Lightning Dock wells that have been
4 drilled over the years are all very, very hot except
5 the ones way out on the fringe, but the well logs
6 and temperature surveys are in OCD files. I can
7 tell you that every well that Cynq Energy has
8 drilled, that Lightning Dock exceeds 250 degrees
9 Fahrenheit.

10 MS. HENRIE: I would like the Commission
11 to take administrative notice that those well log
12 temperatures are in OCD files.

13 Q. (By Ms. Henrie) Next question. Roger,
14 Lightning Dock Exhibit 14, which is the well logs
15 Commissioner Blach is looking right in front of him,
16 there was a statement by Mr. Witcher that those just
17 reflected what the mudlogger threw out there. Do
18 you know who prepared that exhibit?

19 A. Yes. I actually prepared that exhibit and
20 I can tell you that the mudloggers that were hired
21 for this job have been in the geothermal industry
22 for more than 30 years and have expertise in
23 volcanic rocks, and that is why they were contracted
24 to sit on these wells.

25 I can further tell you that the

1 cuttings from all of the wells were shipped to the
2 Energy and Geoscience Institute in Salt City, Utah,
3 as part of the University of Utah Research Institute
4 and the cuttings were studied by Dr. Joseph Moore.
5 Not only were they examined under microscopes, but
6 thin sections were made and petrographic analyses
7 were made on these cuttings. So the interpretations
8 or the lithologies that you see reflected on that
9 cross section are the result of several studies.

10 Dr. Moore also confirmed that the
11 mudloggers correctly identified the different types
12 of igneous rocks, where they -- whether they are
13 volcanics or intrusives. And so we have a lot of
14 confidence in those pathology logs.

15 Now there are a couple of minor
16 interpretations. The log for AmeriCulture state
17 two. For graphical reasons on such a small scale
18 cross section like this, there were three separate
19 zones of the rhyolite that Mr. Witcher identified,
20 and that log is taken from Mr. Witcher's logs. He
21 identified three subareas of the rhyolite. I
22 combined it into a single rhyolite for the graphics
23 on that log. But all of the others are taken from
24 the petrographic studies done by the Energy and
25 Geoscience Institute.

1 Q. Thank you.

2 And my last question for Mr. Bowers,
3 yesterday there were sort of floated a suggestion of
4 why don't you just case all the wells down to
5 500 feet. And, again, for clarification Well 13-7,
6 which is out to the west, already is proposed for
7 minimum depth of 500 feet. The wells in the
8 greenhouse area, the minimum depth was proposed
9 150 feet with perforations down to 1,500. If we
10 case down to 500 feet, what would be the effect of
11 that?

12 A. It is my opinion that it would be very
13 detrimental and that is based on the fact that the
14 Rosette wells in the greenhouse area encountered the
15 fractured silicified volcanics, sometimes the
16 shallow is liberty in 40 feet. There is very little
17 alluvium in there and they had water production
18 zones from as shallow as 50 feet. So to have to
19 case to 500 feet would be very, very detrimental.
20 You would be losing your fracture porosity that goes
21 into the heart of the geothermal system.

22 MS. HENRIE: Mr. Chairman, with that I
23 will pass the witness.

24 CHAIRMAN CATANACH: Mr. Lakins, do you
25 have any questions?

CROSS-EXAMINATION

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BY Mr. Lakins:

Q. Mr. Bowers, you said that all the wells that were drilled were hot, over 250. How many wells? What is the number?

A. I believe it is seven. These are the wells only that were drilled by Cyrq Energy since they purchased the property.

Q. Of those seven wells how many are productive wells?

A. That would depend on your definition of production.

Q. How many are in use?

A. Right now, I believe, one, two, three, four of them are.

Q. Can you give me production rates of the wells that are in use?

A. I am not aware of that information.

Q. Can you give me the injection rates of the Wells 53-7 and 55-7?

A. No, sir. I am not aware of that information.

MS. HENRIE: It's not, and Dr. Shomaker is going to address that.

Q. (By Mr. Lakins) Would you agree that the

1 wells that have been drilled other than 45-7 and
2 55-7 are not promising wells to be utilized in the
3 project?

4 A. I would not agree with that statement.

5 Q. From a production standpoint?

6 A. I think there is potential in all of those
7 wells.

8 Q. For use as injection and production in the
9 existing wells?

10 A. Yes.

11 Q. Then why are you not using the existing
12 wells?

13 A. That is not my determination, sir.

14 Q. Okay. So you have got seven wells that in
15 your opinion are usable production or injection
16 wells.

17 Is that correct?

18 A. Basically, yes.

19 MR. LAKINS: Thank you.

20 CHAIRMAN CATANACH: Ms. Marks, did you
21 have any questions?

22 MS. MARKS: No questions.

23 EXAMINATION BY CHAIRMAN CATANACH

24 CHAIRMAN CATANACH: I just have one. Do
25 we have any evidence as to the thickness of the

1 alluvium in this area, in the whole area? Do we
2 have a map that shows that?

3 THE WITNESS: I don't have a map that
4 shows it, but I can tell you that it ranges from 20
5 to 30 feet in the greenhouse area all the way out to
6 probably 1,600 feet as you, especially as you go
7 west, it gets thicker as you move towards the
8 valley. So there is a broad range of thicknesses to
9 the alluvium. It just depends where you are.

10 CHAIRMAN CATANACH: So given your
11 knowledge of the thickness of the alluvium, are some
12 of these injection wells going to actually inject
13 into the alluvium?

14 THE WITNESS: Only on a very limited
15 basis. And, of course, the one out -- 13-7 out to
16 the west, it is being cased deeper so it would
17 probably have some alluvium to take advantage of
18 that. The ones in the greenhouse area, basically
19 they are going right back into the main upwelling of
20 the resource, which is in -- or the fractures in the
21 shallow, which is the silicified volcanics.

22 CHAIRMAN CATANACH: And the wells in the
23 greenhouse area are which ones again?

24 THE WITNESS: 76-7, which is down at the
25 very south end very near Burgett's house and then

1 there is one off to the east.

2 CHAIRMAN CATANACH: So those two wells
3 would probably not encounter alluvial injection?

4 THE WITNESS: Very limited, in my opinion
5 because the alluvial is very thin. I can tell you
6 the 76-7 based on the information we have with
7 150-foot casing would be through the alluvium, would
8 case off the alluvium that is into the porosity and
9 permeability of the silicified volcanics. That's
10 based on the information that we have at nearby
11 wells.

12 CHAIRMAN CATANACH: Okay.

13 EXAMINATION BY COMMISSIONER BALCH

14 COMMISSIONER BALCH: Good morning,
15 Mr. Bowers.

16 THE WITNESS: Good morning.

17 COMMISSIONER BALCH: I was the one that
18 threw out the 500-foot number. And that was -- my
19 real intent was, is to make sure that you're cased
20 through the shallow aquifer and a little bit below.
21 So a more appropriate constraint might be to 50 feet
22 below the base of the silicified sediments?

23 THE WITNESS: I think that would be very,
24 very difficult. First of all, the wells in the
25 greenhouse area when you look at the Rosette wells,

1 again, they only countered a few tens of feet of
2 alluvium before they were in that silicified zone.
3 So to have to case deeper than that you're -- you're
4 in the heart of the upwelling of the geothermal
5 fluid. I do not see that as a separate shallow
6 aquifer. It is all coming up and so, you know, to
7 put a footage limit on it like that, I think would
8 be very wrong and very detrimental.

9 COMMISSIONER BALCH: You do understand the
10 one thing that -- that we are supposed to do is
11 protect shallow aquifers?

12 THE WITNESS: I understand that.

13 COMMISSIONER BALCH: I think if this were
14 in an oil well, you would be three layers of casing
15 and cement.

16 THE WITNESS: Right.

17 COMMISSIONER BALCH: Through any interval
18 that may have fresh water remotely near it.
19 Particularly as you go to the south side of the
20 plume east and the west, you're getting into those
21 areas where you are in the mixing zone of the
22 shallow freshwater aquifer and the upwelling plume.
23 So we do need to make sure that we do protect that
24 zone. I think that also would go a long way to
25 alleviate the concerns of AmeriCulture because you

1 are more -- you are providing more isolation between
2 the injection and the shallow part of the plume.

3 THE WITNESS: I understand that. And my
4 response is that in the greenhouse area where these
5 injection wells are, you don't see the separate
6 shallow aquifer. I mean the geothermal fluids are
7 coming up basically to the surface.

8 COMMISSIONER BALCH: So really comes my
9 next question, which is, maybe a little bit of
10 location on some of those other seven wells and the
11 depths of which you found the 250-degree water, 250
12 plus water.

13 THE WITNESS: I am not sure that I would
14 be allowed to answer all of those questions, but I
15 can show you the where the wells are.

16 COMMISSIONER BALCH: Okay.

17 THE WITNESS: Do we have any kind of a
18 pointer that I could use?

19 All of the wells are not on this map.
20 I don't know if we have the other map available.
21 The first one that was drilled, well, of course,
22 55-7 right there (indicating), and those
23 temperatures are -- have been on record for a long
24 time. They exceeded 300 degrees Fahrenheit at
25 depths of about 1,200 feet. That has been known for

1 a long time. There has been multiple temperature
2 surveys.

3 Well 45-7 here (indicating), that is
4 the current production well and that also exceeds
5 300, about 310 degrees Fahrenheit.

6 I can tell you that 53-7 and 63-7
7 both exceed 250 degrees Fahrenheit.

8 I can tell you 47-7 exceeds
9 250 degrees Fahrenheit. And I can tell you that
10 17-7, the latest well that was drilled, also exceeds
11 250 degrees Fahrenheit.

12 So when you look at those high
13 temperatures it greatly increases the size of the
14 resource.

15 COMMISSIONER BALCH: What are the TDs on
16 those wells, do you know?

17 THE WITNESS: I can -- I don't have the
18 exact numbers. 55-7 went to 7,001; 45-7 went to
19 2,900; 53-7 I believe went to 4,400; 63-7, I don't
20 remember the specific depth on that. It went to
21 about 3,000 feet or 3,400 feet. 47-7 again went to
22 about 3,000 feet, but that is not a true vertical
23 depth because that well was deviated horizontally to
24 cross some structures.

25 COMMISSIONER BALCH: Deviated or turned

1 horizontal?

2 THE WITNESS: Turned.

3 COMMISSIONER BALCH: Turned horizontal?

4 THE WITNESS: It didn't go completely
5 horizontal, but we did deviate it to...

6 COMMISSIONER BALCH: So your approximate
7 TD was?

8 THE WITNESS: Approximate TD, I believe
9 was probably about 3,200 feet. But, again, true
10 vertical depth would probably be about 26,
11 2,700 feet. And then 17-7 went to I believe it was
12 6,200 feet.

13 COMMISSIONER BALCH: Thank you,
14 Mr. Bowers.

15 EXAMINATION BY COMMISSIONER PADILLA

16 COMMISSIONER PADILLA: Just one quick
17 clarification, Mr. Bowers. You said that UCH2 water
18 production shallow, is 40 to 50 feet. That would be
19 assumably underneath the alluvium in the greenhouse
20 area that is coming from the silicified zone?

21 THE WITNESS: The information that we have
22 is from Dale Burgett and the logs that were filed
23 with the State engineer's office, and so there is
24 not a lot of detail in them, but they did identify
25 water zones. And some of those are as shallow as 50

1 feet and it appears to be near the contact between
2 the alluvium and the silicified volcanic robs.

3 COMMISSIONER PADILLA: So I guess my
4 follow up is probably -- you probably wouldn't have
5 any information on it. I was wondering if you knew
6 what the water characteristics were at that depth?

7 THE WITNESS: I do not.

8 COMMISSIONER PADILLA: We are talking
9 about not two different zones and all of it being
10 generated by the geothermal and I know you don't
11 have any -- Lightning Dock doesn't have any
12 information about TDS or fluoride levels?

13 THE WITNESS: That information I am not
14 aware of. There could be. I have not been involved
15 with water sampling. I can tell you from
16 temperature logs that there is no indication of any
17 separate shallow aquifer. The hot water comes
18 almost well up to the top of the water table.

19 COMMISSIONER PADILLA: I think if we had
20 some of those characteristics that would go along
21 with his answering Dr. Balch's question about the
22 different aquifers.

23 THE WITNESS: I am sorry, I don't have any
24 of that information.

25 COMMISSIONER PADILLA: Sure.

1 THE WITNESS: That is something I have not
2 been in involved with.

3 COMMISSIONER PADILLA: Thank you.

4 THE WITNESS: You're welcome.

5 CHAIRMAN CATANACH: Anything else from
6 this witness?

7 MS. HENRIE: Nothing more for Mr. Bowers.
8 In response to the questioning we would also like to
9 call Monte Morrison who is the service
10 vice president of operations.

11 We will let you step down.

12 MONTE MORRISON,
13 after having been first duly sworn under oath,
14 was questioned and testified as follows:

15 THE REPORTER: If you would please take
16 your seat and state your name for the record.

17 THE WITNESS: My name is Monte Morrison.

18 DIRECT EXAMINATION

19 BY MS. HENRIE:

20 Q. Mr. Morrison, I believe you just heard
21 questions from Mr. Lakins about the wells, whether
22 they are productive, whether they are expected to be
23 productive. Can you please talk about the Lightning
24 Dock wells that are in addition to Well 45-7 and
25 Well 55-7?

1 A. Certainly.

2 MR. LAKINS: I will object. I have to
3 raise a standing objection. This should have been
4 part of the case-in-chief. This is not true
5 rebuttal. This is now a follow-up to another
6 witness' non-rebuttal, and he's not a geologist.

7 MS. HENRIE: He's the service
8 vice president of operations.

9 CHAIRMAN CATANACH: Let's proceed.

10 A. So it is under my guise to manage the well
11 field under the direction of Cyrg Energy. And so we
12 currently are producing out of Well 45-7, as
13 Ms. Henrie mentioned. We are primarily injecting
14 into 55-7, but to answer the question into the other
15 wells that have been drilled, Injection Well 53-7
16 and 63-7 have been put into injection and they have
17 seen progressive increasing injection rates as of --
18 I have to clarify.

19 Today we are doing some maintenance
20 onto this facility, so they are at zero today. But
21 as of earlier in the week 53-7 had risen up to about
22 80 gallons a minute from being, you know, a very --
23 it was a lower injection rate. It has risen
24 multiples up to about 80 gallons a minute.

25 63-7 has seen even a greater

1 improvement. It has risen from much lower injection
2 rates to about 160 gallons per minute.

3 And then we currently are -- actually
4 as of this week, we approved purchase orders to
5 purchase piping to go out to 17-7 and we will be
6 injecting into it within about six weeks of -- after
7 delivery and installation of a pipeline to 17-7.

8 And the other well was 47-7. It
9 shows promise. It has not yet been connected as an
10 injector, but it is being used as a monitoring well.

11 Q. (By Ms. Henrie) Why are these wells
12 showing improvements?

13 A. They are showing improvement based on --
14 well, on my history. As Mr. Lakins mentioned, I am
15 certainly not a geologist, but I've managed well
16 fields for over 30 years. And over time with many
17 well fields with steady injection into them, they
18 will improve. We have seen that at other facilities
19 and we have seen this now on multiples of injection
20 rates at 53 and 63-7. And it is more of a slow
21 steady incremental improvement over time.

22 Q. So what is the company's plan? Does it
23 intend to inject into these deep wells?

24 A. Certainly, we have a very strong
25 distributed injection plan that will include the

1 four new wells that are being proposed but it
2 certainly does also include the existing wells that
3 are piped in 53 and 63-7. It will include 17-7
4 which will be piped in, in mid-November.

5 And the intent of the company, which
6 is our intent in all of our facilities, is to
7 distribute injection into a large area, geographic
8 as well as a geologic area, in order to distribute
9 that injection and to be able to have a broad and a
10 wide distribution, a broad distribution and a deep
11 distribution of injectate so that as the water
12 returns to production it has time to reheat. That
13 is the perfect scenario as far as an injection
14 scheme that we have used elsewhere for many years.

15 Q. Does that wide distribution allow better
16 well field management?

17 A. Certainly. We have the ability, through
18 our valving. As these wells improve, we have the
19 ability to distribute injection. At other sites we
20 have the ability to raise and lower injection rates
21 based on conditions at the production wells,
22 conditions at the injection wells, and from the
23 facility. So it does give us great operational
24 flexibility.

25 MS. HENRIE: With that, Mr. Chairman, I

1 will pass the witness.

2 CHAIRMAN CATANACH: Any question
3 Mr. Lakins?

4 MR. LAKINS: Yes, sir.

5 CROSS-EXAMINATION

6 BY MR. LAKINS:

7 Q. Your Well 55-7?

8 A. Yes, sir.

9 Q. What is the current rate of injection?

10 A. The rate injection today, as I mentioned,
11 is zero. It typically takes the lion's share of the
12 injectate as 53 and 63-7 are taking water. If we
13 use them -- and I don't mean to be vague, but the
14 production rates vary depending on how many
15 operational units are in service at any given time.
16 So if we take a nominal flow rate of, say, 1,800
17 gallons a minute of production, that is an injection
18 rate of about 1,650 or so. I am doing math on the
19 stand which Mr. -- Dr. Shomaker said not to do,
20 so -- but in general it is about 90 percent based on
21 the thermal density change.

22 Q. Okay.

23 A. I'm sorry, I will stop there.

24 Q. If you can give me an average number --

25 A. Absolutely.

1 Q. -- of GPM rate --

2 A. Yes.

3 Q. -- of injection into 55-7 will be real
4 helpful.

5 A. An average rate of injection into 55-7
6 would be 1,500 to 1,600 gallons a minute at most.

7 Q. Okay.

8 A. As the --

9 Q. Okay. What is the pressure?

10 A. On 55-7 is about -- I would have to look
11 at the logs, but it is about 55 or 60 PSI.

12 Q. All right. 53-7 you said it is currently
13 injecting about 80, taking about 80?

14 A. When it is online, yes, sir?

15 Q. What is the pressure?

16 A. It is similar. It's a little bit lower.
17 It is a much longer pipeline and a smaller pipeline,
18 so with pressure drop out there it is probably in
19 the order of 40 to 50 PSI.

20 Q. It's pressure, it is not gravity?

21 A. Both.

22 Q. How about 63-7? You say it is about 160
23 GPM right now?

24 A. When it is online, yes, sir.

25 Q. What is the pressure?

1 A. Similar.

2 Q. What is the highest pressure you ever had
3 to put on that well?

4 A. Under operations?

5 Q. Yes.

6 A. It would be the 40 to 50 PSI, which is the
7 outlet pressure of the plant. We do not have any
8 additional pumping out to that site yet.

9 Q. Now you said 17-7?

10 A. Yes, sir.

11 Q. You plan to use that for injection in
12 about six weeks?

13 A. That is our intent, yes.

14 Q. And do you agree it is about 6,200-foot
15 depth, do you know?

16 A. I don't know, sir, I'm sorry.

17 Q. And 47-7 you indicated it shows promise.
18 Why do you say that?

19 A. It is a -- it has shown promise during the
20 drilling. That is what I have read through the
21 drilling reports. It is being used as a monitoring
22 well. It is our intent to pipe out to 17-7 first
23 and in parallel with the drilling activities on the
24 four new -- the three and then the one that we are
25 going to submit on Monday. So it is a well that we

1 are anticipating will show promise. It is being
2 used as an active monitoring well.

3 MR. LAKINS: Thank you.

4 CHAIRMAN CATANACH: Any questions,
5 Ms. Marks?

6 MS. MARKS: Just one question.

7 CROSS-EXAMINATION

8 BY MS. MARKS:

9 Q. Discussion about the existing wells, there
10 is injection in there and there is the new proposed
11 application as part of the purpose of the geothermal
12 research and this conservation act says the act is
13 to encourage maximum economic recovery as part of
14 the application, and the purpose of these
15 applications to encourage maximum economic recovery
16 of the geothermal resource and for your operations.

17 MR. LAKINS: I'm going to object to that.
18 That is placing OCD's testimony into the record.
19 This is not rebuttal. This is beyond the scope of
20 his direct and this was part of the Applicant's
21 case-in-chief.

22 MS. MARKS: He talked about why he is
23 drilling the new wells.

24 MR. BRANCARD: This is rebuttal. I mean,
25 so unless there is something that AmeriCulture

1 testified in opposition to that.

2 MS. MARKS: Just his testimony that he is
3 talking about right now.

4 MR. LAKINS: That is beyond the scope of
5 the questions that Lightning Dock and myself asked.
6 And that is an inappropriate question at this point
7 in this proceeding.

8 CHAIRMAN CATANACH: Okay. I will disallow
9 it, then.

10 MS. MARKS: The testimony was just had
11 just now during this witness' rebuttal, so I am a
12 little confused.

13 MR. BRANCARD: The witness was testifying
14 to factual matters about the wells. You're asking
15 him to characterize their whole strategy here, which
16 is a different.

17 MS. MARKS: I apologize. Maybe it was
18 Mr. Bowers, I guess that was asked. It was during
19 rebuttal in general that the topic came up.

20 MR. LAKINS: Well, it didn't come up
21 through this witness. That is an inappropriate
22 question to this witness.

23 CHAIRMAN CATANACH: Okay. We will
24 disallow the question. Do you have anything else,
25 Ms. Marks?

1 MS. MARKS: That is fine.

2 EXAMINATION BY MS. GAULT

3 MS. GAULT: I would like to ask you, in
4 spite of not being a geologist, are you the one that
5 makes decisions where this inject -- I mean where
6 you're going to drill the injections?

7 THE WITNESS: No, ma'am. I am part of the
8 team, but I do not cite wells, not being a
9 geologist. I anticipate wells when they are
10 drilled, then I put them in operation and then I
11 manage them, but I don't cite them and drill them.

12 MS. GAULT: And you did say that you are
13 not abandoning the deep wells, the injection deep
14 wells, you're just wanting to add more shallow wells
15 is that my understanding?

16 THE WITNESS: Oh, yes. We are not
17 abandoning 53 or 63-7. In fact, we're enhancing our
18 well field by adding 17-7 in short weeks.

19 MS. GAULT: But I thought that our
20 understanding was that the deep wells are not taking
21 the water, so why are you -- how are you going to
22 use them if they are not usable now? That is
23 what -- I guess I am not asking it right but...

24 THE WITNESS: No, I think I understand and
25 I will answer in that they are improving and this is

1 typical in that they -- the wells will improve over
2 time. Some do, and these two are -- they are
3 showing a dramatic increase in multiples from tens
4 of GPM to 80 and 160. It is our expectation that
5 will increase. It is our expectation that we will
6 have, through the other wells, have additional
7 injection capacity and then as our expansion
8 continues that we would then, as I have testified
9 prior, we would convert Injection Well 55-7 -- not
10 convert, excuse me, we would revert back to a
11 production well status for that well. It is
12 permitted for both, and we would produce out of 55-7
13 and inject through the existing wells and the
14 proposed and anticipated wells.

15 MS. GAULT: Okay. Can you explain to a
16 layperson like me how something that is not
17 functioning is going to improve? Is it because of
18 more pressure or it depends on the fact that you are
19 going to drill the shallow wells? What is the
20 relationship between the shallow wells and the deep
21 wells is the improvements of the deep wells depends
22 on the shallow wells?

23 THE WITNESS: Yeah, that is the how
24 question, ma'am, leaves my purview of expertise. I
25 have witnessed it, I have managed it and I have -- I

1 have done it under the regulations of different
2 states. How it physically occurs, I think I better
3 leave to the geologists because that is not my area
4 of expertise. I'm sorry I can't answer that for
5 you.

6 MS. GAULT: Thank you.

7 EXAMINATION BY COMMISSIONER BALCH

8 COMMISSIONER BALCH: So 53-7 and 63-7
9 Mr. Bowers said were greater than 250 degrees.

10 THE WITNESS: Yes.

11 COMMISSIONER BALCH: And you are injecting
12 the effluent from the power plant into those two
13 wells and in addition to 55-7?

14 THE WITNESS: Yes, sir.

15 COMMISSIONER BALCH: Those effluents, I
16 believe, are between 180 and 210 or 220?

17 THE WITNESS: Again, it varies, but yes,
18 that is a range that is typical. It can be slightly
19 lower and it is typically no hotter than about 220
20 for certain -- we do want to extract the heat.

21 COMMISSIONER BALCH: Right. Say Lightning
22 Dock's interpretation about the size of the anomaly
23 is incorrect.

24 THE WITNESS: Uh-huh.

25 COMMISSIONER BALCH: And you start to pump

1 and you hit the bottom of the well before you hit
2 the end of the cone. What is Lightning Dock's or
3 Cyrq's business plan in that case? I am sure you
4 have a, you know, a fallback plan. Say you can't
5 meet the water demand you need for your expansion.

6 THE WITNESS: Sure. Without delving into
7 areas that are confidential in the productivity of
8 45-7, we do have great confidence in that well and
9 from previous flow tests on 55-7 we are greatly
10 confident in that one. I can say without getting
11 into numbers that the numbers I have seen are very
12 encouraging. And based on that and the fact that we
13 are doing the distributed injection and requesting
14 injection permits. I don't mean to be cagey, but we
15 don't feel we are production limited. We do know
16 that we want to distribute injection, both geologic
17 depth as well as geographic area into a greater
18 extent than 55-7 to expand, and I don't -- I hope I
19 am not being evasive.

20 COMMISSIONER BALCH: No, I don't think you
21 are being evasive. What I am trying to get at is if
22 you can't make your water quota, what happens? Do
23 you have a business plan for scaling back your
24 expansion?

25 THE WITNESS: Based on the expect -- based

1 on the known production abilities of 45-7 and the
2 test on 55-7, we feel confident our expansion to the
3 levels that we have are in design right now and
4 construction are adequate. If -- at any of -- and I
5 will speak generally of Cyrq. If we had a lack of
6 production, then we would then look at drilling a
7 production well, requesting a permit and drilling a
8 production well. That would be typical of any
9 geothermal plant. That is a routine to have the
10 need for that in 10 years or 20 years to increase
11 production.

12 COMMISSIONER BALCH: Under direct
13 testimony I believe you said that your goal was to
14 reach equilibrium and not to deplete the resource
15 but to maintain it ad infinitum.

16 THE WITNESS: Certainly. That would be --
17 for any given size resource, that is definitely my
18 directive from our board and our management as well
19 as my personal expectation on managing well fields.
20 I do want to hit an area where we are in balance and
21 our production and injection are in a good system
22 approach.

23 COMMISSIONER BALCH: Say you're
24 successful. This will probably be easier.

25 THE WITNESS: Uh-huh.

1 COMMISSIONER BALCH: You just mentioned
2 you may need additional production wells. You may
3 also need additional injection wells. So what we
4 have presented today, we don't really have a rule in
5 place that describes parameters for geothermal
6 injection wells. So this rule or this order that we
7 make today or tomorrow or whenever we finish
8 deliberating is probably going to set the standard.
9 Would it be beneficial to Lightning Dock to just
10 have a set of parameters and be able to deal with
11 this either administratively or at the OCD level?

12 THE WITNESS: I might not be
13 understanding. I certainly want to address the
14 first part of your question in that, you know, we do
15 feel very comfortable in our production side. And
16 in general, this is across our fleet through three
17 states. We would, you know, if we are -- have an
18 issue with production, that we would request that.
19 If I could ask you Dr. Balch to restate the second
20 half regarding the parameters. I don't want to
21 misunderstand.

22 COMMISSIONER BALCH: A standard for
23 injection well design.

24 THE WITNESS: Oh.

25 COMMISSIONER BALCH: That would avoid

1 having to come before us every time you want to
2 drill an injection well.

3 THE WITNESS: Sure. It is a matter that,
4 again, well design is not my area of expertise. I
5 have managed many injection wells in many states and
6 so that it is typical to have a criteria for
7 injection wells that I have dealt with. And so I
8 think I will leave well design to the drilling
9 engineers and the geologists. I think I won't
10 comment on that, out of my area.

11 COMMISSIONER BALCH: You have mentioned
12 that you are not pumping, you're just using the
13 outflow pressure of the plant to push water down the
14 pipes and into the wells.

15 THE WITNESS: We don't have any pumps on
16 the outlet of the plant.

17 COMMISSIONER BALCH: I might have caught
18 an inference that you don't have those at this time.
19 Is there a plan to put any of these wells under
20 pressured injection at the wellhead?

21 THE WITNESS: At 53 and 63-7 there is,
22 yes.

23 COMMISSIONER BALCH: Do you know what
24 pressures those might be at?

25 THE WITNESS: Because of the depth I know

1 that it will be at a slightly increased pressure,
2 but it will be well under the maximum injection
3 pressure for those depths for certain. It is a
4 small pump and I would assume -- I haven't done the
5 flow curve calcs yet. It is an existing pump we had
6 at other sites. I would assume 40 PSI or so, but
7 that is not...

8 COMMISSIONER BALCH: So less than 100 as
9 you noted in your four present applications total?

10 THE WITNESS: These wells are constructed
11 very differently and so I am assuming, but I am not
12 stating such.

13 COMMISSIONER BALCH: Thank you.

14 EXAMINATION BY COMMISSIONER PADILLA

15 COMMISSIONER PADILLA: I do have a couple
16 of questions.

17 53-7 and 63-7 currently account for
18 about 240 to 250 GPMs injection?

19 THE WITNESS: Correct.

20 COMMISSIONER PADILLA: And is it 55-7 that
21 is the main injector now?

22 THE WITNESS: Yes, sir.

23 COMMISSIONER PADILLA: That was in the
24 1,500 to 1,600 range?

25 THE WITNESS: It takes the balance of the

1 remaining, yes.

2 COMMISSIONER PADILLA: Given your
3 experience with other geothermal projects, that 12
4 to 15 percent number for the two combined wells is
5 probably not optimal, correct?

6 THE WITNESS: Correct, yes.

7 COMMISSIONER PADILLA: Is that a big
8 reason why you are seeking the additional wells so
9 that --

10 THE WITNESS: Yes, and yes. It is an
11 optimal. They were down in the less than 5 percent
12 range several weeks ago and they have improved over
13 time, so we anticipate that to continue. That has
14 been my history.

15 And so, in order to convert 55-7 back
16 to production, as I testified for before in
17 September, it certainly is our intent to have not
18 one well take the lion's share but to distribute it
19 around the field in depth and breath in order to
20 have a broader injection strategy. So yes,
21 absolutely, sir, without talking too much, that is
22 the case.

23 COMMISSIONER PADILLA: Sure. What
24 would -- just -- this is out of curiosity. What
25 would you like to see out of those two wells for

1 efficient well field management?

2 THE WITNESS: Well, currently if the round
3 number production is 1,800, you know, I would like
4 to see -- I typically -- we have four wells in
5 production, I would like to see a distribution of
6 approximately equal. But it is -- it is not always
7 that easy. It depends on their injectivity index,
8 it depends on their proximity to production and
9 their proximity to another injection well. So it
10 is -- I think simplistically it can be equally
11 distributed, but practically it is managed well by
12 well, field by field.

13 COMMISSIONER PADILLA: At those
14 percentages would those be in the geothermal field,
15 in general, would those be considered marginal
16 injectors?

17 THE WITNESS: If they were at the --
18 25 percent, which would be approximately 400 to 450,
19 those would be considered -- in my field, in my
20 experience they are fair as they improve.

21 55-7 is a terrific injector. It is
22 not as good as others we have in our fleet,
23 especially in Nevada. But, you know, if you -- we
24 do have other wells across our fleet that are at the
25 400, 500 well GPM level that we inject into for

1 years and are very satisfied with that.

2 COMMISSIONER PADILLA: Okay. As far as
3 the increases in those injection capabilities go
4 being much more familiar with oilfield practices, in
5 that business it usually -- any increase
6 injectability usually involves chemical and
7 mechanical treatments.

8 Does Lightning Dock do anything on
9 that level to increase the injection?

10 THE WITNESS: We have elsewhere,
11 certainly, and in my experience we have done it in
12 other states. We have dealt with chemical
13 improvement through acidification. We have done
14 other areas, other things to improve. But honestly
15 my best successes and the most economical successes
16 have been slow steady injection at plant outlet
17 pressures, that have improved injectate -- injection
18 indices over time. I -- honestly I have not --
19 personally have not had the greatest success, but
20 the geologists have much more experience than I do
21 not on lots of other wells.

22 COMMISSIONER PADILLA: So there is a
23 possibility that you would use chemical treatments
24 on these two to get them to --

25 THE WITNESS: I would say within the

1 limits of the State of New Mexico regs, yeah,
2 absolutely we would. I mean, we would look at
3 additional conventional geothermal well enhancements
4 in any of our sites.

5 COMMISSIONER PADILLA: Okay. Thank you.

6 EXAMINATION BY CHAIRMAN CATANACH

7 CHAIRMAN CATANACH: Just one. On the 45-7
8 well, what is the current producing rate?

9 THE WITNESS: The current producing rate
10 when all four units are online is about 1,800 GPM,
11 but that varies. It is on a variable frequency
12 drive, so we have a great deal of flexibility. We
13 can run it down even much lower and some higher.

14 CHAIRMAN CATANACH: So with the expansion
15 are you going to increase the production on that
16 well?

17 THE WITNESS: Yes, sir.

18 CHAIRMAN CATANACH: Do you know to what
19 rate?

20 THE WITNESS: We would -- well, it sort of
21 depends on pumping technologies, what is available
22 out there. You know, my anticipation would be that
23 we would attempt to get up above 26 to 2,800 GPM out
24 of that well.

25 There are other wells in other states

1 that do in excess of that, but it is dependent on
2 pumping technology.

3 CHAIRMAN CATANACH: Okay.

4 MS. GAULT: Mr. Chairman, can I just ask a
5 question because of what Mr. Padilla...

6 FURTHER EXAMINATION BY MS. GAULT

7 MS. GAULT: I want to know are you going
8 to enhance injections using something artificial
9 chemically.

10 THE WITNESS: Not at this point, ma'am,
11 no. It is not our -- you know, the future is open,
12 but right now our intent is to continue the
13 injection into 53 and 63-7 and monitor their
14 progress very closely and continue that path.

15 MS. GAULT: So if you would run again into
16 these problems of injections that you cannot get the
17 injection done, not with the deep, not with the
18 shallow, then you will revert to the technology and
19 you'll have to come in front of -- I mean, you will
20 have to go to the OCD and then you will have to come
21 again to the Commission unless -- you don't have to
22 come to the Commission, I guess, if they approve it.
23 But if I will object then you'll have to come to the
24 Commission.

25 THE WITNESS: I will speak more of my

1 experience.

2 MS. GAULT: And when the soil and water
3 conservation district will be notified that you are
4 going to use this chemical techniques or whatever.
5 See, we are not kept -- we were out of this picture
6 until I read this notice coming that there is going
7 to be a hearing. And we don't like to be in this
8 position. And so we are trying to figure out how we
9 can be informed in advance on any changes that you
10 people are proposing, suggesting, before you even go
11 to the OCD or when you go to them. Because we are
12 responsible for the health of our water and soil.
13 We don't want to stop your operation. We don't want
14 to stop any other operation, but we need to know.
15 So, I just want to be clear that when -- if you're
16 going to run into more problems, his question is
17 really kind of we want to be informed. Thank you.

18 CHAIRMAN CATANACH: Thank you. Anything
19 else from this witness?

20 MS. HENRIE: Just maybe a follow-up
21 question to try to clarify that point.

22 REDIRECT EXAMINATION

23 BY MS. HENRIE:

24 Q. Mr. Morrison, is this application
25 currently before the Commission intended to allow

1 time to do what acid job fracking these other
2 possibilities could do quickly? The idea to avoid
3 that route by allowing time to open up the deep
4 injection wells so that they can be used. Is that
5 what is going on here?

6 A. Certainly.

7 MR. LAKINS: I'm going to object to that
8 question as incredibly leading and placing Lightning
9 Dock's testimony into the record through their
10 attorney, not through the witness.

11 CHAIRMAN CATANACH: Okay. Go ahead, just
12 answer the question.

13 A. It certainly is our intent based on our
14 experience and our success and the cost of other
15 more rapid treatments, it certainly has been my
16 experience that this process allows that time. The
17 new four injection wells will give us that adequate
18 time and then we would be managing that well. That
19 certainly is our intent.

20 CHAIRMAN CATANACH: Anything else?

21 MS. HENRIE: Nothing else of this witness.

22 CHAIRMAN CATANACH: This witness may be
23 excused.

24 MS. HENRIE: Mr. Chairman, our last
25 witness on rebuttal is Dr. John Shomaker.

1 JOHN SHOMAKER,
2 after having been first duly sworn under oath,
3 was questioned and testified as follows:

4 THE REPORTER: Thank you very much. If
5 you would please take your seat and state your name
6 for the record.

7 THE WITNESS: My name is John Shomaker.

8 DIRECT EXAMINATION

9 BY MS. HENRIE:

10 Q. Dr. Shomaker, the Commissioners have
11 raised questions about the velocity of the flow in
12 the valley fill aquifer. Have you calculated the
13 velocity of the flow in the valley fill aquifer in
14 the vicinity of the hot wells?

15 MR. LAKINS: The same objection. This is
16 not rebuttal.

17 COMMISSIONER BALCH: This is an answer I
18 want.

19 MR. LAKINS: Yes, sir. I have to object
20 for the record.

21 A. Yes, I have.

22 Q. (By Ms. Henrie) Would you please describe?

23 A. Yes. I have taken the results from
24 several groundwater flow models that have been done
25 by Hawkins and Stevens and by the office of the

1 state engineer and using the transmissivity values
2 for the shallow aquifer in the area within a mile or
3 two down gradient from the hot wells and applying
4 the hydraulic gradient, the slope of the water table
5 that's in the Hawkins and Steven's report and also
6 applying an effective porosity or specific yield
7 that comes from a variety of sources going all the
8 way back to Harold Reader's sole study in the basin
9 and these groundwater flow models to calculate a
10 tracer velocity and an average linear velocity, and
11 that comes out to several tens to several hundreds
12 of feet per year. There is a large range because to
13 convert the transmissivity values that are in the
14 models to hydraulic conductivities requires us to
15 know the thickness of the aquifer and we don't have
16 a very good grip on that. So there is a range of
17 numbers, but they are all in that bracket between
18 several tens and several hundreds of feet per year.

19 Q. And the next question. Dan Hand was a
20 witness who testified a couple of days ago. He
21 described Lightning Dock's production and injection
22 volumes as 19,000 acre feet actually in excess of
23 19,000 acre feet. Do you know the actual volumes
24 proposed by Lightning Dock?

25 MR. LAKINS: This is not -- this is beyond

1 Dr. Shomaker's prior testimony or his disclosed
2 testimony or this is not an appropriate rebuttal
3 question. He was not the witness to address any of
4 those facts. He is basically saying Let me tell you
5 why the prior witness was wrong, and that is what is
6 happening with this question. That is
7 inappropriate.

8 MS. HENRIE: That is rebuttal.

9 MR. BRANCARD: It's appropriate. Go
10 ahead.

11 CHAIRMAN CATANACH: Go ahead.

12 Q. (By Ms. Henrie) To restate the question,
13 do you know the actual volumes of production and
14 injection proposed by Lightning Dock?

15 A. The 19,000 acre-foot figure that was
16 mentioned in the question is equivalent to about
17 just under 12,000 gallons per minute. And the
18 highest number that I have heard for the circulating
19 flow and the Cyrq project is 5,000 gallons per
20 minute.

21 Q. And that is current production injection
22 or is that the proposed injection?

23 A. It is my understanding that that is the
24 proposed.

25 Q. Thank you.

1 Next question, Dr. Shomaker --
2 Mr. Morrison already testified to that, let me move
3 on. The last question AmeriCulture's witnesses
4 raised concerns that injection into shallower wells,
5 and again these are wells that may be drilled to
6 1,500 feet but there is still the possibility of the
7 shallow injection, that that injectate will flow
8 laterally into the valley fill aquifer. What is
9 your opinion of that?

10 MR. LAKINS: He already gave his opinion
11 on that on my cross-examination of him. This is --
12 I am objecting to this line of -- which is not true
13 rebuttal. He already gave that and had the
14 opportunity to give that during their case-in-chief.

15 CHAIRMAN CATANACH: I would like to hear
16 it.

17 Q. (By Ms. Henrie) Please.

18 A. I think the fact that we know that there
19 is permeability through the fractures and we know
20 that because there is hot water with elevated
21 fluoride at the water table within the area of the
22 geothermal system, we know that the permeability
23 exists, and the process that Cyrq is carrying out
24 and will continue to carry out increases the
25 groundwater head or the pressure high in that system

1 and decreases it low in that system by creating the
2 cone of depression around the producing well or
3 wells. So we have increased the groundwater at
4 differential between the upper part and the lower
5 part of the system, and I think that means that the
6 water we inject will go down.

7 The water that is being injected is
8 also denser, and since it is at a lower temperature
9 so, I think -- and in essence the system will
10 continue to be a closed loop.

11 MS. HENRIE: Mr. Chairman, I pass the
12 witness.

13 CHAIRMAN CATANACH: Mr. Lakins?

14 CROSS-EXAMINATION

15 BY MR. LAKINS:

16 Q. Do you recall your testimony from two
17 years ago in 2013 about the permeability?

18 A. Not in any detail at all, Mr. Lakins.

19 Q. Do you recall that back in 2013 Lightning
20 Dock presented evidence that there would not be flow
21 between the injection intervals of 53-7 and 55-7 in
22 the shallow alluvium and they were not connected?
23 Do you recall that?

24 A. I don't recall that. I would have to look
25 at my transcript.

1 MR. LAKINS: Thank you. Pass the witness.

2 CHAIRMAN CATANACH: Ms. Marks, any
3 questions?

4 MS. MARKS: No.

5 CHAIRMAN CATANACH: Ms. Gault?

6 MS. GAULT: No questions.

7 EXAMINATION BY COMMISSIONER BALCH

8 COMMISSIONER BALCH: So we are really
9 looking at something more like about 9,000 acre feet
10 at production?

11 THE WITNESS: Yes, sir, we would be.

12 COMMISSIONER BALCH: Is it your opinion,
13 or what is your opinion about the potential impact
14 on that down gradient low from the injection
15 activities at the, kind of the south end of the
16 plume? Are we going to see an impact to the -- are
17 we going to see a range to that rate of down
18 gradient flow?

19 THE WITNESS: Down gradient flow will be
20 at the north end of the geothermal system. I think
21 there may be small changes. We do certainly
22 expect -- we have, in fact, seen and will expect to
23 see an increase in the -- or an increase in the
24 elevation of groundwater head within the preexisting
25 mound. And -- but I think that is the very force

1 that causes the water to move downward in the
2 geothermal system.

3 I would not say that there would be
4 no change in the outflow. I think there will be
5 change in the mixing pattern, and I think there will
6 be some change in the head distribution. And we
7 hydrogeologists never say never so, there might be
8 some change in the outflow.

9 COMMISSIONER BALCH: Thank you.

10 EXAMINATION BY COMMISSIONER PADILLA

11 COMMISSIONER PADILLA: Just one question.

12 I am just curious about that flow
13 rate. Is that -- in your opinion, is that a fairly
14 considerable flow rate or is that slow?

15 THE WITNESS: I think it would be a
16 typical flow rate for the circumstances. The
17 hydraulic gradient is not very steep and the
18 hydraulic conductivity of the sediments in the
19 valley fill aquifer, which is what I would be
20 looking at, and the outflow plume is -- is high. It
21 is not particularly low. It is moderate to high.

22 COMMISSIONER PADILLA: Would a flow rate
23 like this be more or less susceptible to activities
24 like those proposed in this hearing in your opinion?

25 THE WITNESS: I don't think that flow rate

1 will change measurably at all. I think the effects
2 of the -- of the proposed actions will be very
3 minor, very small, and also transitory.

4 COMMISSIONER PADILLA: Okay. Thank you.

5 EXAMINATION BY CHAIRMAN CATANACH

6 CHAIRMAN CATANACH: Dr. Shomaker, some of
7 the injected fluid that is injected into these
8 shallow wells, will -- a portion of that will go
9 into the alluvium, correct?

10 THE WITNESS: I am not sure. I think
11 probably Mr. Bowers has already addressed that point
12 much better than I would be able to. I think the --
13 in the area of the greenhouses on the upthrown block
14 of the walls along the -- as a result that we know
15 of that is between the injection well and the
16 production well. There is not very much alluvium.
17 And the injection would be principally into
18 fractured silicified deeper involvement or
19 volcanics.

20 CHAIRMAN CATANACH: So it is your
21 testimony that there is sufficient fractures from
22 shallow injection down to the deeper interval to
23 allow the water to be transmitted to those depths?

24 THE WITNESS: Yes, sir. That is correct.

25 CHAIRMAN CATANACH: Okay. I have nothing

1 further. Oh, I'm sorry, Mr. Brancard.

2 MR. BRANCARD: Just -- Michelle, do you
3 have the exhibits from AmeriCulture?

4 EXAMINATION BY MR. BRANCARD

5 MR. BRANCARD: I am looking at Exhibit P.

6 THE WITNESS: P, sorry.

7 MR. BRANCARD: Okay. Your testimony
8 discussed the increases in the water levels --

9 THE WITNESS: Yes, sir.

10 MR. BRANCARD: -- at the wells and there
11 has been a lot of testimony about the mounding at
12 these wells. I just want to just walk through this
13 document just to see some of the...

14 MR. LAKINS: Mr. Brancard, are you at any
15 chance at this?

16 MR. BRANCARD: So there is Figures 12
17 through 17 which sort of depict on a map, these are
18 the increases in the water levels?

19 THE WITNESS: Yes, sir. They are the
20 water level indicates in Figure 12, for example,
21 they are the change in water level elevation and the
22 shallow monitoring wells between early December of
23 2013 and January, 2000 -- or January 27th of 2014.

24 MR. BRANCARD: And then each figure
25 afterwards adds another month or so, is that

1 correct, so 13 is February?

2 THE WITNESS: Yes, sir, that is correct.

3 MR. BRANCARD: 14 is March?

4 THE WITNESS: They culminate with June in
5 Figure 17.

6 MR. BRANCARD: Okay. You testified that
7 these levels sort of plateau at some point?

8 THE WITNESS: Yes, sir, I did. That was
9 part of my testimony earlier in this hearing.

10 MR. BRANCARD: Okay. Following Figure 17,
11 these are then the graphs that show these water
12 levels on each of these wells?

13 THE WITNESS: Yes, they are. But these
14 graphs end in the middle of 2014. There is much
15 more recent information that I spoke of in this
16 hearing.

17 MR. BRANCARD: Okay. I just want to
18 clarify what we have -- what the Commission has in
19 front of them to look at, and this is the only data
20 that you have given us then on these water levels.
21 Well, you haven't given us, actually it's
22 AmeriCulture's exhibit.

23 THE WITNESS: Counsel reminds me that in
24 Exhibit 3, the Applicant's Exhibit 3, there are
25 hydrographs for Injection Well 55-7 and for

1 Production Well 45-7 that and these are plots that I
2 discussed in my direct testimony. There is also a
3 similar plot of water levels up to nearly -- well to
4 early summer of 2015. And then there is also in
5 that same exhibit a similar plot for the Deep
6 Monitoring Well 47-7. And I also testified that the
7 same time I was discussing these, that the water
8 levels in the shallow monitoring wells, monitoring
9 wells had also stabilized and have reached
10 essentially steady state.

11 MR. BRANCARD: Thank you.

12 CHAIRMAN CATANACH: This witness may be
13 excused. Mr. Balch would like to ask Mr. Bowers one
14 or two more questions.

15 (Whereupon witness was recalled.)

16 MS. HENRIE: Mr. Chair, my whole team is
17 here so we are available for the Commissioners'
18 questions.

19 THE REPORTER: State your name for the
20 record.

21 THE WITNESS: Roger Bowers.

22 EXAMINATION BY COMMISSIONER BALCH

23 COMMISSIONER BALCH: I just want to get a
24 little better handle on the shallow geology,
25 particularly as it relates to the shallow part of

1 the aquifer away from the plume.

2 THE WITNESS: Okay.

3 COMMISSIONER BALCH: There appears to be
4 alluvium in every well. There is no outcrop of any
5 other lithified or sedimentary layers in the area?

6 THE WITNESS: That is correct. There is a
7 layer of alluvium. There are no outcrops that I
8 know of, but the drilling logs do show that that
9 alluvial thickness varies greatly over the area.

10 COMMISSIONER BALCH: And the silicified
11 sediments which are -- I guess I am really curious,
12 I mean, you have talked to the Burgetts, you know
13 about all of their shallow well drilling because you
14 have looked at that as a part of your geologic
15 study.

16 THE WITNESS: Yes, sir, I have.

17 COMMISSIONER BALCH: So these silicified
18 sediments, they show up on all the wells that are
19 presented to us. Do they show up on all of the
20 wells, period? Are they a characteristic of the
21 base of the shallow part of the aquifer?

22 THE WITNESS: I am trying to think if
23 there is a well that they do not show up in, and
24 offhand, I can't. They do show up in basically all
25 the wells. It is just like Mr. Witcher explained,

1 there is this horse block in the greenhouse area.
2 So obviously the volcanics start at a much shallower
3 depth. But even when we get off to the side, we
4 still see some of them. But as a general statement,
5 yes, they extend over quite an area. It is just
6 that the depth and the thickness.

7 COMMISSIONER BALCH: It looks like on
8 Mr. Witcher's horse block they define the base of
9 the shallow aquifer.

10 THE WITNESS: That is probably accurate.

11 COMMISSIONER BALCH: And when you are on
12 the down drop part of the block like 45-7, 55 --
13 well, 55-7 also, it looks like you may have a little
14 bit of alluvium below that as well.

15 THE WITNESS: Well, there is -- if I
16 understand what you are referring to, yeah, they go
17 through some silicified -- I just generally call
18 them silicified volcanics. It is part of the Gila
19 conglomerate as far as we know, thanks to
20 Mr. Witcher. There are zones that are not fully
21 silicified, so it is what has commonly been called
22 this red rhyolite over the years. You get below
23 that and not in all of the wells, but in some of the
24 wells you do go back into some gravels that are not
25 as silicified.

1 COMMISSIONER BALCH: Like in the State
2 Number 2 it looks like there is some unspecified
3 conglomerate below that silicified interval and in
4 the 45-7 and the 55-7 you go back into alluvium.

5 THE WITNESS: Right. I don't know that I
6 would exactly classify it as alluvium per se, but it
7 is more unconsolidated volcanic plastic materials.
8 You could call it less lithified conglomerate made
9 up of the volcanic rocks and in those volcanic rocks
10 you see the whole suite of types of volcanics,
11 anthracites, rhyolites, everything from the Pyramid
12 Mountains that has washed off.

13 COMMISSIONER BALCH: How would you
14 characterize the permeability of those rocks
15 compared to the silicified sediments?

16 THE WITNESS: It varies. There is some
17 permeability in there. I would say the silicified
18 volcanics in some instances probably have greater
19 permeability because they have been silicified, they
20 have been fractured, and so those fractures would
21 stay open a little more; whereas, in the more
22 unconsolidated or unlithified gravels you might have
23 some clays that come into play there that would
24 decrease the permeability to some extent.

25 COMMISSIONER BALCH: And would you -- so

1 where would you put -- if you were mapping the base
2 of the groundwater aquifer, where would you put it,
3 the shallow aquifer.

4 THE WITNESS: I don't see -- based on
5 temperature studies, I don't see a very specific
6 well-defined shallow aquifer and especially in the
7 main upflow area. I mean, you just have this giant
8 plume.

9 COMMISSIONER BALCH: Sure. I am talking
10 about the area right outside of the upflow where you
11 are in the mixing zone with the freshwater aquifer.

12 THE WITNESS: How would I characterize it?

13 COMMISSIONER BALCH: Well, where would you
14 place it on your strap column?

15 THE WITNESS: Based on some gradient
16 holes, I would put it still fairly shallow. I am
17 not sure if I fully understand what your question
18 is.

19 COMMISSIONER BALCH: I am trying to find a
20 marker --

21 THE WITNESS: Okay.

22 COMMISSIONER BALCH: -- that would define
23 roughly the base of the shallow aquifer.

24 THE WITNESS: And I would say that that
25 would be very difficult to do because it does vary

1 that we see the thicknesses vary over the area
2 enough that it -- I think it would be very difficult
3 to just --

4 COMMISSIONER BALCH: I'm not looking for a
5 set depth. I am looking for a marker. That is why
6 I talked about the silicified sediment. Would that
7 be a marker?

8 THE WITNESS: It would be a marker, yes.

9 COMMISSIONER BALCH: For the base of the
10 shallow part of the aquifer?

11 THE WITNESS: As a general rule, I would
12 agree with that.

13 COMMISSIONER BALCH: Outside of the upwell
14 plume?

15 THE WITNESS: Right. Part of the problem
16 we find there, in my opinion, would be the further
17 out you get the less it's silicified some of those
18 volcanics make.

19 COMMISSIONER BALCH: Sure. Because you
20 don't have the influx of the geothermal water.

21 THE WITNESS: Of the geothermal, right,
22 exactly.

23 COMMISSIONER BALCH: Thank you.

24 MS. GAULT: Mr. Chairman, can I ask
25 another question because of his question?

1 CHAIRMAN CATANACH: Okay.

2 EXAMINATION BY MS. GAULT

3 MS. GAULT: Since the alluvium, you can't
4 define where it is or the markers or whatever, where
5 are you going to put the screens on the injection
6 wells? How deep they would be, because what we are
7 concerned, we want to know how it is affecting our
8 shallow waters. So how deep the screens will be,
9 how big they will be?

10 THE WITNESS: I cannot address how big
11 they will be. That is up to the drilling engineers
12 to design that.

13 MS. GAULT: But if they don't know where
14 the markers and where they -- and if is not well
15 defined, they will have to develop for each
16 injection well?

17 THE WITNESS: Well, as a general rule the
18 depths that we have picked are to make sure that we
19 do hit those markers.

20 MS. GAULT: Okay.

21 THE WITNESS: Even though we don't know
22 the exact depth to the given foot, the general well
23 design is designed to make sure we do hit them.

24 MS. GAULT: And accordingly the screen.

25 THE WITNESS: Yes.

1 MS. GAULT: Okay. Thank you.

2 CHAIRMAN CATANACH: Anything further from
3 this witness? This witness may be excused.

4 COMMISSIONER BALCH: Mr. Witcher is not
5 available today?

6 MR. LAKINS: No, sir.

7 COMMISSIONER BALCH: Because I would ask
8 him the same questions.

9 CHAIRMAN CATANACH: Are you done,
10 Ms. Henrie?

11 MS. HENRIE: Yes, Mr. Chair, I am. I
12 would like to ask for a break before we move into
13 closing.

14 CHAIRMAN CATANACH: Who is going to give
15 closing statements today?

16 MS. HENRIE: Pat and I are going to split
17 our 30 minutes for Lightning Dock.

18 CHAIRMAN CATANACH: And, Mr. Lakins. Are
19 you doing one, Ms. Marks?

20 MS. MARKS: Just a little statement.

21 MS. GAULT: I will give a little
22 statement, too.

23 CHAIRMAN CATANACH: Okay. Let's take 10
24 minutes.

25 (A recess was taken.)

1 CHAIRMAN CATANACH: Let's go back on the
2 record. At this time and I think that you guys have
3 finished your cases and we are ready for closing. I
4 think what we will do is we will let you go first,
5 Ms. Henrie, and then Mr. Lakins and then the two
6 other additional parties if you guys want to make
7 statements. So you may proceed, Ms. Henrie.

8 MS. HENRIE: Thank you, Mr. Chairman. It
9 is almost 10:15, and so we will be finished by
10 10:45. I am going to take part of the time and Pat
11 is going speak to address you as well.

12 So on behalf of Lightning Dock
13 Geothermal, we have submitted -- we originally
14 submitted four injection well applications, we have
15 withdrawn one, so we have three injection well
16 applications in front of you.

17 The criteria for consideration was
18 Exhibit A to our prehearing statement. It is in the
19 geothermal regulations that is NMAC 19.14.93.8.
20 There are some parts of that criteria that have to
21 do with the form of the application. David Janney
22 testified to confirm that the application was filed
23 according to Sections A and B of that provision.

24 And Section C just says -- specifies
25 the requirements include that the proposal is in the

1 interest of conservation, will prevent waste,
2 protect correlative rights and that the well is
3 properly cased, et cetera.

4 We have testified about conservation,
5 about how this -- all of the water produced gets
6 reinjected back into the resource. We have talked
7 about waste that we think that this proposal well
8 will not cause waste of the resource, in fact, it
9 will help bring the resource to fruition.

10 We have also talked about correlative
11 rights, and even under any theory of the usable
12 resource, Lightning Dock is entitled to a good
13 portion of that resource and to be allowed to
14 produce from it. It is certainly a shared resource,
15 both shallow and deep.

16 There were questions about the
17 composition or how that resource looks, and I would
18 like to direct the Commission's attention to a few
19 things. One is our Exhibit 6 which is Circular 177.
20 There are pocket parts that does have different
21 fluoride values and TDS values for different wells
22 in the valley.

23 There is also Lightning Dock
24 Exhibit 2 which has constituents for the deep Well
25 45-7, so you can compare those.

1 I can also direct you to
2 AmeriCulture's Exhibit P, which has a table. The
3 second and the third columns of that table, it is
4 called Summary of Alluvial Geothermal Groundwater
5 Analytical Results. So Columns 2 and 3 are Burgett
6 wells in the greenhouse area. One of those wells
7 was expressly mapped in that same Exhibit P as G3S.
8 It is down south of the greenhouses near Dale
9 Burgett's house. That is the well where there was
10 some very high fluoride. Just taking all of those
11 numbers and kind of averaging them, I am just,
12 again, looking at fluoride and TDS. In the deep
13 well we are seeing in the deep wells a minimum of
14 12 parts per million, maximum 14 parts per million;
15 that means about 12.5. Again, these are the deep
16 wells.

17 For TDS we are seeing a minimum of
18 1,270 a maximum of 1,310. Again, a mean of about
19 1,298. That is the deep well. Compare that to the
20 shallow wells in the greenhouse area, fluoride we
21 are seeing a minimum of 1.3, maximum of 15.46, so an
22 average of about nine. TDS we are seeing a minimum
23 of 1,110, maximum of 2,010, so a mean of 1,526.

24 So what that shows is that the
25 geothermal water, the deep water is actually higher

1 in fluoride but lower in TDS than the shallow
2 groundwater, and that is important. I will get to
3 that a little bit further in my closing.

4 Commissioners, I would submit to you
5 that this is not a drinking water source. We put on
6 testimony and evidence that in the area of the
7 greenhouse where that water is hot, there is not a
8 separate shallow groundwater. It is all connected
9 and that connection goes all the way to the top of
10 the water table. So where the water is hot when you
11 drill into the ground and you experience hot water,
12 that is part of the geothermal system; that has been
13 our experts' opinion and that is in our testimony.

14 And that being said, I just want to
15 put this out there because I feel like the
16 Commission is headed down a path, so I wanted to
17 give you a chance to think about this.

18 We feel strongly the top of the
19 resource is defined by the water table, surface and
20 temperature. We should not be restricted from
21 injection from the water table to any depth. The
22 highest permeability is at the top of the resource.
23 And if the -- if the alluvium at the water table is
24 hot, it is part of the resource. We feel strongly
25 that we should not have to be limited to injection

1 that is below a certain point because that alluvium,
2 that shallow alluvium where it is hot is part of the
3 geothermal system. Its characteristics, we've
4 already talked about it in terms of fluoride, in
5 terms of TDS and it is different from, separate from
6 the valley fill shallow groundwater that is used as
7 a drinking water source.

8 Commissioners, we heard from
9 AmeriCulture their concerns. We heard Mr. Witcher
10 testify that he believes this resource is very
11 small. It is limited to 2 megawatts. If that were
12 true, we would be already belly up. This power
13 plant has been operating for 20 months. We have not
14 seen any change in the temperature. We have seen
15 mounding, yes, we have seen some chemical change in
16 our monitoring wells but the system is in
17 equilibrium, has come back into equilibrium after
18 power plant startup; that is again what we expect to
19 see.

20 If we are wrong we are going to know
21 it because the temperature will drop off slowly and
22 that is how under -- you heard Mr. Morrison testify,
23 we are looking for that. We are checking for that
24 because that means we need to change how we manage
25 our well field. We guard against that because that

1 is a signal to us you are doing something wrong.
2 Maybe you produce less, maybe you put more flow into
3 a different injection well, but that is how you look
4 at the resource and understand whether it is being
5 managed to the capacity of the resource. So, again,
6 I would just submit to you that we are monitoring
7 that and that is also going forward.

8 Also, to the point of monitoring, the
9 conditions of approval that were proposed by OCD
10 with which we agree, those are in the record. They
11 do require monitoring wells to be drilled, one for
12 each injection well so there will be a monitoring
13 well that is tied to that injection well to monitor
14 what is going on in that injection well.

15 Commissioners, you have heard claims
16 of damage here, yesterday, the day before, to a
17 power plant that is in our opinion unfinanceble. It
18 is hard to finance something that does not have a
19 revenue stream. We consider that power plant to be
20 speculative. I am just putting that on the record.

21 We have heard about a claim of harm,
22 damage to well A444, that is the federal well that
23 is at the end of the affluent from the fish tank.
24 We heard that the claim of damage includes higher
25 fluoride and higher TDS, but as I just told you the

1 geothermal water has a lower TDS. So, again, just
2 putting out there the question whether it would be
3 fish poop that is affecting the TDS in that well
4 instead of our geothermal injection.

5 There is a claim that injecting at
6 150 degrees is problematic and yet in AmeriCulture's
7 exhibits we have their injection well, which is
8 Exhibit Q, the same depth 150 feet is the top of the
9 injection going down to 490. So it is really hard
10 to argue that we are doing anything different than
11 what AmeriCulture proposed. It is a way to get the
12 water back in the ground back into the geothermal
13 system.

14 There is a claim that contracts don't
15 apply. The Joint Facilities Operating Agreement.
16 AmeriCulture's shareholders won't accept the
17 mitigation tendered by Lightning Dock should harm
18 happen. There was also a claim that Lightning Dock
19 has no water rights, despite testimony from D.L.
20 Sanders in Exhibit E, which AmeriCulture's Exhibit E
21 of the Rosette water rights have been acquired by
22 Lightning Dock. That is what Mr. Sanders testified
23 to.

24 Lightning Dock is doing everything it
25 can to implement a lease that was let in 1979 with

1 BLM. It is the intent of the federal government
2 that this resource be developed, that it generate
3 electricity, that it pay royalties. Those royalties
4 get paid to not only the BLM but the state of
5 Hidalgo County. It's been the intent of the federal
6 government since 1979 that this resource be
7 developed.

8 And, Commissioners, we are doing
9 everything we can to develop them responsibly,
10 properly and at a scale that we believe makes sense
11 in is a sustainable, and meanwhile AmeriCulture has
12 been doing everything they can to stop us. You
13 heard testimony yesterday that after the discharge
14 permit was issued in 2009 AmeriCulture stepped back
15 and did nothing until 2013. Well, that is not
16 correct, there are --

17 MR. LAKINS: Objection. That is arguing
18 facts not in evidence.

19 MS. HENRIE: I will just show you, then.
20 2009, 2010.

21 MR. LAKINS: I have an objection.

22 MS. HENRIE: Multiple agencies.

23 MR. LAKINS: I have an objection.

24 MR. BRANCARD: Please argue the record.

25 MS. HENRIE: We have unclean hands, here,

1 and we also have a situation where I know we are
2 going to be back in front of this agency. I know we
3 are going to have to drill another production well
4 or injection well at some point in time in the
5 future. I really want to beg this Commission to
6 please establish criteria, clarify your regulations
7 about your procedures, about what is an acceptable
8 protest, about what is acceptable as an application
9 for a hearing, because, otherwise we are just going
10 to be back Ground Hog Day spending our resources,
11 spending the division's resources, spending your
12 time hearing these arguments again and again.

13 With that, I will turn it over to Pat
14 Rogers.

15 MR. ROGERS: Thank you. I would like to
16 direct your attention to our proposed findings of
17 fact and conclusions of law. If you will turn to
18 the last two, it deals directly with this issue
19 about the discretion that we believe the Commission
20 currently enjoys. And I am looking specifically at
21 the last two and requesting this in the order that
22 the division director shall exercise discretion
23 about whether a good cause exists to hear an
24 objection to an injection well and hereinafter the
25 division director shall exercise discretion about

1 whether good cause exists to grant an application
2 for a hearing.

3 Particularly for an injection well
4 that is going to be required, that is going to be in
5 the area again for which -- which if you allow the
6 simple, we object to this, which is basically what
7 happened with AmeriCulture to trigger all of this
8 stuff, we will be back here hearing the same
9 matters, hearing the same thing again.

10 The important thing about this and
11 the section, the section at issue is 19.14,
12 19.14.93.8C, and it provides In the event the form
13 is not approved because of the objection from an
14 effected geothermal lease owner or for other reason,
15 the application will be set for public hearing if
16 the Applicant so requests.

17 So we believe that the current
18 discretion is with the Division to determine whether
19 or not a hearing is required. And what this
20 regulation can only be read is that if it is denied,
21 then the Applicant has the due process right of
22 requesting that. This is not designed to do
23 anything except allow the Division that authority.

24 There is another way in the
25 short-term to address this issue as well. Ms. Marks

1 mentioned and in her order it proposes that your
2 order include a sufficient geographic area so
3 that -- so that, again, through that order and
4 through this proceeding the Division would have
5 discretion. In other words, that your order
6 encompass an area that allows that.

7 We are certainly amenable to what
8 that might -- what that specific area might be. And
9 it is important that you understand we are not
10 saying, and certainly don't want to be construed to
11 say, any injection location that we identify has to
12 be approved, of course not. It has to be evaluated
13 by the Division, the experts in charge of that,
14 experts in charge of looking at those matters, and
15 if they agree then it would be approved. If they
16 don't agree then we have the right to go to the
17 hearing.

18 So, certainly one area if you need a
19 specific area would be Sections 5, 6, 7, 8, 17, and
20 18; Township 24 south; Range 19 west; and
21 Sections 1, 12, 13; Township 25 south; Range 20
22 west. You have gotten the flavor of this. We are
23 concerned that in large part this is a replay of the
24 2013 decision of this Commission and replays of
25 earlier decisions as well. We believe there is a

1 way of addressing that for truly minor sorts of
2 analysis.

3 The reason that this is important is
4 because the geothermal resource is not confined to
5 our great State of New Mexico. This company and all
6 companies interested in geothermal development
7 actually have to weigh the cost of administrative
8 and regulatory processes. No other state requires
9 this on an injection well. No other state puts the
10 Applicant to this sort of test. This is a business
11 that is heavily dependent upon the economics. And
12 to allow an Applicant in this case, a competitor to
13 hold that up for indefinite periods has the obvious
14 intended impact on that competitor of slowing down,
15 delaying or stopping or certainly future
16 development. So what I am asking for is a common
17 sense interpretation of your existing regulation.
18 You requested that in the Findings 2 and 3, as well
19 as Ms. Marks' suggestion which would address the
20 current situation providing that an order encompass
21 an area, a reasonable area that would allow that
22 same application.

23 Thank you.

24 CHAIRMAN CATANACH: Thank you, Mr. Rogers,
25 Ms. Henrie.

1 Mr. Lakins.

2 MR. LAKINS: Mr. Chairman, Commissioners.

3 First I would like to thank the Commission for its
4 attention and patience, and it's obvious the level
5 of detail that this Commission is paying to this
6 issue and the importance it is being placed on this
7 issue.

8 And I think that Mr. Rogers makes a
9 very, very good point and I think that plays off of
10 Commissioner Balch's point about what can be done.
11 And I submit that what has realistically arisen
12 through this is the necessity for a rule-making
13 proceeding. That if there is going to be some sort
14 of across the board type of determination about
15 wells, geothermal injection wells, within the State
16 of New Mexico in any given spot, that that should be
17 subject to a rule-making decision to establish some
18 sort of criteria. That is my opinion on that.

19 Because if the approach is taken that
20 this Commission says AmeriCulture is estopped and
21 what the OCD proposed findings and conclusions also
22 say is that AmeriCulture should be estopped from
23 being able to bring any future protest, I submit
24 that is a wholesale violation of due process.

25 The statutory scheme, as it exists is

1 there to provide protection for everybody's
2 individual rights, for protection of the public
3 water supply, for the protection of the State of
4 New Mexico's interests.

5 And doing that totally -- taking that
6 approach wholly guts due process and is wholly
7 violative of the statutory scheme because every
8 protest, every application involves a different set
9 of facts. Now, I submit and I -- that -- and I
10 agree that the law is well-established that the
11 findings of the Commission are given collateral
12 estoppel affect. That when this Commission says
13 this is what we have decided about this particular
14 issue, that is over with and done, and issue cannot
15 be brought back, it cannot be relitigated. When
16 there is specific findings to that, any party can be
17 estopped from making that argument again because the
18 Commission has already heard it.

19 That is the standard of law. But
20 when there is a new issue and a new fact and a new
21 possibility that does not comply with collateral
22 estoppel, that is a new issue. That is different.

23 We greatly appreciate that Lightning
24 Dock has acknowledged our concerns about the one
25 close monitoring well, but that just kind of leads

1 into this whole issue and the problem presented to
2 the Commission right now.

3 And I think that this matter cannot
4 be incomplete by leaving out Mr. Dale Burgett.
5 Mr. Burgett and his -- what he did that shows what
6 hasn't been done here. Mr. Burgett was a surface
7 estate owner. All of those Rosette buildings are
8 part of his company. Now, Mr. Burgett passed away
9 but his company still survives. They are not here
10 today as a party, but they are the surface estate
11 owner of that property. They also have rights to
12 drill wells. Any new fee owner would have the right
13 to do the same thing.

14 What Mr. Burgett had that we don't
15 have, though, is knowledge. We heard he went out
16 there and drilled all kinds of wells. I would not
17 be surprised to learn that some of them were not
18 permitted properly, but Mr. Burgett had knowledge.
19 He knew that if you did something here, this
20 happened over here. We don't have that level of
21 information before the Commission right now.

22 We are lacking in information and the
23 Commission is lacking in information.

24 What was presented was that Lightning
25 Dock has information, they admitted. Mr. Janney

1 stated that there is monitoring well data that is
2 not here. That the monitoring well data showed
3 increases in the level of fluorides in the
4 monitoring wells at one to 2 milligrams per liter.
5 That is on -- in the transcript between pages 49 and
6 52 of the testimony.

7 He acknowledged that what has
8 happened since production is the chemistry is
9 changing. We don't have well logs. They are not
10 here. And what Mr. Miller said as well was that
11 there will be more changes to the chemistry. His
12 contention is you can't contaminate what is already
13 contaminated. That is not the way our law works.

14 The drinking water standards are very
15 specific about background levels, and that an
16 existing background level is the standard. They
17 contend -- basically the letter from the OCD
18 provides a 17-milligram trigger level. I submit
19 that is inappropriate to use a 17-milligram trigger
20 for a well that might have a three fluoride
21 existing. I don't think that is right and I think
22 that should be an issue before the Commission.

23 But we had a hearing before. We had
24 a hearing two years ago. On that wall right over
25 there where that television screen is now, we taped

1 up well logs. Those were well logs for 53-7 and
2 55-7. We looked at them back then. And the
3 evidence that the Applicant plant put on at that
4 time, which became embodied in the order from that
5 case at paragraph 15 was that Los Lobos presented
6 evidence that the geothermal fluid production zone
7 in 53-7 and 55-7 is the same. The fluid flow in
8 intervals occur in the same formations and -- and
9 this is key -- are not directly connected to the
10 alluvial aquifer at 400 feet below ground surface.

11 That was the evidence from before.
12 If collateral estoppel applies this should apply,
13 because what has happened now is a 180-degree shift
14 in the Applicant's position. And what we have been
15 told now is that there is so much permeability that
16 we can increase our injection up to 8,000 acre-feet
17 a year and there won't be any leakage into the
18 shallow alluvial aquifer, there will be no effect on
19 the shallow alluvial aquifer. That is wholly
20 contradictory to the prior position taken and from
21 the evidence that was presented at that time.

22 What we do know is that we have had
23 impacts. We have had impacts on AmeriCulture's
24 domestic well, the A444. That is permitted as a
25 domestic well. There have been impacts on it. And

1 I submit that what AmeriCulture's concerns at the
2 prior hearing were have been realized. We were
3 concerned that the injection protocol that was
4 proposed back then, put into effect back then, what
5 we said was going to happen did, and the evidence
6 shows it. Because there is mounding, there is
7 groundwater mounding. There is raising of the water
8 levels in the monitoring wells. There is changes in
9 the chemistry of the monitoring wells. Those were
10 our concerns two years ago; that has happened, the
11 evidence shows that.

12 A big problem, I think is that there
13 is no models here. There is insufficient data. We
14 just heard Mister -- we just heard testimony this
15 morning that the level of that alluvial varies. We
16 didn't know what it is. We don't know what it is
17 that their proposed well location 15-8, we don't
18 know what it is at 67-7 and we didn't know at what
19 it is at 13-7. I submit that a proper and prudent
20 course that could be incorporated in how the
21 Commission decision works out is that let's have
22 some data first.

23 I think Commissioner Balch is exactly
24 on the right track. We should case below an
25 impermeable layer to ensure that shallow alluvial is

1 protected. It could be different at 15-8.8 from
2 what it is at 13-7. But a layer, some zone, I
3 think, is a really good way to look at it because it
4 is the protection of that shallow groundwater that
5 is at play here more than anything else.

6 We are really glad to hear that that
7 63A-7 was been withdrawn. That has been our biggest
8 concern because fluoride injecting into that well
9 would make it to a state well one, increase the
10 fluoride, and based upon what Mr. Seawright said
11 about what he needs for his tilapia fish, the level
12 of fluoride in the water right now is just kind of
13 at tolerable. If it exceeds a certain amount, we
14 are out of business. The concern that we have over
15 the 13-7 well is that it is not too far from our
16 cold domestic supply well that we use now. If
17 injection into 13-7 happens and it makes it to our
18 domestic supply well, we loose our domestic supply.
19 We are out of business. Those are the types of
20 concerns that we have. This is not harassment and
21 delay and intentional financial cost to Lightning
22 Dock. These are legitimate concerns for our
23 business.

24 One thing you just heard a lot of
25 test -- a little bit of closing and a lot of

1 testimony on is this joint facilities operating
2 agreement, this contract. While I submit to you it
3 is a red herring, for several reasons. One it
4 hasn't arisen. The contemplated potential
5 impairment isn't on the table under the JFOA.

6 Second, and as Mr. Seawright
7 testified to yesterday, there has been a federal
8 lawsuit filed light -- Los Lobos and Lightning Dock
9 on June 26th filed a federal lawsuit. The case
10 number for notice is 215-CV-547; I will provide a
11 copy of the complaint. But Lightning Dock has asked
12 a federal court to make a determination of the
13 legality of the joint facilities operating
14 agreement, the proposed power plant. So the issue
15 that was talked about is not before this Commission,
16 one, because it is speculative and moot at the
17 moment. But, two, Lightning Dock has asked a
18 federal court to make those determinations already.
19 Those are aspects that this Commission then should
20 not address.

21 But I think that Commissioner Padilla
22 raised a really good point. I think he couldn't
23 help but notice I was nodding my head and agreeing
24 with him yesterday when he made that point about the
25 water on that state lease that is AmeriCulture's

1 geothermal water right. And as Commissioner Padilla
2 had asked Mr. Seawright, well, isn't that under the
3 OCD? And that sort of a yes but answer because yes,
4 the water rights are all under the OCD, period.
5 However, there is really a dual jurisdiction issue
6 here because the Commission has jurisdiction over
7 the State's minerals. And I am going to cite you to
8 the case of Rosette against United States, which is
9 the case that D.L. Sanders and I were talking about.
10 I happen to have been Dale Burgett's attorney at the
11 time when this litigation was done. And the
12 citation is 2007 Court of Appeals 136, which is a
13 2000 -- this was a case at the Court of Appeals.
14 And three paragraphs, for Mr. Brancard's benefit,
15 46, 62, and 67, and what this case says in the
16 fundamental aspect of this overlapping jurisdiction
17 The Geothermal Resources Conservation Act protects
18 geothermal resources by regulating wells and
19 prohibiting waste. And this is in conjunction with
20 the Geothermal Resources Act itself. And read in
21 conjunction both acts apply to the development and
22 conservation of State held geothermal resources.

23 The resources that are on that State
24 land that Mr. Seawright has a permit to utilize are
25 under this jurisdiction of the OCD -- OCC. And what

1 this case also states which is very, very important
2 is that water is one medium from which heat can be
3 obtained.

4 The Court was very clear to point out
5 that the mineral interest is distinguished from the
6 water. They are two entirely different things. So
7 what is at issue here is the heat, not the water
8 that is conveying the heat, but the heat, and hence
9 the overlapping jurisdiction issue.

10 So it is the heat and the protection
11 of the heat that we have the right to bring a
12 concern to the Commission about. And that is what
13 we said was that if that injection at 63A-7 happens
14 and it cools this off, that degrades our mineral
15 right that we have as protected under State law.

16 The burden that the Applicant bears
17 includes a showing that the shallower groundwater
18 will be protected. And we have a concern about well
19 or proposed site 76-7, because what the evidence has
20 shown -- and I want to point out the proximity
21 between 67-7 as proposed and where Monitoring
22 Well 5. Is this is on Rosette fee land. The data
23 for Monitoring Well 5, which was in our Exhibit P
24 but it is at Table 7, shows the fluoride level on
25 that well at 1.3. That is below drinking water

1 standards, and injection the shallow alluvial that
2 close with admittedly much higher fluoride level
3 water and based upon the acknowledged, rather
4 substantially, good permeability of the shallow
5 alluvial and that well is at 55 to 85 feet are those
6 wells, that would directly impact what is and
7 potentially could be a drinking water source. That
8 is -- that is good water. There is nothing that
9 prohibits Rosette as a fee estate owner or any other
10 fee estate owner that Rosette might sell to from
11 sinking a well and getting good water. I think that
12 what you have really learned through this is that
13 there is a complex geology. I am not a geologist,
14 but I can appreciate the complex uncertainty of what
15 is underground.

16 And I think that is the big problem
17 here. There is a complex geology that we really
18 don't know exactly what every layer is and where it
19 is at.

20 We are not here in any way, shape or
21 form to try to stop progress, we support an
22 operation happening and going to productivity. We
23 have a concern of how the path has been proceeded
24 upon by the proposals that have happened in the
25 past. The proposed injections that we discussed two

1 years ago. These four very shallow level wells that
2 would go into the alluvial, and I think our concern
3 is even more greatly exacerbated by the testimony we
4 have heard today and what we have heard before about
5 seven wells that exist; some of them are improving,
6 but the reason they want to put shallow is
7 financial.

8 They told us their reason for shallow
9 was cost or risk financially.

10 And financial risk to the company
11 should not outweigh the law that says resources are
12 protected.

13 What we submit is that there should
14 be some sort of appropriate staged approach here to
15 get it done and figure out how to get it done right.

16 If wellbores were sunk, if wells were
17 sunk, we had logs and we knew what was where prior
18 to completion, prior to determination of a depth or
19 whatever so that we knew they weren't going into the
20 shallow alluvium, something, but we are lacking
21 information. We think that that type of information
22 should be provided first, not after the fact,
23 because what seems to have happened after the fact
24 is that what they said two years ago is wrong.

25 We think there should be some sort of

1 approach of that nature that the geology of any
2 given site concerning this is a complex area, should
3 be evaluated appropriately, not let's hide the ball
4 about what is going to get done.

5 And it is the same thing with the --
6 with the chemistry levels. We don't think there
7 should be a blanket approach, particularly the 17
8 that is much higher than any other well in that
9 area, but it should be more site specific. That if
10 there is, you know, we find 13-7 has 1.5 fluoride
11 water underneath it, then that shouldn't be allowed
12 to go up to 12 much less 17. There needs to be a
13 smarter approach. We think that the monitoring
14 well, monitoring well data should be transparent.
15 There -- when we had the hearing on my motion to
16 vacate, their expert said that the underlying data
17 is not trade secret. But we don't have it. It is
18 being withheld as confidential. We think it would
19 be important for that kind of data to be made
20 available so that we all know what is going on,
21 because that is our concern is we don't know what is
22 going on. We are seeing changes. We hear there's
23 changes. They acknowledge there is changes, but we
24 don't know the extent of them. That is a concern
25 for us. There should be transparency here.

1 I think really what this all evolves
2 into is that this Commission has a very difficult
3 task. This is not just these, now three wells, but
4 what is the path to proceed in the future so that
5 smart decision-making can be made in a better
6 process than where we are at today.

7 And I submit that is a challenge, and
8 I don't have an answer to that one.

9 But I don't think they should be
10 hiding the football. I think that the approach that
11 should be taken is more site specific and very
12 fundamentally geared towards protecting the shallow
13 groundwater to ensure, as well, that on any given
14 area, because it is obvious from what I have seen
15 and from what the data shows is that the water isn't
16 the same at all over the place there. There are
17 compartmentalized areas geologically and when you
18 take the approach let's just look at the whole big
19 picture thing and the whole thing and consider it
20 one great big bowl of water and not recognize there
21 are divisions with inside there, I think that is the
22 wrong approach. I think that it needs to be
23 recognized that due to the complex geology, due to
24 the uncertain nature that a smarter approach that
25 recognizes those variables should be adopted.

1 We believe that maybe a phased
2 approach would be a good idea. Start with 13-7.
3 They have got these other wells that they say are
4 improving and going online, well, let's wrap it up
5 maybe with some sort of oversight. Kind of put your
6 money where your mouth is this time. Show us that
7 what you are doing is actually protecting. I think
8 that the intent embodied in the prior orders went to
9 the statutory protections about casing off strata.
10 That is in the statutes that geothermal resources
11 and injection wells are supposed to case off strata.
12 It is in the orders from before. Those types of
13 provisions should be implemented here. Those types
14 of provisions should be required in the future, and
15 I think we have got to have more data to ensure that
16 that does happen.

17 I think that the 13-7 when they are
18 saying let's go 500, we believe that should be
19 deeper, at a minimum. They have given us evidence
20 there is much deeper wells out there. They talked
21 about these this morning, the depth from three to
22 six. And putting a 500 -- and opening of 500,
23 though maybe it drills it to 15, we are still
24 talking an opening of 500. It doesn't mean it
25 should be deeper to bedrock, to an impermeable layer

1 something so that the injection wells that they want
2 to drill just make sure that they protect the
3 shallow alluvial and that we don't get
4 contamination. We don't get our drinking water
5 supplies, our well supplies, all of that altered to
6 such an extent that we can't drink our water and we
7 cannot operate our business.

8 I would like to address one point
9 this 19,000 number, 9,000 number. The 19,000
10 acre-feet number came from a 2011 permit which
11 Ms. Henrie talked about that was an application to
12 the State engineer for over 19,000 acre-feet that
13 they had applied for to use in this. But I think
14 what is important to recognize is that they also
15 said there is 9,000 acre-feet that is going to be
16 the coproduction. That is a ton of water, and there
17 can be a ton of impact on it. And we just are
18 asking for assurance that our supplies, our
19 geothermal resources are protected as well as that
20 the law that exists is complied with, particularly
21 the protection provided in the text, statutory that
22 is seen for the public. Not just us, but there for
23 the public. I am not going to read the statutes.
24 The Commission knows what it says.

25 Thank you.

1 CHAIRMAN CATANACH: Thank you, Mr. Lakins.

2 Ms. Marks?

3 MS. MARKS: Mr. Chairman, once you told me
4 to sit down in these proceedings, so I will sit
5 down.

6 The purpose of the Geothermal
7 Resources Conservation Act 71-5-2. If you will
8 humor me, Section A says It is hereby found and
9 determined that the people of the State of
10 New Mexico have a direct and primary interest in the
11 development of geothermal resources. And that the
12 State should exercise its power and jurisdiction
13 through its Oil Conservation Commission and Division
14 to require that wells drilled in search of
15 development of or incident to the production of
16 geothermal resources be drilled, operated,
17 maintained, and abandoned in such a manner as to
18 safeguard life, health, property, natural resources
19 and the public welfare and to encourage maximum
20 economic recovery.

21 At Section B To these ends it is the
22 intent of the Legislature and the power and
23 jurisdiction of the Commission and the Division that
24 is given by the Geothermal Resources Conservation
25 Act shall be supplemental to the other powers and

1 jurisdiction given to the Commission and that the
2 Division by the statutes of this State.

3 And I think the Commission really
4 needs to consider the purpose of this Act, not
5 commit waste and really develop this resource, like
6 any other resource that the Commission regularly
7 hears about. That is really important.

8 Commissioner Balch discussed that he
9 thinks it is great that AmeriCulture uses the
10 geothermal resource. And maybe the permit for
11 injection, AmeriCulture may or may not use if they
12 get all the paperwork, that would be fantastic as
13 well. I looked at that permit. I didn't see a
14 proposed monitoring plan or monitoring wells.
15 Perhaps the Division should consider monitoring
16 wells there too, we have discussed monitoring wells
17 here. I think the Hidalgo Soils and Water
18 Conservation District would certainly like
19 monitoring well data there. The protection of the
20 people in that area, it is important, and we need to
21 develop the resource and protect, protect the water
22 down there.

23 OCD did review the proposed -- or the
24 applications. They developed conditions. They
25 looked at a formula and the OCD did have an

1 opportunity, they filed a prehearing statement to
2 present witnesses here, but this really wasn't
3 needed. OCD did not need to present witnesses
4 because the testimony was clear that the application
5 should be approved. The calculations were good. We
6 did not hear any evidence from AmeriCulture other
7 than, well, we don't really like the calculations.
8 We didn't hear any other formula, any other way to
9 say why the fluoride level shouldn't be set at a
10 certain level, we just didn't like -- we didn't like
11 the calculations but we didn't hear any other way
12 for the Commission to calculate a proposed level,
13 other than well, look at the data, well, it wasn't
14 higher than 15.34. We have to use a model that was
15 presented in the evidence and no one modeled.

16 The Commission has heard lots of
17 testimony over the past, five days. A lot of the
18 matters are not really relevant here. They are good
19 issues, but your job is actually quite simple. You
20 may laugh, but are the statutes being followed? Are
21 the regulations being followed? That is it. Other
22 matters that have been raised here, they are
23 administrative matters. The party can bring these
24 matters on separate applications before the
25 Commission and the Commission should review those

1 matters. But right now the Commission just needs to
2 look at the evidence before it and are these
3 applications good, are they good applications? Have
4 they met the statutory requirements? Are they
5 meeting the regulatory requirements? Are they
6 complying with the purpose of the Act and will
7 they -- and how are they safeguarding life, health
8 and property? And I think the conditions submitted
9 by the OCD are good conditions. And I don't think
10 we should continuously come back before the
11 Commission time and time begin to look at the same
12 area, the same applications and approve permits, not
13 orders, permits on these applications.

14 Thank you.

15 CHAIRMAN CATANACH: Thank you, Ms. Marks.

16 Did you want to say something?

17 MS. GAULT: Yes, please. I just want to
18 say that when AmeriCulture will go into production
19 of power, we will be informed, I hope. So, but I
20 have a statement that I wrote. It is -- I just read
21 it.

22 Thank you for granting the Hidalgo
23 Soil and Water Conservation District and interview
24 startups in this case.

25 My name is Maria Gault. I am a

1 supervisor in the district. I wasn't present at the
2 first hearing, but I've read the entire testimony.
3 Though I am not a geologist, nor a hydrologist, nor
4 a hydro geochemist like the other supervisors on my
5 board, I am charged with the protection conservation
6 and wise use of the natural resources in our
7 district as it relates to the health and safety of
8 the local population.

9 After reading and hearing the
10 testimony in this case, I have the following
11 observations, and these are layperson observations.
12 The Lightning Dock witnesses were unable to agree
13 upon a definition of closed loop, the bounding of
14 the geothermal system, why the current injection
15 wells are not functioning, or how injecting to the
16 alluvial strata is going to affect our water.

17 Perhaps the geothermal or the
18 reservoir or several reservoirs are smaller than
19 they hoped and the deep injection drilling has
20 missed it.

21 There -- and this is very troubling,
22 that none of these scientists were involved in
23 choosing the sites for the proposed shallow
24 injection wells. The scientists do agree, however,
25 that there will be chemical changes in the shallow

1 waters after injection. Some water will travel
2 literally in the alluvium and the plume might grow
3 faster. But we are told that we shouldn't worry
4 since the water is already contaminated, so the
5 message to the locals from Lightning Dock is don't
6 blame us if your water is even more toxic. Drink at
7 your own risk. If you develop mental and skeletal
8 fluorosis, we are not liable.

9 The Commission should be aware that
10 water mining in the lower animus basin has increased
11 in recent years. Ranchers and farmers on their own
12 with NRC's -- or with NRC's help are drilling wells
13 for livestock and irrigation. Much of the irrigated
14 land is now planted with pecan trees which demands a
15 lot of water. This will bring attention to the
16 relationship or lack thereof between the OCD and the
17 State engineer, each claiming regulatory power on
18 the same substance and responsibility for water
19 quality is left unclaimed.

20 Also troubling is the revelation that
21 with regard to discharge, Lightning Dock is
22 operating on a verbal agreement they've attached to
23 an expired permit. The adage that a verbal contract
24 isn't worth the paper it's printed on here applies.
25 Thus it is our position that the current agreement

1 with Lightning Dock is insufficient and will not
2 guarantee the health and safety of our people.

3 We are not opposed to experiments in
4 renewal energy, but the original agreement called
5 for the cold water to be injected into the deep
6 strata and not into the alluvium. Lightning Dock
7 should be held to the terms of that agreement as
8 much as possible.

9 Thank you.

10 CHAIRMAN CATANACH: Are there any other
11 statements at this time? Is there anything further?

12 MS. HENRIE: Mr. Chairman, we took about
13 15 of our 30 minutes, so I would like to just say,
14 if you will allow, a couple more things.

15 You heard testimony from Dr. Shomaker
16 that --

17 MR. LAKINS: Is this normal procedure?

18 MR. BRANCARD: They want to reserve
19 something --

20 MR. LAKINS: That wasn't reserved in the
21 beginning at all or talked about?

22 MR. BRANCARD: You should have informed
23 the Commission that you were going to reserve time.

24 MS. HENRIE: We were allowed 30 minutes
25 and we didn't use all of it.

1 MR. BRANCARD: I know. You should have
2 indicated to the Commission that was our plan. What
3 is the Commission's preference here?

4 MR. ROGERS: It will be brief.

5 CHAIRMAN CATANACH: You're the lawyer.

6 MR. BRANCARD: It's your procedure,
7 though.

8 (Discussion off the record.)

9 CHAIRMAN CATANACH: I think we are
10 actually done.

11 MR. BRANCARD: We do appreciate everyone
12 not only staying within time limits, but the
13 remarks.

14 CHAIRMAN CATANACH: So at this point,
15 Counselor, our normal procedure would be, do we need
16 to vote to go into executive session?

17 MR. BRANCARD: But I think -- I know I
18 have heard from folks wanting to know sort of what
19 the plan of the Commission is for the rest of the
20 day here.

21 MS. MARKS: Just one procedural matter.
22 We are supposed to take a picture of the map and I
23 was going make it an exhibit. Do you want me to do
24 that now, print it and then bring it down?

25 MR. LAKINS: I would be happy just getting

1 an e-mail.

2 MR. BRANCARD: Are you going to leave
3 these here for now?

4 MS. MARKS: Whatever pleases the
5 Commission. I don't care.

6 MR. LAKINS: Whatever you prefer to do is
7 okay by me.

8 MR. BRANCARD: You should take a picture
9 of it, that is fine. But the question is are you
10 going to leave these maps here?

11 MS. HENRIE: I was planning to, yes. They
12 have been living in my office for a while. I am
13 happy to give them to you.

14 MS. MARKS: I don't know what number it is
15 as an exhibit, but whatever it is as an exhibit.

16 MR. ROGERS: To speed your deliberations,
17 would it be helpful to have the parties e-mail to
18 you their findings of fact and conclusions so that
19 you perhaps can proceed more quickly? I am sure
20 Mr. Lakins can do that. I am sure that we can do
21 that as well, and the Division, and I think that may
22 assist you in your endeavor.

23 MR. BRANCARD: Yes. I was frankly
24 assuming you would have but...

25 MR. ROGERS: We did, I think.

1 MS. HENRIE: They were in PDF. We will
2 get you Word.

3 MR. BRANCARD: E-mail them in Word, that
4 will be helpful toward drafting a final order.

5 CHAIRMAN CATANACH: So, I believe you were
6 going to give a description of the process.

7 MR. BRANCARD: Well, it is up to the
8 Commission whether you want to go into deliberation
9 for a while and ask the parties to come back at a
10 certain point or -- I mean, I am assuming we won't
11 be done before lunch.

12 COMMISSIONER BALCH: I think we hope to
13 deliberate today, but we may end up continuing
14 deliberation on another day so I wouldn't skip
15 lunch.

16 MR. BRANCARD: But I know folks have
17 places to go and whether they want to hang around
18 here. I just thought do you want to give them sort
19 of a timeframe for folks to come back at some point
20 or we can contact you.

21 COMMISSIONER BALCH: That's probably
22 better. I think it will take a good amount of time.

23 MS. HENRIE: What our team really needs is
24 a decision, not necessarily articulated into an
25 order. I realize it takes time to do all of that,

1 but we were hoping for a decision today.

2 MR. BRANCARD: Well, the Commission's
3 normal practice is to deliberate and then when they
4 have a tentative decision, go back on the record and
5 announce that decision and then there is a process
6 for finalizing the order that comes out of that. So
7 if the Commission can arrive at a decision today,
8 they will try to have -- inform everyone when they
9 will come back into session and announce that.

10 COMMISSIONER BALCH: Even if the parties
11 are not here it will still go on to the record so...

12 CHAIRMAN CATANACH: Do you want to set a
13 time for, maybe to have another announcement to go
14 forward on where we stand? I mean, at what point we
15 are --

16 COMMISSIONER PADILLA: I would say before
17 the end of the day we have to say something one way
18 or other but...

19 MR. BRANCARD: Maybe by 3:00 we can send
20 an e-mail out just sort of letting people know when
21 the Commission will be coming back or not, and by
22 then you may be pretty tired of each other.

23 CHAIRMAN CATANACH: If we don't reach a
24 decision, I guess we will have to figure out when we
25 can meet, again.

1 MR. BRANCARD: You can just call a special
2 meeting in a few days. I mean, it is a
3 continuation, so you can just call a special meeting
4 to deliberate again because that will be the only
5 item on your agenda. So it will be really easy to
6 schedule a continued meeting to discuss this.

7 MR. LAKINS: Mr. Chairman, I have a
8 question. If the Commission, as an example, is
9 going to come back at 3:00 and give an announcement
10 of some sort is it possible to attend by phone? Is
11 there -- is that logistically possible? Is there a
12 speakerphone that is in this room type of thing?

13 MR. BRANCARD: I was intending on sending
14 out an e-mail to everybody announcing the Commission
15 will come back in within 15 minutes or something,
16 but we can do that. I think that is possible
17 Mr. Lakins.

18 MR. LAKINS: The reason I ask, sir, is I
19 am in Albuquerque. My office is in Albuquerque and
20 for me to get back to work at my office and then get
21 back up to here, well, you can see my dilemma.

22 MR. BRANCARD: We will get a phone here.
23 If you will give us your number.

24 CHAIRMAN CATANACH: You will send out an
25 e-mail to let everyone know?

1 MR. BRANCARD: Yeah, by 2:00 or 3:00,
2 okay?

3 COMMISSIONER BALCH: I make a motion that
4 we go into executive session.

5 COMMISSIONER PADILLA: I will second that
6 motion.

7 CHAIRMAN CATANACH: All in favor.

8 COMMISSIONER BALCH: Aye.

9 COMMISSIONER PADILLA: Aye.

10 CHAIRMAN CATANACH: Aye.

11 (A recess was taken.)

12 COMMISSIONER BALCH: I will make a motion
13 to go back on the record.

14 COMMISSIONER PADILLA: Second.

15 CHAIRMAN CATANACH: All in favor.

16 COMMISSIONER BALCH: Aye.

17 COMMISSIONER PADILLA: Aye.

18 CHAIRMAN CATANACH: I would just like to
19 announce that during the executive session the only
20 thing that was discussed was the case at hand. And
21 at this point I would turn it over to Mr. Brancard
22 who will announce some of the decisions that were
23 made today.

24 MR. BRANCARD: Okay. Thank you.

25 Mr. Chairman, we are here today on an application of

1 Lightning Dock Geothermal for approval of injection
2 wells 13-7, 76-7, and 15-8 under the Geothermal
3 Resources Conservation Act and the rules adopted
4 under that Act. The Commission has considered the
5 testimony, the applications, all of the exhibits
6 provided by the parties and thanks all the parties
7 for their contributions today. A lot of interesting
8 issues that have been brought up and it required a
9 fair amount of discussion by the Commission.

10 The Commission today concludes that
11 approval of the three injection wells subject to the
12 following conditions will prevent waste, protect
13 correlative rights and prevent damages to geothermal
14 resources and to usable underground water supplies.

15 The conditions: Intermediate casing
16 in the three injection wells shall go to 150 feet
17 below the base of the shallow aquifer which is
18 indicated by the bottom of the silicified sediment
19 layer and --

20 COMMISSIONER BALCH: Conglomerate I think
21 is what the geologists have been calling it.

22 MR. BRANCARD: Right. And it's indicated
23 as silicified sediment on Exhibit 14C, I believe.

24 Further conditions: The Commission
25 shall provide more specific conditions of approval

1 based on the OCD conditions that were submitted and
2 will tailor the conditions that are currently
3 provided in Exhibit A of R13675B.

4 In addition to that, these conditions
5 require a water quality sampling. Any water quality
6 data that is required to be submitted to the State
7 shall be public.

8 There was a discussion of a fourth
9 injection well by Lightning Dock Geothermal. They
10 have withdrawn the fourth application for Lightning
11 Dock Geothermal 63A-7. The Commission hereby
12 authorizes, based on the testimony that the Division
13 may administratively approve a fourth injection well
14 consistent with the specifications of this order so
15 long as such well is south of current Lightning Dock
16 Geothermal Well 55-7 inside of Section 7.

17 In addition, finally, any further
18 applications for action on geothermal injection
19 wells consistent with this order shall be subject to
20 Division approval and does not require Commission
21 approval, provided that the Commission reserves
22 jurisdiction over any approvals for wells in the
23 northeast quarter of Section 7, which based on the
24 testimony is the location of the hottest area of
25 geothermal resources indicated by Exhibit 13.

1 Mr. Chairman, that is all I have.

2 Did you have anything further?

3 CHAIRMAN CATANACH: Commissioners, did you
4 have anything that you would like to add or
5 clarification on any of that?

6 COMMISSIONER BALCH: No.

7 COMMISSIONER PADILLA: No.

8 CHAIRMAN CATANACH: Okay. We don't.

9 MR. BRANCARD: Mr. Chairman, the parties
10 have submitted draft orders and findings. I can
11 work off of those draft orders and findings and
12 prepare an order for the Commission based on what
13 you have decided today.

14 CHAIRMAN CATANACH: Mr. Brancard, do we
15 want to leave the record open so that we can review
16 the draft order to make sure that everything we want
17 is included?

18 MR. BRANCARD: Absolutely. I will prepare
19 a draft order, hopefully within the next week or so,
20 send it out to the Commissioners. You can either
21 then meet, have it approved at the next meeting or
22 if you want to direct the Chair to sign it, you
23 could do so, also.

24 CHAIRMAN CATANACH: Okay. Anything
25 further? So I guess we will just dismiss for now

1 but leave the record open pending review of the
2 draft order.

3 MR. BRANCARD: Yes.

4 CHAIRMAN CATANACH: Okay. Then this
5 hearing is adjourned.

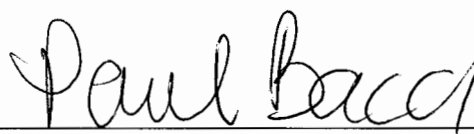
6 (Hearing adjourned at 2:37 p.m.)
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1 STATE OF NEW MEXICO)
 2) SS.
 3 COUNTY OF BERNALILLO)
 4

5 REPORTER'S CERTIFICATE
 6

7 I, PAUL BACA, New Mexico Reporter CCR No. 112,
 8 DO HEREBY CERTIFY that on Friday, October 9, 2015,
 9 the proceedings in the above-captioned matter were
 10 taken before me, that I did report in stenographic
 11 shorthand the proceedings set forth herein, and the
 12 foregoing pages are a true and correct transcription
 13 to the best of my ability and control.

14 I FURTHER CERTIFY that I am neither employed by
 15 nor related to nor contracted with (unless excepted
 16 by the rules) any of the parties or attorneys in
 17 this case, and that I have no interest whatsoever in
 18 the final disposition of this case in any court.

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