

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

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

7 APPLICATION OF FRONTIER FIELD SERVICES, LLC
8 FOR AUTHORIZATION TO INJECT.
9 LEA COUNTY, NEW MEXICO

Case No. 15193

10
11 September 11, 2015
12 9:00 o'clock
13 1220 S. St. Francis Drive
14 Santa Fe, New Mexico

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18 COMMISSION CHAIRMAN: David Catanach
19 COMMISSION MEMBERS: Bob Balch, Patrick Padilla
20 COMMISSION COUNSEL: Bill Brancard, Esq.

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1 (Note: In session at 9:00.)

2 CHAIRMAN CATANACH: Let's call the
3 commission meeting back to order this morning.
4 Today's date is 9/11/2015 and this is a continuation
5 of the docket that started yesterday.

6 At this time we're going to call Case
7 15193, which is the application of Frontier Field
8 Services, LLC for Authorization to Inject. Call for
9 appearances in this case.

10 MR. HALL: Mr. Chairman, Scott Hall,
11 Montgomery & Andrews law firm in Santa Fe appearing
12 for the applicant. I have two witnesses this
13 morning.

14 MR. WADE: Gabriel Wade on behalf of the
15 Oil Conservation Division. I'm here with Phil
16 Goetze, the geologist for the OCD, who is available
17 for questions if the commission has any.

18 CHAIRMAN CATANACH: Okay. Do you want to
19 make any opening statements?

20 MR. HALL: I suggest these witnesses have
21 been previously sworn and their credentials
22 accepted, but not before this particular commission.
23 Perhaps Commissioner Balch sat through those cases.
24 What's your pleasure? I will requalify them.

25 CHAIRMAN CATANACH: We need to swear them

1 in and if you could briefly describe their
2 qualifications.

3 (Note: Witnesses sworn by court reporter.)

4 MR. HALL: Mr. Chairman, commissioners,
5 this case, I promise, will be quick.

6 We are here to ask for approval to some
7 changes, very minor changes to the injection
8 parameters for these two previously approved AGI
9 wells. The reason we are coming to hearing to do it
10 is because there are specific parameters set out in
11 the previous orders and the division did not feel it
12 had the authority to change those parameters
13 administratively because they were in a commission
14 order. So we are back before the commission to do
15 that. We will tell you about those parameters
16 specifically.

17 We are also asking that the commission
18 delegate to the division sufficient authority which
19 will allow them to change other parameters, make
20 other modifications to the injection authorization
21 as needed in the future administratively without
22 having to convene a commission hearing to do it.

23 MR. WADE: And if I may, the OCD is in
24 support of this application and won't be making any
25 presentations. We will have Mr. Goetze available if

1 you have questions.

2 CHAIRMAN CATANACH: Go ahead.

3 MR. HALL: Because two of you have not sat
4 on previous cases we have Mr. Coy Bryant here after
5 I get him identified and qualified to provide you
6 with a brief overview of acid gas injection well
7 operation.

8 COY BRYANT

9 after having been first duly sworn under oath,
10 was questioned and testified as follows:

11 DIRECT EXAMINATION

12 BY MR. HALL

13 Q. For the record, please state your name.

14 A. Coy Bryant.

15 Q. Where do you live and by whom are you
16 employed?

17 A. I live in Durango, Colorado. I'm employed
18 by AKA Energy Group.

19 Q. In what capacity?

20 A. I'm the director of operations.

21 Q. Would you please give the commissioners a
22 brief summary of your educational background and
23 experience?

24 A. Sure. I have a bachelor's of science in
25 civil engineering from Texas Tech University and a

1 master's of science in nuclear engineering from the
2 University of Texas at Austin. I have worked for
3 Exxon Mobile and Kinder Morgan, and then for the
4 past year I worked for AKA Energy Group..

5 Q. You previously had your credentials
6 established as a matter of record in a previous
7 case?

8 A. Correct.

9 MR. HALL: We again offer Mr. Bryant as a
10 qualified engineering witness.

11 CHAIRMAN CATANACH: Mr. Bryant is so
12 qualified.

13 Q. If you would, Mr. Bryant, explain to the
14 commission what Frontier is seeking by its
15 application.

16 A. We are seeking an increase in the maximum
17 allowable injection volume on a daily rate in either
18 or both of our acid gas injection wells from two
19 million cubic feet a day to three-and-a-half million
20 cubic feet a day.

21 Q. Where are the wells situated?

22 A. They are just adjacent to our Malijamar
23 gas plant, which is very near Malijamar, New Mexico.

24 Q. Would you provide the commissioners with a
25 brief overview of acid gas injection operations,

1 what they do and why we need them?

2 A. Sure. So when you have sour gas, sour
3 natural gas brought into a gas plant, in part of the
4 treating and processing you remove H₂S and CO₂ from
5 the natural gas through an amine treatment process.
6 The effluent of that is a mixture of carbon dioxide
7 and hydrogen sulfide. It's pulled together and sent
8 to compression facilities, acid gas compression
9 facilities, where we inject it into one of these two
10 acid gas injection wells for disposal.

11 Q. All right. And the wells are, if we look
12 at the exhibits, the Malijamar AGI well No. 1 and
13 the Malijamar AGI well No. 2, and if the
14 commissioners would refer to Exhibits 1 and 2 they
15 could find Orders No. R 13443A and R 13443B
16 authorizing injection in each of those wells; is
17 that correct?

18 A. Correct.

19 Q. What formation are they injected into?

20 A. Into the Wolfgang.

21 Q. Briefly, what are the injection parameters
22 currently approved under the two orders?

23 A. We have a combined injection volume on a
24 daily rate of two million cubic feet per day. It
25 can go into one wells or both wells split.

1 Q. Are both wells in operation?

2 A. No. The AGI No. 1 is in operation. It's
3 been in operation since about December of 2013. AGI
4 No. 2 was approved by the commission last November,
5 November of '14, and then recently approved by the
6 BLM in June of this year so it has yet to be
7 drilled.

8 Q. Explain to the commissioners what is the
9 cause of the need to request the increase in the
10 injection rate?

11 A. Sure. The concentrations of H₂S and CO₂
12 in our inlet gas stream has increased, which results
13 in a larger volume of treated acid gas that we need
14 to dispose of.

15 In addition, given the current market
16 conditions and the decreased drilling activity in
17 the area in which we operate, we are planning to
18 consolidate two facilities in Southeast New Mexico
19 on a temporary basis until conditions pick up and
20 drilling activity picks up. So we're going to send
21 raw gas from one facility to the other one. They
22 share a common gathering system so we are going to
23 increase the total amount of volume treated at the
24 Malijamar gas plant, which is the other reason for
25 the request.

1 Q. Industry refers to treated acid gas as
2 tag; is that correct?

3 A. Right.

4 Q. What did the initial concentrations of tag
5 consist of percentage-wise?

6 A. Around 18 to 20 percent of H₂S and the
7 remainder being carbon dioxide.

8 Q. What do you expect those concentrations
9 will be changing to?

10 A. We are looking upwards of 30 percent of
11 H₂S and 70 percent carbon dioxide.

12 Q. With the increased injection rate if it is
13 approved, do you expect the Malijamar plant will be
14 able to treat the full volume of gas delivered to
15 you by producers?

16 A. Yes, we do.

17 Q. And avoid curtailment of services were you
18 to continue operating under the existing rate?

19 A. Yes.

20 Q. Are the C108 applications for the No. 1
21 and 2 wells already contained in the commission's
22 files in this matter?

23 A. To the best of my knowledge, yes.

24 MR. HALL: For your information,
25 Mr. Chairman, should there be any question about the

1 C108s, I have copies for the No. 2 well. Largely we
2 have done it for the No. 1 so they are available if
3 you need to see those.

4 Q. In view of the C108s that have already
5 been filed, will the design configurations of the
6 two wells remain the same as previously approved?

7 A. Yes, but we may change the casing design
8 for the AGI No. 2 to give us -- I guess to help us
9 avoid possible issues during drilling that we saw
10 during the AGI No. 1 in some of the shallower
11 formations, so it would be an improvement to the
12 casing design.

13 Q. Add additional casing?

14 A. Right.

15 Q. Do all of the other relevant circumstances
16 concerning the two AGI wells remain unchanged since
17 the previous approval?

18 A. Correct.

19 Q. In your opinion, Mr. Bryant, can this
20 injection project be operated at the increased daily
21 injection rate so the public health and safety and
22 the environment will be protected?

23 A. Yes.

24 MR. HALL: That concludes my direct of the
25 witness, Mr. Chairman.

1 MR. WADE: If I may have a question?

2 CROSS-EXAMINATION

3 BY MR. WADE

4 Q. You mentioned that you might request a
5 change in the casing?

6 A. Right.

7 Q. How would you make that request?

8 A. Through a sundry notice to the BLM and
9 then whatever requirements are required with the
10 OCD.

11 Q. Are you asking that that request be
12 handled administratively through the OCD at this
13 time?

14 A. Yes.

15 Q. Thank you.

16 CHAIRMAN CATANACH: Mr. Balch?

17 MR. BALCH: Good morning, Mr. Bryant.

18 THE WITNESS: Good morning.

19 MR. BALCH: Continuing Mr. Wade's line of
20 questioning, this is an improvement? This is
21 greater than or equivalent protection?

22 THE WITNESS: Correct.

23 MR. BALCH: And currently, the way the
24 order is written, would you have to come back to us
25 for that change even though it's an improvement?

1 THE WITNESS: I don't know that answer. I
2 guess as far as --

3 MR. BALCH: Looks like we can ask Mr. --

4 THE WITNESS: Maybe that's a question
5 better answered by Mr. Gutierrez.

6 MR. BALCH: What's the approximate
7 percentage of tag in the total supply stream?

8 THE WITNESS: Right now it's probably 2
9 percent. Close to it.

10 MR. BALCH: Is that number going to go up
11 as well?

12 THE WITNESS: On a percentage basis, if it
13 does, we expect most of it to come with increased
14 CO2, but we are -- right now with the current
15 compositions it would go up maybe slightly with what
16 we are expecting.

17 MR. BALCH: Right now you get 2 MMFC a
18 day?

19 THE WITNESS: Correct.

20 MR. BALCH: How much is currently going
21 into the AGI No. 1?

22 THE WITNESS: Between 1.4 and 1.8 million
23 cubic feet a day depending on which wells are on,
24 which compressor stations are running.

25 MR. BALCH: So are you looking for an

1 increase in both wells, either well, a combination
2 of the wells?

3 THE WITNESS: The combination. We are
4 asking for the same authorization as far as
5 injection, but just an increased volume. So whether
6 they would go in one well or split between both.

7 MR. BALCH: What's the new number you are
8 asking for?

9 THE WITNESS: Three-and-a-half million
10 cubic feet.

11 MR. BALCH: So we could be bringing
12 three-and-a-half million into AGI No. 1 next week or
13 whenever the order is signed?

14 THE WITNESS: Correct, but we don't have
15 that much treated acid gas to inject.

16 MR. BALCH: Do you think you will exceed
17 the maximum injection pressure at three-and-a-half?

18 THE WITNESS: No, sir.

19 MR. BALCH: And you wish to keep the
20 maximum injection pressure in place?

21 THE WITNESS: Yes, sir.

22 MR. BALCH: Thank you. No more
23 questions.

24 MR. PADILLA: I just have a couple
25 questions. Mr. Bryant, you said that you would be

1 bypassing one of yours to consolidate during the
2 downturn essentially?

3 THE WITNESS: Correct.

4 MR. PADILLA: Are you also bypassing
5 another AGI well to do that? Or does all the tag go
6 to this well?

7 THE WITNESS: No, sir. All the tag will
8 go to this well. Currently we have a sulfur
9 recovery unit at the plant that we're going to be
10 temporarily shutting down, so that operation will
11 cease temporarily.

12 MR. PADILLA: That's really all I have.
13 Thank you.

14 CHAIRMAN CATANACH: So you are currently
15 injecting 1.4 to 1.8?

16 THE WITNESS: Yes, sir.

17 CHAIRMAN CATANACH: And when you start
18 channeling the gas from the other plant is that rate
19 going to go up?

20 THE WITNESS: Yes, sir. We expect it to
21 go up between 2.2 to 2.4 million cubic feet a day.

22 CHAIRMAN CATANACH: So the additional
23 capacity would be allocated for what purpose?

24 THE WITNESS: It would allow us the
25 ability to bring in more gas. When the market

1 conditions turn around and we can bring in
2 additional gas into the plant, that would give us
3 that flexibility. In addition, if we see further
4 increases in CO2 and H2S compositions in our inlet
5 gas, that would allow us that flexibility also.

6 CHAIRMAN CATANACH: You stated that the
7 concentration is going up. Do you know why that
8 might be true?

9 THE WITNESS: I don't. Maybe
10 Mr. Gutierrez as a geologist can better explain
11 that, but we just see it in our gas analyses that we
12 take on a regular basis.

13 CHAIRMAN CATANACH: I know in the previous
14 two orders that were issued, I read them this
15 morning and there was something to do with an actual
16 radius or a time period for these -- a life
17 expectancy for these wells or an expiration for
18 injection. Is this going to, due to the increased
19 capacity, is that going to change that? Does that
20 reduce --

21 THE WITNESS: I believe Mr. Gutierrez will
22 cover that in his portion of the testimony.

23 CHAIRMAN CATANACH: Okay. Then I have no
24 further questions.

25 MR. HALL: At this time we call

1 Mr. Gutierrez to the stand.

2 ALBERTO A. GUTIERREZ

3 after having been first duly sworn under oath,

4 was questioned and testified as follows:

5 DIRECT EXAMINATION

6 BY MR. HALL

7 Q. State your name, please.

8 A. Alberto A. Gutierrez.

9 Q. And where do you live and by whom are you
10 employed?

11 A. I live in Albuquerque and I'm employed by
12 Geolex, Incorporated.

13 Q. In what capacity?

14 A. I'm the president of the company and I'm a
15 geologist and hydrogeologist.

16 Q. Would you provide the commissioners with a
17 brief overview of your educational background and
18 work experience?

19 A. Yes. I have a bachelor's and master's
20 degree in geology, bachelor's from the University of
21 Maryland, master's from the University of New
22 Mexico. I have been practicing as a professional
23 geologist since approximately 1980 and I have been
24 working on acid gas injection projects and, in fact,
25 all but one of the acid gas injection projects in

1 this state we have permitted and overseen the
2 installation of, about 15 of them now. That's my
3 experience.

4 Q. In the prior cases you provided testimony
5 and in those cases were your credentials accepted as
6 a matter of record?

7 A. Yes, they were.

8 MR. HALL: We tender Mr. Gutierrez as a
9 qualified expert petroleum geologist.

10 CHAIRMAN CATANACH: He is so qualified.

11 Q. If you would, Mr. Gutierrez, would you
12 provide the commissioners with an overview of the
13 historical background of the injection permits in
14 the permitted injection parameters of the existing
15 orders?

16 A. Certainly. As Mr. Bryant mentioned, just
17 to give a very brief history -- and I've got a slide
18 that covers that and we can -- let me just go to
19 that slide first.

20 Q. For the record, we are looking at Exhibit
21 3 now?

22 A. That's correct. I'm trying to avoid going
23 through a lot of stuff that the commission has
24 already heard before, but I'm happy to go into any
25 level of detail that you would wish.

1 But initially, basically the Malijamar
2 facility installed or requested permission from the
3 OCD for the installation of an acid gas injection
4 well to provide a mechanism for disposal of the acid
5 gas being generated at the Malijamar plant as a
6 changeover from the previous way in which it was
7 being handled, which was under a historical flaring
8 maximum allowed.

9 And we came in in 2010 and presented an
10 application for the drilling and completion of the
11 AGI No. 1, which was the first acid gas injection
12 well at the Malijamar plant.

13 During that C108 process and the hearing
14 held by the commission, which was an unopposed
15 hearing, we provided a model of the extent to which
16 the acid gas injection plume would occupy the
17 reservoir at the rates which were at the present, at
18 that time, the rates that were being experienced by
19 the facility.

20 The well was drilled in 2011 and '12 and
21 then, as Mr. Bryant said, it was put into service
22 after the surface compression facilities, et cetera,
23 were completed. The formation in the particular
24 area where we drilled it, was slightly less
25 permeable than we anticipated, and we ended up doing

1 a step rate test and getting the pressure slightly
2 increased from about 3000 PSI to 3200 PSI as a
3 maximum allowable injection pressure.

4 Now, they have been injecting it well
5 under that pressure, but we saw that there might be
6 a possibility as the volumes increased that we would
7 get close to that MAOP and so we did a step rate
8 test and that was approved after a review by the
9 OCD.

10 That was allowed in the existing order as
11 it has been in all of the AGI orders that we worked
12 on. There's a normal process, administrative
13 process for doing that.

14 The next historical thing that happened is
15 after the first well was drilled, Frontier felt, and
16 rightfully so, it's been a trend throughout the
17 entire industry, that facilities that use acid gas
18 injection wells for disposal tend to want to have a
19 second well in the event that -- because it's a
20 flow-through process. You are basically taking the
21 inlet gas, processing it through the plant and then
22 the tag that's left over you're injecting. It's a
23 realtime process.

24 So the bottom line is if you have a
25 problem with your well, you have to shut down your

1 plant and shut down all of the producers.

2 So there's a real incentive, even though
3 these wells are very expensive, to put in a second
4 well with one of these systems just as a redundancy.
5 Just like you would have a redundant compressor or
6 something at the facility. Hence, that was the
7 request for the AGI No. 2, which was also permitted
8 by the commission and unopposed by any of the -- in
9 fact, the producers in the area were very supportive
10 of it, because it provided a greater degree of
11 reliability to their ability to sell their gas and
12 to have their facility process it without
13 interruption.

14 That was approved. And the well --
15 because these wells are on federal land, they not
16 only require the approval from the commission for
17 injection but then they also require the BLM's
18 approval through an APD process. It has been the
19 practice of the Carlsbad district of the BLM not to
20 really review these applications until after the
21 commission has already approved the injection.

22 So they began their review after that,
23 November of last year, and they have been quite
24 backed up in that office. So it took until June to
25 get this approved.

1 Now, one of the differences, and this goes
2 to the point that Commissioner Balch made earlier
3 with respect to the casing design. The BLM is much
4 more specific in its requirements for casing design
5 than what is typically incorporated in the order.
6 The order that the commission issues typically
7 relies on the information that was presented in the
8 C108 and the design that was presented in the C108,
9 and then it approves that but it doesn't really lay
10 out the specific construction details except in a
11 general sense like that it has a subsurface safety
12 valve, that it has a compatible non-corrosive type
13 of materials and these types of things.

14 The BLM is much more specific when they
15 issue an APD about exactly what the cementing
16 procedure will be, the mud weights and all of those
17 aspects.

18 Hence, when the APD is issued, it's
19 basically issued consistent with what has been
20 proposed in the C108 but it has a greater level of
21 detail.

22 Now, bottom line, that's all approved. We
23 have an approved injection volume of two million a
24 day of tag at a maximum injection pressure right now
25 in the AGI No. 1 of 3200 PSI. We requested the same

1 injection pressure in the AGI No. 2, but it was the
2 OCD's recommendation and the commission's decision
3 to only approve the No. 2 for what would have been
4 the normally calculated injection pressure, which
5 was 3028 PSI instead of 3200, and there was a
6 statement by the OCD at the time that if, in the
7 second well, we find the similar issues we had with
8 the first well, we could certainly do a step rate
9 test, which is required as part of our installation
10 and testing process anyway, and seek an additional
11 pressure increase if we needed it for the second
12 one. Even though we are going in the exact same
13 reservoir, they didn't really want to automatically
14 carry over the injection pressure from the No. 1.

15 We don't have a problem with that because,
16 in fact, the way we located the No. 2 well when we
17 drilled the No. 1, and then there's been some
18 drilling activity about two-and-a-half miles away by
19 Cimarex that allowed us to have some additional
20 information that allowed us to sight the bottom hole
21 location for the No. 2 well in what we believe is
22 the part of the reservoir that has a little bit
23 better permeability. So, in fact, we believe we
24 will be able to inject it at an even lower pressure
25 than we are injecting in the No. 1 right now into

1 the No. 2.

2 That's the history of where we are today,
3 and what has happened, as Mr. Bryant explained, is
4 there are two fundamental reasons. One is, as he
5 mentioned, the acid gas from the -- or the inlet gas
6 that went to the Empire Abo plant that they have is
7 now going to be -- we are wanting to be able to
8 shunt that gas to the Malijamar plant and
9 temporarily mothball the temporary Abo because of
10 the conditions that Mr. Bryant mentioned.

11 And the gas from those fields has a higher
12 H₂S concentration than the gas that is being
13 supplied currently to the Malijamar facility and a
14 higher CO₂ concentration. Consequently, that's
15 going to affect the volume of tag produced.

16 Like Mr. Bryant mentioned, they are well
17 under the two million limit now, but we anticipate
18 when they move the gas over that we will push that
19 two million limit to maybe 2.3, 2.4 million.

20 On top of that, one of the things that we
21 have seen over the years as these fields that are
22 supplying the gas to Malijamar and to the Empire Abo
23 facility is that over time that the CO₂
24 concentrations in particular tend to increase in
25 these wells. So what Frontier's concern is, and

1 given that we had to come back to the commission,
2 because even though the OCD is supportive of the
3 application and they reviewed the technical aspects,
4 we have administratively not an avenue to get that
5 approved. We want to have enough leeway to be able
6 to increase the amount of tag primarily from the CO2
7 perspective that adds additional volume to what has
8 to be disposed of there.

9 So that is the rationale for the current
10 request. We submitted this request to the division
11 back approximately in June, I believe, if I recall
12 correctly. And they reviewed it and they determined
13 from a legal perspective that while they were
14 supportive of the approach -- and we'll go through
15 the details in just a moment that we did -- the
16 actual approval needed to come to the commission
17 because there wasn't the flexibility in the order
18 for them to deal with that maximum injection volume
19 because it was a part of the order.

20 So what we did, in order to, one, figure
21 out for ourselves is there going to be a problem, is
22 we embarked on what is summarized in this
23 presentation of an analysis of the data that what
24 would happen if we increased the volume to
25 three-and-a-half million.

1 So the first thing we wanted to do is to
2 revise our model from two million to
3 three-and-a-half million and determine are there any
4 additional wells that are encompassed by the larger
5 plume size. And as Mr. Chairman and commissioners,
6 as you may or may not be aware of, what has been the
7 practice in the presentation of these permit
8 applications to the commission is that we actually,
9 as a safety factor, when we do this analysis of what
10 the wells are that are going to be affected, we
11 actually double the volume from what is anticipated
12 and then look at that larger area just to have a
13 safety margin and what wells may fall within that.

14 So when we did that for the initial
15 application, what we found is that basically with
16 the two million cubic feet of tag you basically --
17 and I will switch through and go to this slide here
18 which summarizes it well. This is Slide 12 on the
19 presentation.

20 The original application, we had an
21 approved volume of two million, and that orange
22 circle, if you will, is the area that would be
23 affected by the original anticipated volume of two
24 million a day.

25 Now, when we increased the volume to

1 three-and-a-half million a day, it would go to the
2 purple line that is the solid purple line. That's
3 what we anticipate after 30 years would be the
4 extent of that plume. And the dashed purple line is
5 the 200 percent safety factor for the new requested
6 volume of three-and-a-half million. The solid red
7 line is the original area of review that was done
8 for the first well.

9 As you can see, even the 200 percent
10 safety factor line comes under inside that
11 additional area. So in effect, we are not
12 covering -- the area of review did not really have
13 to be expanded because even with this additional
14 volume we are well within the area that was
15 previously reviewed.

16 So the next thing that we did is go
17 through and say are there any new wells that have
18 been installed in the area since the previous
19 approval, and the answer simply is no, there are
20 not. There remains really only a single plugged
21 well and our currently approved and operating AGI
22 No. 1 that penetrate the injection zone.

23 All of these other wells that you see
24 there shown in black are all shallow wells, much
25 shallower. We are injecting at a depth of

1 approximately 10,000 feet. The majority of those
2 wells are completed at depths of about 3 to 4 or
3 5,000 feet with the exception of a couple Cisco
4 Canyon wells. They don't penetrate our injection
5 zone within the area of review.

6 Q. Will you identify the plugged well?

7 A. Yes. This well is the Queen Bee 036.
8 It's located right here. And that well was plugged
9 and properly plugged and was examined in detail by
10 the division and the commission and ourselves, and
11 we were all convinced that it is adequately plugged
12 through the injection zone and has not been a
13 problem at all.

14 So what we found, if you will notice over
15 here to the right shown in the red, is the location
16 of the AGI No. 1, which is a vertical well. And
17 this is the bottom hole location of the AGI No. 2.
18 We are wanting to put it sufficient distance away
19 from the bottom hole location of the AGI No. 1, and
20 what we have found is that the permeability of this
21 zone in the Wolf camp tends to increase in this
22 direction towards the southwest and the west. So
23 consequently, that is the rationale for this new
24 bottom hole location for the AGI No. 2.

25 And the Cimarex well that I was talking

1 about that was drilled into that area is is a salt
2 water disposal well that is located down in about
3 this area. And we have exchanged a lot of
4 information with Cimarex and they have been
5 supportive of our application, we were supportive of
6 theirs, and we feel very confident that the two
7 wells will not cause any kind of a problem and we
8 haven't seen any rise in the injection pressure or
9 anything else in the zone as we have been operating.

10 So that was the process that we went
11 through to do the analysis, and we presented all of
12 that data to the division and they concurred with
13 our analysis. So this is the approved, if you will,
14 design of the injection well.

15 Q. You're looking at Slide 13?

16 A. That is correct. The AGI No. 2. I just
17 wanted to briefly address that question that came up
18 relative to the potential casing design change. Two
19 reasons. One of the things we encountered, we had a
20 fair amount of difficulty drilling the AGI No. 1 in
21 the shallow zone because there's a lot of wells
22 operating in the immediate vicinity in the shallow
23 zone and we had a lot of sticking problems with the
24 drill bit, et cetera, in those zones that caused
25 some significant delays and cost issues with the No.

1 1.

2 What we have been looking at is the idea
3 of extending the surface casing deeper and the
4 intermediate casing deeper and possibly even adding
5 a string of casing to further isolate those zones
6 where we had some drilling problems during the
7 drilling process.

8 So what we are thinking is that we may
9 extend this intermediate slightly and then also run
10 another string of casing inside the intermediate,
11 which means we basically have to raise the size of
12 the casing as we telescope up, so it would be a
13 slightly larger diameter surface casing, larger
14 diameter intermediate to allow for a larger string
15 of casing to be put in to further isolate the zones
16 where we had difficulty.

17 So in effect, the well design doesn't
18 change other than we are adding essentially another
19 layer of protection, and it's really not so much for
20 the AGI -- needed for the acid gas injection well
21 itself but rather for the drilling process.

22 Q. Let me ask you about that. Would you
23 address Mr. Wade's question about approving this
24 modification via the APD process?

25 A. Certainly. What we are doing is working

1 with the BLM right now to define what that casing
2 change would be, and then we would submit the same
3 thing to the division with a C103 for the division
4 to review it.

5 Even though automatically when the -- the
6 way the feds work this is when they approve it, they
7 send it to the State anyway, but we would
8 simultaneously submit it to the district office, and
9 we have made them aware of that and they don't have
10 a problem. In the end it will be a more protected
11 well.

12 Q. It's on a sundry?

13 A. It would be on a C103 for the State or on
14 a sundry for the BLM.

15 So let me just mention that the other
16 thing that is, of course, of great concern is
17 groundwater. There is only one water well within
18 the area of review. Its total depth is 158 feet and
19 we're going to have 550 feet of conductor casing
20 cemented to the surfacing just like we do in the No.
21 1, and we're going to have surface casing to at
22 least 4200 feet, we feel maybe a little deeper now,
23 and yet another string of intermediate casing in the
24 well if we modify the design as we anticipate.

25 Basically to summarize kind of the key

1 elements of our proposed rate increase, we have done
2 the investigation and there are no additional wells
3 that are located in the increased area of the
4 reservoir that would be affected by the rate
5 increase. The AGI project obviously has some real
6 substantial benefits in the sequestration of CO2
7 which will otherwise be released to the atmosphere
8 and to reduce waste and air emissions by eliminating
9 flaring and also the small amount of sulfur dioxide
10 emissions that occur from the SRU that is being
11 mothballed. And all of the nearby oil and gas wells
12 and water wells are protected by the well design and
13 the geologic factors.

14 By the way, one thing I haven't gone into,
15 we did a lot of work in the original application.
16 We have 3D seismic which has allowed us to get a
17 really good handle of what the reservoir is in this
18 area. So basically the summary is that there's no
19 substantive change in the area of impact. The new
20 area is 207 acres versus the original 139 acres with
21 a radius that is an increase from .26 miles,
22 essentially about a quarter mile to about a third of
23 a mile.

24 Again, even with the safety factor this
25 area encompasses a radius of only .45 miles, which

1 is within the original area of review for the well.
2 It doesn't encompass any additional wells that
3 penetrate the injection zone other than the one that
4 I mentioned and our own well. And we are not
5 requesting any change in the MAOP.

6 As I mentioned, the AGI No. 1 has a
7 currently approved MAOP of 3200, the AGI No. 2 of
8 3028, and we don't anticipate any need for that.

9 One of the things the division requested
10 and we did is we provided specific notice to every
11 one of the people who were noticed the first time
12 around and the second time around with the -- people
13 noticed with the first well, people noticed with the
14 second well, and we provided that specific notice.
15 In addition, there was a notice published in the
16 paper and we have had nothing but support for the
17 project.

18 Q. Did you update your title check in
19 connection with notice provided for this hearing?

20 A. We did. We went through and made sure not
21 only were the operators renoticed but all the
22 surface owners were renoticed as well and we made
23 sure there were no changes in the surface ownership
24 or additional changes in the -- or any changes in
25 operators of the existing wells or any new

1 operators. So we went through that. We had a
2 landman to do that for us.

3 Q. So you originally brought this new
4 application to the division administratively?

5 A. That is correct.

6 Q. And you provided notice in connection with
7 that administrative application?

8 A. No, we did not. That's not correct. What
9 we did is after it was determined by the division
10 that it would have to go to a hearing for the
11 commission, they requested that we provide that
12 notice and we did that at that time. Yes, sir.

13 Q. No objections were received?

14 A. That's correct. No, there were no
15 objections received.

16 I know I skipped through some of the
17 slides and they are certainly there. We can go
18 through them in whatever --

19 Q. For the record, let me indicate that your
20 summary recently discussed is found on Page 16 of
21 Exhibit 3?

22 A. That is correct. That is correct. This
23 is basically the substance of our request.

24 Q. The B order requires you to update your
25 H2S plan. What is the status of that?

1 A. That's an excellent question. You know,
2 independent from the authority to inject given by
3 the C108, these wells -- and, in fact, the plant
4 itself as handling sour gas -- requires a Rule 11
5 H2S contingent emergency plan to be approved by the
6 division. When the second well was approved, it was
7 determined that by the division, even though at the
8 time we weren't changing the volume or anything
9 else, that that H2S plan would have to be updated
10 and modified to include the second well, even though
11 surface locations are about 450 feet apart.

12 We determined, even before the drilling of
13 the second well, that we needed to revise that Rule
14 11 plan because what we were seeing was an increase
15 in the volume of H2S that was a result of increasing
16 inlet concentrations. So we initiated the process
17 to modify that Rule 11 plan. That modified plan has
18 been turned into the agency and has been reviewed by
19 Mr. Chavez in the environmental bureau and he has
20 returned us some comments and we are in the process
21 of addressing those and we fully anticipate that
22 that will be approved, I believe, within the next
23 two weeks. We are very close. We are just tweaking
24 a few changes in the plan that he wanted.

25 That plan will incorporate not only the

1 additional H2S that we're encountering, but it will
2 also include the second well so that hopefully we
3 will be able to just modify that plan one time.

4 Q. Anything further with respect to the
5 technical aspects of the application?

6 A. I can't think of anything.

7 Q. Would you elaborate on the request in the
8 application to have the commission delegate
9 authority to the division to allow them to make
10 administrative approvals for modifications to the
11 injection authorizations?

12 A. Yes, sir. When I submitted this to Mr.
13 Goetze on an administrative basis and we talked
14 about the technical merits and he discussed the
15 issue with Mr. Wade, there was a suggestion from the
16 division that since we're making this request that
17 we also make a more generic request that if there
18 are other small changes that are required like maybe
19 this design change or whatever, even though the
20 design is not very specified in the order itself,
21 but those kinds of changes, that it be at the
22 division's discretion to determine -- the division
23 director's discretion to determine whether or not a
24 request for some kind of minor change would require
25 coming back to the commission or whether it could be

1 approved administratively.

2 And so Mr. Goetze suggested that we might
3 add some language to our request to that effect that
4 would provide the flexibility so we wouldn't have to
5 take up the commission's time for something like
6 this that was not a controversial change.

7 Q. We are talking about administrative reviews
8 and approvals provided under Rule 26 for other types
9 of injection operations?

10 A. That's correct.

11 Q. Would the division retain the discretion
12 to refer something back to the commission if it
13 deemed it appropriate?

14 A. Absolutely. Absolutely.

15 Q. Mr. Gutierrez, let me ask you, was Exhibit
16 3, your PowerPoint slides, prepared by you?

17 A. Yes, they were.

18 MR. HALL: Nothing further on direct for
19 the witness. I move the admission of his Exhibit
20 No. 3, also Exhibit No. 4, which is the notice
21 affidavit for this case.

22 We also provided the commission with a
23 draft order. I will send that electronically to
24 Mr. Brancard. There's a typo on Page 5. Paragraph
25 6 cites to Rule 16. It should have cited to rule

1 26. Otherwise, I think it's good to go.

2 CHAIRMAN CATANACH: I'm not sure we
3 admitted the prior exhibits.

4 MR. HALL: The other two, I think you can
5 take the administrative notice of the orders. They
6 need not be exhibits.

7 CHAIRMAN CATANACH: So Exhibit 3 through
8 5.

9 MR. HALL: Three through 4.

10 CHAIRMAN CATANACH: Three and 4 will be
11 admitted as evidence.

12 MR. WADE: No questions.

13 MR. BALCH: I always have questions for
14 Mr. Gutierrez. First, I'm going to ask you again if
15 you are going to put your 3D seismic in the public
16 domain but I know your answer so don't worry about
17 it.

18 There is a Cimarex disposal well. That's
19 a new twist. And you indicate that your analysis of
20 your data indicates that your permeability trends go
21 west and then -- west southwest?

22 THE WITNESS: Yes, sir.

23 MR. BALCH: Towards the Cimarex well?

24 THE WITNESS: Yes.

25 MR. BALCH: And the Cimarex well is in the

1 Wolf?

2 THE WITNESS: It is.

3 MR. BALCH: What's the approximate
4 disposal value now and planned?

5 THE WITNESS: I believe they are disposing
6 of approximately 2600 barrels of wastewater a day.

7 MR. BALCH: That's two miles away?

8 THE WITNESS: Yes.

9 MR. BALCH: What's the distance?

10 THE WITNESS: It's approximately two miles
11 away, yes.

12 MR. BALCH: And you said that there's no
13 observable change in pressure in your AGI No. 1 --

14 THE WITNESS: That's right.

15 -- MR. BALCH: As a result of this?

16 THE WITNESS: That's correct. And in
17 theirs as well. Their well has been injecting for
18 about two years now.

19 MR. BALCH: Two years?

20 THE WITNESS: Yeah. One of the things I
21 didn't mention but I will mention it because it is
22 relevant to this, as you may remember, Commissioner
23 Balch, part of the design of this AGI No. 2 is to --
24 you know, we have kind of improved our design to
25 include bottom hole pressure and temperature

1 monitoring, and that is going to be put into the No.
2 2 which will allow us to, you know, be able to
3 clearly see what we are experiencing in that
4 reservoir.

5 MR. BALCH: I think that's a very valuable
6 technology. That was my only question.

7 MR. PADILLA: What average injection
8 pressure are you seeing now?

9 THE WITNESS: I believe about 2200, about
10 2200. So we are well under our MAOP.

11 MR. PADILLA: And did you say that your
12 APD with BLM has been approved?

13 THE WITNESS: Yes, sir. It was approved
14 in June.

15 MR. PADILLA: You just need a sundry for
16 the change and you are ready to go?

17 THE WITNESS: That's correct.

18 MR. PADILLA: You testified that this well
19 could be classified as a redundancy option?

20 THE WITNESS: Yes, sir.

21 MR. BALCH: Do you plan on using one or
22 the other by itself or do you plan on running both
23 at the same time?

24 THE WITNESS: That's a good question. I
25 mean, the intent really is to probably run both

1 wells at the same time. We are not asking for, you
2 know, this volume per well. It's an aggregate
3 volume. But the ability will be -- we feel very
4 confident based on what we have seen and what the
5 injection history has been that we could dispose of
6 this entire volume into either one or the other well
7 and still be under the MAOP.

8 However, from an operating perspective, it
9 is probably -- one of the things we are seeing at
10 other facilities is it's probably better to keep
11 some flow going into both wells than to have one
12 completely shut in and not operating at all.

13 So that's likely going to be the operating
14 scenario. But the advantage is that if, let's say,
15 that situation occurs, you have a tubing leak in one
16 well and you have to completely work it over, that
17 you can shift all of your production right to the
18 other well and work over the first one and not have
19 any interruption in processing gas.

20 MR. PADILLA: Just so we're clear, either
21 one would be capable of the full MAOP?

22 THE WITNESS: Yes, sir, or the full rate
23 below the MAOP. Yes, sir.

24 MR. PADILLA: The full injection volume?

25 THE WITNESS: Yes, sir.

1 MR. PADILLA: Okay. Just a random
2 question.. Do you see any commercial viability for
3 the CO2 down the road?

4 THE WITNESS: Well, probably not. And the
5 reason is because it has got a significant volume of
6 H2S in it as well. You know, is there some
7 potential down the road for maybe CO2 credits or
8 something from that, that remains to be seen.
9 There's a lot of concerns, issues about these are
10 Class 2 wells and Class 6 wells are designed for CO2
11 sequestration so we don't really know. But to be
12 honest, I don't see a real potential for the use of
13 that CO2 once it's been injected in conjunction with
14 the H2S.

15 MR. PADILLA: That's all. Thank you.

16 MR. BALCH: You know that H2S improves
17 admissibility in oil?

18 THE WITNESS: It does. People are very
19 sensitive to having their sweet oil turned sour.

20 MR. BALCH: You have to have an already
21 sour field.

22 THE WITNESS: Yes. We have a couple
23 projects in Texas where we haven't gotten one --
24 convinced one of the operators to do it yet, but we
25 have some candidate projects that we're looking at

1 where people would use essentially a completely
2 depleted field to inject acid gas into a combination
3 of H2S and CO2 to do that. The real problem comes
4 that in the places where you have the opportunity to
5 do that, so many times there's so many penetrations
6 that are not well controlled or well cemented that
7 it could be problematic. But it's certainly
8 something we have thought about.

9 CHAIRMAN CATANACH: Mr. Gutierrez, I
10 thought I read somewhere that there was a 30-year
11 permit expiration on the wells.

12 THE WITNESS: Mr. Chairman, I don't have
13 the order right in front of me or in my mind, but I
14 don't know that there's a specific expiration date
15 to the particular permits but they were calculated
16 on the basis of a 30-year life at the maximum rate.

17 But what we have found in almost all of
18 these and this is no exception, for example, this
19 well is permitted and the calculation of the area of
20 review and the area of influence was done on the
21 basis of originally two million a day from day one
22 through Year 30, and in the new analysis that we
23 have done it's basically three-and-a-half million
24 from day one to Year 30.

25 But that rarely happens. I mean, these

1 tend to ramp up over time. As Mr. Bryant mentioned.
2 We have been running only about 1.4 to 1.8 or so
3 million for the years that it's been running, so in
4 reality, the area that's going to be influenced is
5 going to take longer than the 30 years but we have
6 calculated it on the basis of a 30-year life, yes,
7 sir.

8 MR. HALL: Mr. Chairman, if you look at
9 the A order, last page, Paragraph 3. That's the
10 order for the No. 1 well. I don't find it for the
11 No. 2.

12 MR. BRANCARD: No, when we added the No. 2
13 we kind of shifted his condition 12 that requires a
14 report.

15 THE WITNESS: After ten years.

16 MR. BRANCARD: Every ten years you come in
17 and sort of basically truth up to what you have
18 projected here and what's going on.

19 THE WITNESS: Exactly. That's the
20 approach that the commission has taken on a number
21 of the wells since about the time when the No. 2 was
22 approved.

23 CHAIRMAN CATANACH: So it wouldn't be
24 necessary for us at this time to reduce the project
25 life because of the additional volume?

1 THE WITNESS: No, because even the way we
2 have mapped it out, that additional volume still
3 comes well under the area of review and, in fact, if
4 we thought we would have had this volume initially
5 it's probably what we would have requested to begin
6 with.

7 MR. BRANCARD: What types of permit
8 modifications do you anticipate in the future?

9 THE WITNESS: We talked just yesterday
10 about how I would answer that question, and I really
11 can't think of any other than the possibility for
12 maybe some modification. Let's just say, for
13 example, we had an occasion to rework the No. 1 well
14 or something and we wanted to put some additional
15 monitoring equipment or something like that in the
16 well. If we perhaps, you know, encountered some
17 unexpected problem in the reservoir, you know, like
18 what we did when we did the No. 1, we might need an
19 increase in the MAOP, although I don't think we
20 will.

21 But those are the kinds of things we're
22 thinking about. I don't know if the division had
23 something else in mind when they made that comment,
24 but I think it's basically that there could be some
25 things that are unforeseen but that don't really

1 affect the major parameters that the order covers
2 that we still would feel we would want to go to the
3 division for approval.

4 CHAIRMAN CATANACH: I think the type of
5 things that are routinely amended in SWD orders are
6 basically pressure increases, things like that.

7 THE WITNESS: Yes, sir.

8 CHAIRMAN CATANACH: As a matter of fact,
9 rates are not even included in most orders.

10 THE WITNESS: That's right.

11 CHAIRMAN CATANACH: Rate limits. And then
12 it's routinely asked for. So you believe we would
13 still have the authority to set something, the
14 commission, in case we thought it was a major
15 modification to the permit?

16 THE WITNESS: That's exactly what we are
17 proposing, is that that discretion would lie within
18 the division to say to us, "Okay, this is something
19 that we think, given the order, we can act on."
20 Like, for example, this request. If that
21 flexibility had been there, I think the division
22 evaluated this from a technical perspective and
23 didn't feel there was any concern, so that would
24 have been probably something they would -- not
25 speaking for the division but my understanding is

1 it's something I think they would have been amenable
2 to approving administratively but we just don't have
3 that option right now.

4 CHAIRMAN CATANACH: I think that's all I
5 have.

6 MR. BRANCARD: Just following up on that,
7 in the commission order in the second Order No. 14,
8 it says you are supposed to notify the division of
9 all the changes, conditions imposed by the BLM. I
10 assume --

11 THE WITNESS: Well, since we have the
12 currently approved APD and that has been sent to the
13 division, the district office by the BLM, now
14 clearly when we finish this potential redesign
15 that's something we would approach the division with
16 before we were to do it, of course.

17 MR. BRANCARD: In that order paragraph we
18 wrote in, "And the division shall determine if the
19 changes are significant enough to require a change
20 in this order by the commission."

21 THE WITNESS: Right.

22 MR. BRANCARD: You don't specifically, in
23 your proposed order, have that in there that the
24 director can refer a matter to the commission.
25 Would that language be okay for your --

1 MR. HALL: We were contemplating that. So
2 yes.

3 THE WITNESS: We were contemplating that
4 would be left in the order, you know.

5 MR. BRANCARD: That would make it more
6 explicit that you would submit any changes to the
7 order to the director and the director would
8 determine whether it administratively goes to the
9 commission.

10 THE WITNESS: That would be fantastic.
11 That's exactly what we would like.

12 MR. HALL: That's the way the application
13 reads.

14 MR. BRANCARD: One other thing. What you
15 are saying is you want this 3.5 million cap
16 available for both wells.

17 THE WITNESS: Yes, sir.

18 MR. BRANCARD: Now, the calculations are
19 showing us here with the radius is just for AGI No.
20 2.

21 THE WITNESS: That's correct. But it
22 would be the same -- if you essentially split the
23 volume between the two wells, it would be a smaller
24 area. It would just be a slightly different shape.

25 MR. BRANCARD: What's the distance between

1 the injection point of AGI No. 2 and AGI No. 1?

2 THE WITNESS: 1600 feet is the distance.

3 MR. BRANCARD: Okay. So we're talking
4 about a third of a mile here. But this authority
5 would allow you to send all 3.5 million to AGI No.
6 1.

7 THE WITNESS: Yes.

8 MR. BRANCARD: If there's a problem with
9 AGI No. 2. So wouldn't you be doing this whole
10 calculation of the radius for AGI No. 1 just like
11 you would for AGI No. 2?

12 THE WITNESS: We did, in fact, do that. I
13 mean, I didn't go through all of that here in this
14 presentation in order to save some time, but what we
15 did initially, for AGI No. 1 we had an area of
16 review that was one mile, not half a mile but one
17 mile. For AGI No. 2 it was reduced to half a mile
18 because we were in the process at that time with the
19 division of working out new regulations for that,
20 and that's the way we were envisioning that those
21 regulations were going to require.

22 When we went back and looked at this, we
23 did the same thing that we did for the No. 2 around
24 the No. 1 and had the same results. We didn't have
25 any new wells in the area of review. We didn't have

1 any additional wells. It was the Queen Bee No. 36.
2 That was even in the first well as well.

3 MR. BRANCARD: You didn't rely on your
4 well review from the initial application, you looked
5 at it again?

6 THE WITNESS: Yes, sir, we did.

7 MR. BRANCARD: Drawing the radius around
8 No. 1.

9 THE WITNESS: Yes, sir.

10 MR. BRANCARD: You just haven't shown it
11 to us?

12 THE WITNESS: That's correct. I would be
13 happy to provide it. It used to be that we would do
14 automatically a one-mile area of review for these
15 wells. Then when we went through these two years of
16 working out these regulations that we still haven't
17 proposed to the commission, we determined that it
18 was appropriate to look at the area of review based
19 on what the 30-year projection would be. And if it
20 was less than half a mile we would use a half mile
21 area of review and if it was more than half a mile
22 we would use a mile area of review. Hence, what we
23 proposed here.

24 CHAIRMAN CATANACH: Anything further?

25 MR. HALL: That concludes our case.

1 CHAIRMAN CATANACH: Okay. So I guess we
2 need to go into a closed session.

3 MR. BALCH: I will make a motion to go
4 into closed session.

5 MR. PADILLA: Second.

6 CHAIRMAN CATANACH: All in favor?

7 COMMISSION: Aye.

8 (Note: Closed session from 10:00 to
9 10:24.)

10 MR. BALCH: I will make a motion to go
11 back into open session.

12 MR. PADILLA: I will second.

13 CHAIRMAN CATANACH: All in favor?

14 COMMISSION: Aye.

15 CHAIRMAN CATANACH: I will state for the
16 record that in executive session we have discussed
17 this matter and this matter only, the issues with
18 regards to this case, and with that I will turn it
19 over to general counsel.

20 MR. BRANCARD: The commission proposes to
21 approve the injection rate for the Malijamar AGI 1
22 and 2 at a rate of 3.5 million. The commission does
23 not approve the change that would allow the division
24 to make changes to the injection authority. We will
25 go with the language in the order. You have

1 submitted a draft order. If you could submit it to
2 me by e-mail we can move pretty quickly to get this
3 done.

4 MR. HALL: Okay.

5 CHAIRMAN CATANACH: Anything further?

6 MR. HALL: That's it. Thank you.

7 (Note: The hearing was concluded at
8 10:25).

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REPORTER'S CERTIFICATE

I, JAN GIBSON, Certified Court Reporter for the State of New Mexico, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings and was reduced to printed form under my direct supervision.

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

JAN GIBSON, CCR-RPR-CRR
New Mexico CCR No. 194
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