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1	! APPEARANCES	
2	FOR APPLICANT DCP MIDSTREAM, LP:	
3	ADAM G. RANKIN, 'ESQ. HOLLAND & HART	
4	110 North Guadalupe, Suite 1	
5	Santa Fe, New Mexico 87501 (505) 988-4421	
6	agrankin@hollandhart.com	
7	FOR NEW MEXICO OIL CONSERVATION DIVISION:	
8	GABRIEL WADE, ESE. OFFICE OF GENERAL COUNSEL	
9	Oil Conservation Division	
10	Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive	
11	Santa Fe, New Mexico 87505 (505) 476-3451 gabriel.wade@state.nm.us	
12	gabilei.wadeestate.nm.us	
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Page 4 (9:05 a.m.) 1 ! CHAIRPERSON BAILEY: I'll now call Case 2 3 Number 15073, which is application of DCP Midstream, LP, 4 for authority to inject treated gas -- acid gas into the 5 Lower Cherry Canyon and Upper Brushy Canyon Formation through Zia AGI #1 and Zia AGI #2, in Lea County, New 6 7 Mexico. 8 Appearances? 9 MR. RANKIN: Morning, Madam Chair, Commissioners. 10 11 Adam Rankin, Holland & Hart in Santa Fe, representing DCP Midstream, LP. I have two witnesses 12 13 this morning, one technical, one fact witness. And I 14 would like an opportunity to make some brief opening 15 remarks. 16 MR. WADE: Morning. Gabriel Wade 17 representing the OCD, and I have one witness. 18CHAIRPERSON BAILEY: We will swear 19 witnesses at the time of their testimony. 20 Would you like to make your brief opening 21 remarks? 22 OPENING STATEMENT 23 MR. RANKIN: Thank you very much, Madam Chair, Commissioners. Good morning. 24 25 Madam Chair, we're here today on DCP's

Page 5 application to approve authorization to inject for two 1 new acid-gas injection wells associated with a brand-new 2 das processing facility in southeastern New Mexico. 3 The 4 AGI wells associated with this plant are necessary and with the operation plant itself, and the plant is needed 5 to meet growing demand for gas processing in 6 7 southeastern New Mexico. 8 Today you'll hear testimony from DCP's 9 witnesses that it's planning to commit nearly half a 10 billion dollars constructing these wells, the plant 11 itself, and related infrastructure associated with the 12 plant and facility. And they intend to commence 13 operations of the plant and the injection wells in about 14 a year and a half. 15 From DCP's perspective this vast commitment 16 of resources and money and planning and time is entirely 17 dependent on the, first of all, these two AGI wells. 18 The facility as it was planned is unworkable without the 19 exact wells. The design just won't accommodate any 20 other approach, and DCP would have to step back and 21 re-evaluate the project entirely. 22 And more importantly, the economics and the 23 business rationale supporting the proposed project and 24 the plant would be seriously undermined without the 25 approval of these wells.

Page 6 With respect to the economics and the 1 business rationale, DCP has proceeded with the intention 2 3 of committing the money and resources for this project on the premise that the project will be a 30-year-plus 4 project. So they have intended to go forward and commit 5 6 the resources with that foundational understanding. 7 Today you'll hear testimony that DCP has 8 also reached agreement with the Division with respect to 9 the Division's concerns, that they raised in their pre-hearing statement, regarding four wells within the 10 half-mile area of review, in addition to some additional 11 12 requests or conditions to approval. 13 And you'll also hear testimony today that 14 DCP's C-108 will adequately protect fresh groundwater 15 resources, that it's otherwise approvable, and that it 16 will protect human health and the environment by 17 reducing net air emissions and that the application will 18 prevent waste and protect correlative rights. 19 Thank you, Madam Chair. With that, I'd 20 like to call my first witness. 21 CHAIRPERSON BAILEY: Let me see if Mr. Wade 22 has any opening statements. 23 We will withhold statements for MR. WADE: 24 now. 25 CHAIRPERSON BAILEY: Please call your first

Page 7 1 witness. MR. RANKIN: Thank you, Madam Chair. 2 Ι 3 would like to call my first witness, Mr. David Stone. CHAIRPERSON BAILEY: Will you please stand 4 5 and be sworn by our court reporter? 6 DAVID LEE STONE, 7 after having been first duly sworn under oath, was 8 questioned and testified as follows: 9 DIRECT EXAMINATION 10BY MR. RANKIN: 11 Good morning, Mr. Stone. How are you? 0. 12 Good. Thank you. Α. 13 0. Good. 14Will you please state your name for the 15 record? 16 Α. David Lee Stone. 17 And for whom do you work? Q. I work for DCP Midstream. 18 Α. 19 And how long have you been employed by DCP? Q. 20 Approximately 16 years. Α. 21 Ο. And what is your current position with DCP? 22 I'm currently the vice president of commercial Α. 23 and operations for our southeast New Mexico assets. 24 Q. And in that role or position, what are your 25 duties?

Page 8 1 I'm responsible for commercial activities, Α. business development, and day-to-day operations of our 2 assets within southeast New Mexico. 3 That would include oversight and planning for 4 0. 5 this proposed new building facility and the new wells? That falls under business development. I 6 Α. Yes. 7 am currently the responsible officer at DCP for what we call our CF program project. 8 9 Stepping back, what is DCP's business in Ο. southeast New Mexico? 10 11 DCP is a midstream service provider. Α. At our 12 core, we gather gas production from the wellhead; 13 deliver it to processing plants, such as we're 14 discussing today with the Zia 2 Plant; process that gas 15 between methane and natural gas liquids; and then 16 deliver that to markets out at the tailgate of the 17 plant. 18And today you're appearing as a nontechnical Ο. 19 fact witness; is that correct? 20 That is correct. Α. 21 0. And Mr. Alberto Gutierrez will be testifying on 22 behalf of DCP as the technical witness; is that correct? 23 Α. Yes, that is correct. 24 0. And, Mr. Stone, have you prepared demonstrative 25 slides to assist you with your testimony today?

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Page 9 1 Α. Yes. We have a number of slides today to go 2 along with the testimony. 3 0. All right. So, Mr. Stone, just -- as I 4 mentioned in my opening remarks, these two new wells are associated with the entirely new gas processing plant 5 6 and facility; is that correct? 7 Α. That's correct. The Zia II processing facility 8 will be a new grassroots facility, inclusive of both a 9 cryogenic processing process, as well as -- we're 10 premising the acid-gas injection wells. 11 How did DCP come to decide that there was a Ο. 12 need in southeastern New Mexico for an entirely new gas 13 processing plant? 14Α. Essentially through volume demands and from the 15 producing community. I think it's very apparent of the 16 increased activity that we've seen in southeast 17 New Mexico in recent years. It continues to escalate. 18 Our systems are essentially full to this point, creating 19 some constraints with the producing community, not only 20 ours, but others within the area. 21 Q. And when DCP was evaluating this new proposed plant, it had intended -- tell me a little bit about the 22 23 decision to do acid-gas injection wells. 24Α. Our intent or the basis for going on with the acid-gas injection wells, first off, we are applying for 25

Page 10 a PSD permit which is the most onerous of air permits 1 that we can seek for the facility. It requires a very 2 3 low set of permitted emissions. The AGI provides the 4 United States the best available technology, one that 5 we're also familiar with a number of our other 6 facilities, to be able to meet the requirements of the 7 air permit, and provide the service that the producers 8 request, and that the State demands from an emission 9 footprint. 10 Mr. Stone, you mentioned PSD. Ο. That's the 11 acronym for prevention on the significant deterioration; 12 is that correct? 13 Α. Yes, that's correct. 14 That's the acronym jargon for the type of air Q. 15 permit you're talking about, right? 16 Α. Yes, sir, that is correct. 17 Ο. Now, when you evaluated the project and the 18 processing -- gas processing plant, what is the 19 anticipated capacity of the new plant? 20 The nameplate design for the Zia II facility Α. will be 200 million cubic feet a day. 21 22 That value, that number, 200 million cubic feet Q. 23 per day, is that based on the projections of demand? 24 Α. Actually, it's a combination of a couple of 25 DCP operates a number of legacy facilities that things.

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Page 11 have gone past their time relative to technology. There 1. 2 are issues around efficiency, and they have a larger emissions footprint. So in part, we're looking to roll 3 in legacy plants, two small ones, plus, also, bring into 4 5 the plant a fold vintage [sic] compressor station on the low pressure side on the plant. 6 That will make up approximately 30 percent of the initial volume within 7 8 the facility. And then in addition to that, we have 9 premising a growth rate of roughly 70 percent with new volumes and drilling by producers. 10 11 0. So the benefits of the proposed plant 12 facilities are that you would roll in outdated 13 facilities in addition to meeting your demand? 14 Α. That's correct. By rolling in the outdated facilities, you're 15 0. 16 improving the overall functionality of the operations in southeast New Mexico? 17 Α. We are improving the reliability within our 18 19 We're also improving our pipeline integrity. system. 20 Zia II will perform a lower pressure base, which 21 provides hydraulic benefit on our system. And then 22 additionally to that, we will reduce our permitted 23 emissions footprint in southeast New Mexico with the 24 addition of Zia II by approximately 700 tons per year. 25 And that emissions reduction, is that with Q.

1 respect for the DCP's emissions or overall field
2 emissions?

3 Only associated with DCP emissions. From total Α. field emissions standpoint, if you include the producing 4 5 community's flare volumes, we've seen that escalate here 6 in recent time and due mainly to capacity constraints. 7 So with the Zia II project, the added capacity, our view 8 is that we will be able to accommodate more flow, which 9 should reduce producer flaring at the wellhead. 10Therefore, it's not only an emissions 11 benefit from a DCP-permitted base footprint, but also 12 the potential to reduce flaring from the producers' 13 standpoint, and better management of state resources. 14 0. Mr. Stone, tell me a little bit about the 15 prospects for the proposed plant in the absence of the 16 two AGI wells? 17Α. There really would be no prospects for a Zia II facility without AGI, especially on the timeline that we 18

19 talked about relative to demand. Our system has seen 20 increasing acid gas rates with the composition 21 increasing in both CO2 and H2S over time, to a point for 22 us to meet our air emission standards, we have to have 23 some levels of sequestration in treating associated with 24 those increasing acid gas rates and our inlet stream.

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In addition, growth volumes that are being

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Page 13 premised by producers are showing like-kind increases 1 over what we have seen historically associated with acid 2 3 gas concentration in both CO2 and H2S levels. We are at a crossroads relative to the 4 5 plant itself. To be able to benefit the widest amount 6 of volume, both existing on our system today and premise 7 growth, we need to have a sour facility. Otherwise, 8 with just a sweet facility, I do not believe that we 9 would be able to provide the surface level that the producing community needs, nor be able to reduce the 10 11 resulting flaring and emissions that would go along with the continued capacity constraint in the area. 12 13 Q. Thank you, Mr. Stone. 14 So in summary, without the ability to 15 inject the acid gas, you would be at increased emissions 16 over time. Would DCP, or any provider, be able to meet 17 the gas processing demands without relying on a --18 without an acid-gas injection well facility? 19 Α. How I would answer that question is this, is 20 that if you do not have the sour gas capability within 21 the Zia II facility or any other facility that does 22 natural gas processing within the state of New Mexico, 23 today or going forward, it's going to limit the ability 24 of producers to drill in all zones. You would only be looking at those wells that had what I call merchantable 25

Page 14 quality that would not require treating and would not 1 need to have an acid-gas injection to take care of the 2 treated overhead component from that treating. 3 And Mr. Stone, I'd like to talk now just a 4 0. little bit about the economics and the economic premise 5 6 underlying the proposed plant and the AGI wells. Can 7 you explain to the Commissioners a little bit more about 8 how the AGI wells are integral for the development and 9 planning of the gas processing plant? 10 Α. I'm going to ask you -- would you restate that 11 question. 12 0. I just wanted you to just talk a little bit 13 more specifically about the economics and how the underlying economics affected the decision by DCP to 14 15proceed with this project. In other words, what are the 16 underlying economic premises for the development on the 17 project? 18 Α. The underlying economic premise of the project -- first off, the Zia II program is roughly half a 19 20 billion-dollar investment for DCP. We are a large 21 company, but that is a very significant level for us. 22 It'll be the largest investment that we have made in our 23 southeast New Mexico footprint ever. 24 The economic premise is based on volume 25 throughput and our ability to service that volume from

1 the wellhead.

2 We look at the Zia II program as a long-term asset within our footprint. When I mention 3 4 long-term, we look at it as a 30-plus-year investment. 5 Our economics are based upon many variables, all which deal with risk, most of which are either going to be 6 7 time based, which is the tenure of that facility and 8 operations, and also trying to take into account market 9 volatility associated with commodity price, as well as 10what we premise activity to be. I think we can all 11 appreciate that we do live in somewhat of a cyclical 12 environment relative to production.

Therefore, it is a requirement for our economic premise that we look at derisking portions of the project associated with that volatility, and the way we compensate for that is with added time duration on the expectation of that economic premise.

Q. Mr. Stone, if I might ask you: Without the AGI wells and if DCP had to go forward with a sulfur reduction unit, for example, and could not rely on the injection of the acid gas as a disposal methodology -what would be the economic impact on the proposed facility now, if DCP had to rely on a sulfur reduction unit, for example?

25 A. A sulfur recovery unit and tail gas incinerator

Page 15

Page 16 design for any plant is, first off, burdensome relative 1 2 to a cost standpoint. It's not the best available 3 technology for capturing and sequestration of acid gas at this point. It is not the best design relative to 4 reducing air emissions. 5 From our standpoint, if we had to look and 6 7 move away from an AGI and look at an SRU and tail gas incinerator, it would add substantial time to our 8 9 permitting process. Given the current permitting 10 requirements, both state and federally, I have no 11 visibility as to what that added time would be. We are 12 trying to pursue what we believe and others, our 13 experts, subject-matter experts, have all concluded as 14the best available control technology to benefit the producing community, the state of New Mexico, management 15 16 of their resources, and the general public. 17 Mr. Stone, I want to go back to something you Q. 18 mentioned earlier in your testimony. You said that DCP 19 views this project as a long-term investment, 20 30-year-plus investment. 21 Can you explain to me a little bit about 22 what the impact on DCP's ability to commit to this 23 project would be if there was a substantial change in 24 the regulatory environment, if DCP could not -- cannot 25 be assured that it would have a 30-year-plus life span

1 with this plan?

If we didn't have certainty that we could have 2 Α. 3 a continual operation for 30 years or longer -- and I'll reference back that our facilities in southeast 4 New Mexico have been in operation in excess of 60 years, 5 a number of them. But if we did not have that certainty 6 7 that we could operate continually for an unlimited period of time, beyond, say, ten years, we would have to 8 9 re-evaluate the economic view that we have and, most 10likely, look at other alternatives to try to accomplish 11 the same as what we can do with Zia II as premised 12 before you today.

Q. What would some of those other alternatives be if you couldn't -- if you couldn't be assured of the ability to inject acid gas for a period of the 30-plus years?

17 We would look at alternative investment in Α. other areas that we might be able to provide the same 1819 level of service. Of course, it would be at an added 20 I think it would ultimately be at an added cost to us. 21 cost to the benefit of the state resources and 22 managements of those and to the producing community and 23 the economic development in southeast New Mexico, 24 because what we would be talking about is extended time. 25 I have no certainty as to what those alternatives would

Page 17

Page 18 1 be, but that would be the path we would have to take. 2 Now, I mentioned in my opening remarks, Ο. 3 Mr. Stone, that there was -- and you mentioned this as well -- that DCP projecting about a half a billion 4 dollar cost of the infrastructure for this. Could you 5 just briefly review for the Commission what some of the 6 7 infrastructure and cost would be associated with this? 8 Α. I think you've heard me reference the Zia II 9 not only as just the Zia II plant, but as the Zia II 10 program. The Zia program is, of course, the Zia II 11 processing plant with the acid-gas injection facility. It's also 50 miles of 20-inch trunk line that runs north 12 13 and south and bifurcates our system today, which 14 essentially on a hydraulic basis will double our processing capacity within our pipe system. 15 Additionally, we have premised growth 16 17 through compressor stations and low pressure gathering 18 to service producers at the wellhead. We'd be able to convey that volume, as I described earlier, from the 19 20 wellhead to the Zia processing facility. 21 Additionally, we had talked about the 22 consolidation of legacy vintage facilities. Those 23 facilities, with the added pipe and the lower pressure 24 base, can be rolled into our Zia II facility. 25 Ultimately, the overall program, inclusive

Page 19 1 of all of those components, actually creates a super system for DCP within southeast New Mexico, which 2 3 creates optimization across our system. What that means to us is that -- and to the producing community -- is 4 that our reliability improvements, as I had mentioned 5 earlier, will come through being able to leverage all of 6 7 the facilities that we have on our system. We would then be able to mitigate downtime and fold gas in for 8 9 short periods of time into other systems because of the 10 added infrastructure that is added to the system, 11 primarily through 50 miles of 20-inch pipe bifurcating 12 our system. And all that development that you've been 13 0. referencing and the super system that you're 14 15 referencing, is that all dependent on approval of these two acid-gas injection wells? 16 17 The two acid-gas injection wells, as we Α. Yes. 18 have the layout for the plant today, are a critical path Without the acid-gas injection wells at Zia 19 algorithm.

II, as I stated earlier, there will be an increase in acid gas rates. Of course, given the composition from both CO2 and H2S, we would be unable to service the producing community's growth perspective, and therefore, the added development between the pipes, the added compression, the optimization benefit for the system we

Page 20 would not be able to support because we would not have 1 the capacity to be able to justify that project. 2 3 Q. Thank you, Mr. Stone. Mr. Stone, I'd like you to just talk a 4 little bit about the proposal to operate two acid-gas 5 6 injection wells concurrently. Can you explain a little bit for the Commission what the benefits are that DCP 7 sees with operating two or a redundant AGI system? 8 9 Α. I believe DCP will be a prudent operator. Ι 10 think we look back at lessons learned. We have, as you are aware, acid-gas injection wells at a number of our 11 12 facilities. We clearly understand the burden to the 13 producing community, the burden to emissions, should we 14 have a failure in one of those wells. So as a prudent operator, we believe that the investment is supportable 15 16 to go ahead and -- easily supported to go ahead and make 17 that initial investment to drill both wells or two wells 18 and have redundancy on site to mitigate downtime, to reduce the potential of flaring, both at the wellhead 19 20 and at the facility, and basically to provide the best 21 service available to the customers, as well as to 22 maintaining our permitted emissions levels. 23 Ο. Now, talking a little bit about the plans going 24 forward, what is DCP's anticipated timeline for the 25 approval of all these outlying permits and the

1 construction of the plant and subsequent commencement of 2 the operations?

3 As we're talking today, the permit for the AGI Α. 4 is a critical path for us. Should that permit be 5 granted, our expectation is -- and, of course, the PSD 6 permit from the NMED. Our expectation is we would look 7 at commencing construction in April, of course, subject 8 to the granting of those permits, with completion --9 current expected completion in the midsummer 2015. 10 With that said, this is a very complex 11 project. There are a number of variables to which I 12 just mentioned in the permitting process and then, 13 additionally, the potential of delays associated with 14 long-lead items. There are many things that go into a 15 processing facility, processing skids, compression, a 16 multitude of materials, any of which, with long delays, 17 could extend our construction period by a number of months, anywhere from 3 to 12, potentially, just as an 18 19 example. And with the current activity and demand for materials in the oil and gas sector, we are seeing that 20 21 more and more that we are experiencing delays. I think 22 that we have done prudent and appropriate planning thus 23 far. I think we've secured the majority of our 24 long-lead items at this point, at least on paper, but 25 there are still those items that can fall out, but the

Page 21

base premise is to be completed by midsummer of '15. 1 And, Mr. Stone, you were referencing some of 2 Ο. 3 the challenges and complexities of constructing and preparing an operations facility and project of this 4 size. Are some of those complexities and, would you 5 6 say, challenges the reason why you're seeking a three-year authorization prior to commencement of the 7 injection in this case? 8

9 Yes, that's correct. As I described earlier, Α. the AGI permit is, of course, the critical path. 10 Ι 11 think we've established that at this point. We still 12 have the variable of time with the NMED air permit. We 13 believe that we're on course for an April start at this 14 point, but that's still subject as an unknown. 15 Additionally, with the long-lead items, we do not have good visibility. So having that latitude of time on the 16 17 back side allows us to compensate for those unknown potential delays that could arise over the course of a 18 19 project as complex as this.

Q. And, of course, before you reach those trigger points, those decision points to provide with some of those construction activities, it's necessary first to have the approval for the injection through these two wells; is that correct?

25 A. That's correct.

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Page 22

Page 23 1 Q. And, therefore, you need to have the Yeah. 2 approval and that additional lead time before injections commences to accommodate all the construction 3 4 complexities and all the permitting that DCP anticipates 5 it might face? 6 Α. Yes, that is correct. Ο. It's a fair statement? 7 Α. Yes. 8 Now, Mr. Stone, you have had a chance to review 9 Ο. 10 the Division's pre-hearing statement; is that correct? 11 Α. Yes, I have. 12 And you've had a chance to look, particularly, Ο. 13 at the Division's proposed conditions that they have 14 anticipated asking the Commission to impose on any 15 permit approval? 16 Α. Yes. 17 Q. And would you mind -- I guess, let me just take 18 the four wells that the Division has identified as 19 having some concerns about. With regard to those four 20 wells that the Division identified in its pre-hearing 21 statement, is DCP willing to engage in good faith to 22 cooperate with the Division and the operators of those wells to work with the Division to ensure that the 23 24 Division's concerns are addressed with respect to the 25 protections across the injection interval?

Page 24 Α. It is DCP's intent to work in good faith with 1 the Division to address any issues or concerns and 2 corrective measures that are necessary associated with 3 4 the Zia II AGI request. 5 Is it your understanding that DCP has reached 0. agreement with the Division on those terms and 6 7 conditions that they have proposed for those wells? 8 Α. That is my understanding. 9 Ο. And will your DCP technical witness address the 10 specifics of those wells in his testimony? 11 Α. Yes, he will. 12 Now, Mr. Stone, with respect to the other 0. 13 conditions that the Division has proposed for the 14 approval of this order, does DCP agree to conduct a 15 yearly MIT on both of these wells? 16 Yes, we do. We believe that to be prudent. Α. 17 Q. And does DCP also agree to monitor the treated 18 acid-gas injection pressures and temperatures? 19 Α. Yes, we do. And I believe our technical 20 witness will describe that and go into detail if the 21 process is there. 22 0. Thank you. 23 And with respect to the Division's proposal 24 to submit monthly summary data reports on a Form C-103, 25 is it your understanding that the Division has agreed

Page 25 1 with DCP's proposal to submit quarterly summary data 2 reports? 3 Α. Would you repeat the question again? I want to 4 make sure that I clearly understand. Q. Sure. I probably convoluted that, made it into 5 a very complicated question. 6 7 Do you understand the Division originally 8 proposed monthly summary data reports? 9 Α. Yes. 10 Is it your understanding that DCP and the 0. 11 Division have reached an agreement to provide, instead, 12 quarterly summary data reports? 13 Α. Well, I'm going to tell you I am not positive 14 about the response that we've agreed to the quarterly. 15 My view, and the conversations I've had at this point 16 relative to the monthly reporting, we find it to be 17 administratively burdensome. We would request semiannual or quarterly, and at your request, anytime 18 19 that you wanted information, we would be more than happy 20 to provide it. 21 We believe that the summary operating 22 information is very important both for DCP, as well as 23 the Division. But the monthly, I think, is, from our 24 viewpoint, an option that is needed if there have been 25 experienced issues around a well and we're trying to

Page 26 1 track parameters more closely. 2 We do monitor our well on a daily basis, and I think that our view is that from a quarterly or 3 semiannual time frame, that we can give good visibility 4 and still have confidence, from an operator's 5 standpoint, that we are performing, and the well is 6 7 performing as prescribed to the satisfaction of the 8 Commission. 9 Q. Thank you, Mr. Stone. 10I think that was it. 11 Mr. Stone, would you mind, just in summary, 12 summarize for the Commission what it is that DCP is 13 requesting here? 14 Α. Sure. Thank you. 15 As I've covered in the conversation today, 16 the Zia II program and associated AGI system is 17 extremely important, not only to DCP and the expansion 18 of our system, but I believe it to be important to the 19 state of New Mexico from a development and management of 20 their natural resources through the producing community. 21 The project itself will provide added 22 capacity, and, in our view and through our design and 23 analysis, it will reduce our excess emissions -- or our 24 permitted emissions footprint within southeast It should reduce flaring at the wellhead by 25 New Mexico.

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Page 27 the producing community, and it will provide capacity 1 for future growth of production within southeast 2 New Mexico. 3 4 It is our request that the Commission approve our C-108 as submitted. 5 6 Thank you, Mr. Stone. 0. 7 MR. RANKIN: Madam Chair, I pass the 8 witness. I have no further questions. 9 CHAIRPERSON BAILEY: Mr. Wade, do you have 10 any cross-examination? 11 CROSS-EXAMINATION 12 BY MR. WADE: 13 0. And did you request that the Commission approve 14 the application you submitted or with the conditions of 15 approval as agreed upon with the OCD? 16 As agreed prior with the OCD. Α. 17 MR. WADE: No further questions. 18 CHAIRPERSON BAILEY: Commissioner Warnell, 19 do you have any questions? 20 COMMISSIONER WARNELL: I do. 21 CROSS-EXAMINATION 22 BY COMMISSIONER WARNELL: 23 Good morning, Mr. Stone. 0. 24 A. Good morning. 25 Q. You talked about reduced flaring on the

1 operators.

2

A. Yes, sir.

Q. Will there be any flaring at your plant if two wells are improved?

A. Within the operating environment, rotating equipment, any process, there is always going to be some level of mechanical failure, no different than when you drive your car. And there is always going to be the potential for flaring. We look at it to be a very short duration.

11 We can experience flaring if we have 12 third-party outages such as a power surge [sic]. You 13 know, we can have flaring if our residue or if the NGL 14 take-away pipes were to abruptly shut down. We do have 15 some amount of NGL storage at the facility, so we're 16 less susceptible to the NGL component, which then allows 17 our operations time to coordinate with producers to shut 18 their wells in and mitigate that relative to those 19 The whole premise of the AGI, though, events. 20 associated with the new facility is to mitigate that and 21 reduce our exposure to flared emissions. 22 COMMISSIONER WARNELL: I have no more 23 questions. 24 CHAIRPERSON BAILEY: Commissioner Balch? 25 CROSS-EXAMINATION

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Page 29 1 BY COMMISSIONER BALCH: I have a couple of questions. 2 0. Yes, sir. 3 Α. Ο. Good morning, Mr. Stone. 4 5 Α. Good morning. 6 Ο. So in the foreseeable growth in gas production 7 that DCP is trying to capture with this development, about what percentage of that future development in 8 9 five, ten years is going to be sour gas? 10 Α. I think from the very beginning, Commissioner, 11 that we're going to see rates of acid gas in our composition that are going to require the sour 12 13 facilities. Avalon Shale, in particular, we're starting to hear a lot of conversation around the Avalon Shale. 14 15 We're seeing rates on Avalon gas gathering today in the 16 12 to 14 percent CO2 range. H2S is in pockets. We are 17 seeing that periodically, but it's enough in the blend 18 relative to being able to meet the marketing 19 specifications on deliveries that we're required to 20 treat. And at that point, we would then be classified 21 as a sour gas stream. So as I had mentioned earlier, 22 we've already seen CO2 and H2S rates on the legacy 23 volumes within our system increasing. 24 I don't have a crystal ball that can tell 25 me, you know, within a range of where I'm expecting to

Page 30 1 see growth go, and so this, to a point, is trying to be preemptive and trying to get ahead of where we think 2 3 those rates may go. 4 We do know that we'll see producers over 5 the years switch back and forth from developments. Some 6 will be sweet. Some will be sour. Some will be more 7 sour than ours. This gives us the flexibility to be able to service all of those zones and be able to meet 8 9 the marketing specifications and constraints on the tailgates of our facilities. 10 11 Ο. Thank you. 12 The two wells that we're talking about 13 today, you mentioned they're critical path for your 14 development? 15 Α. Yes, sir. And they would be drilled beginning in April. 16 Ο. Would there be, to your knowledge, any injectivity 17 18 testing or other methods of determining whether they'll 19 meet the capacity you're requiring before further 20 development goes on? Do you have a no-go decision point based on the performance of these wells? 21 22 We will have an evaluation period. And I would Α. 23 prefer to pass that to our subject-matter expert on the 24 technical side, if that's okay. 25 That's fine. Q. Thank you.

Page 31 1 CHAIRPERSON BAILEY: I have a couple of 2 questions. CROSS-EXAMINATION 3 4 BY CHAIRPERSON BAILEY: You mentioned rolling in vintage -- two vintage 5 0. 6 plants and folding in two vintage plants. Are those 7 euphemisms for closing down two vintage plants? Yes, ma'am. Yes, ma'am. 8 Α. In response to your attorney's question, things 9 Ο. 10 qot a little muddled. So is DCP expecting the quarterly 11 reports? 12 Α. Yes, ma'am. We would accept the quarterly 13 reporting period. 14 Q. Okay. You're objecting to monthly reports? 15 Α. Yes, ma'am. Just so we have that very clear on the record. 16 Q. 17 Those were my only questions. You may be excused. 18 19 Α. Thank you, ma'am. 20 CHAIRPERSON BAILEY: Do you have any redirect, gentleman? 21 22 MR. RANKIN: Madam Chair, I have one question. 23 24 But I just wanted to advise you that 25 Mr. Stone has a flight this afternoon, and we would ask,

Page 32 if there are no further questions of Mr. Stone, that he 1 be excused to leave prior to the Commission's recess. 2 3 CHAIRPERSON BAILEY: I think any other 4 questions that we have could be handled through your 5 next witness. MR. RANKIN: Thank you, Madam Chair. 6 7 REDIRECT EXAMINATION 8 BY MR. RANKIN: 9 With respect to DCP's plan to develop this 0. 10 plant with two AGIs, was part of the purpose of 11 proposing two AGIs to reduce plant flaring? 12 Α. Yes. 13 0. Can you explain a little bit for the Commission 14 how a two-AGI system will help reduce plant flares? The two-AGI system as designed, each well can 15 Α. handle the total overhead off of our treater of acid 16 gas, and having both of them in continual operation 17 18 allows us to move total volume to one side or the other. 19 Therefore, if we have any issues associated with the 20 wellbore, then that would mitigate flaring, as we've 21 seen with a single-well setup. 22 Additionally, we are adding aboveground facilities that will give us redundancy on the 23 24 compression standpoint, that we would have a full 25 standby component to horsepower for the downhole

Page 33 1 injection, which then allows us to do preventative 2 maintenance where we take our units down and do our 3 appropriate operating maintenance program and not incur 4 flaring during that period of time. 5 Q. Thank you, Mr. Stone. MR. RANKIN: I have no further questions, 6 7 Madam Chair. 8 CHAIRPERSON BAILEY: You may be excused. 9 THE WITNESS: Thank you, Madam Chair, Commissioners. 10 11 MR. RANKIN: Madam Chair, with that, I'll 12 call our second witness, our technical expert on the 13 injection and the C-108 application, Mr. Alberto 14 Gutierrez. 15 MR. WADE: Madam Chair, can I request that 16 we take maybe a five-minute recess? My witness had to 17 leave, and I want to make sure he's here for this 18 testimony. 19 CHAIRPERSON BAILEY: Sure. Let's come back 20 at 10:00. 21 (Break taken, 9:50 a.m. to 10:04 a.m.) 22 CHAIRPERSON BAILEY: Would you stand to be 23 sworn, Mr. Gutierrez? 24 25 ALBERTO A. GUTIERREZ,

	Page 34
1	after having been first duly sworn under oath, was
2	questioned and testified as follows:
3	DIRECT EXAMINATION
4	BY MR. RANKIN:
5	Q. Good morning, Mr. Gutierrez. How are you
6	today?
7	A. I'm just fine. Thank you.
8	Q. Can you please state your full name for the
9	record?
10	A. Yes. My name is Alberto A. Gutierrez.
11	Q. Can you please tell the Commission where it is
12	you reside?
13	A. I live in Albuquerque.
14	Q. And where do you work?
15	A. I work for Geolex, Incorporated in Albuquerque.
16	Q. And what is your position with Geolex?
17	A. I'm the president of the company.
18	Q. What does Geolex do?
19	A. Geolex is a geologic and engineering consulting
20	firm, and we work in the area of environmental
21	geology and environmental work associated with different
22	types of industrial projects. And then we have
23	specialized expertise in the area of acid-gas injection
24	as it relates to oil and gas operations.
25	Q. You've worked on acid-gas injection permits,

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Page 35 1 correct? 2 I have. Α. 3 Q. How many have you worked on? Α. I've worked on probably 15 or 20 at this point. 4 And of those 15 or 20, you've worked as a 5 Q. 6 primary consultant working on the approval of those 7 applications? 8 Α. Yes. 9 Have you previously testified before the Oil Q. 10 Conservation Division? 11 Α. I have. 12 Q. And have you -- at the time of your previous 13 testimony before the Commission, were your 14 qualifications as an expert in petroleum geology, 15 acid-gas injection, well operation and design and 16 hydrology and groundwater contamination been accepted and made a matter of record? 17 18 Α. They have been, yes. 19 Mr. Gutierrez, did you prepare the Q. 20 application -- the C-108 application that was submitted 21 to the Commission? 22 Α. Yes. My office and I prepared it, yes; a number of staff worked on it. 23 But you oversaw the application and the 24 Q. 25 preparation of the application?

Page 36 1 Α. Directly, yes. And that's been marked as Exhibit 1; is that 2 0. 3 correct? I don't know if it's actually Exhibit 1, but 4 Α. 5 it --I will ask you: The C-108 before you, is this 6 Q. 7 a copy of the C-108 application that you prepared? 8 Α. Yes, it is. 9 MR. RANKIN: I'll mark that as Exhibit 10 Number 1 for the record. 11 (BY MR. RANKIN) Mr. Gutierrez, did you prepare 0. 12 a PowerPoint presentation reviewing the C-108 13 application and its salient points? Yes, sir, I did. 14 Α. 15 Q. Did you prepare the C-108 application and the 16 presentation you prepared today for the Commission? 17 Α. I did indeed. 18 Madam Chair, I would tender MR. RANKIN: 19 Mr. Gutierrez as an expert in petroleum geology, 20 acid-gas injection, well operation and design, hydrology 21 and groundwater contamination. 22 CHAIRPERSON BAILEY: He is accepted. 23 MR. RANKIN: Thank you, Madam Chair. 24 Ο. (BY MR. RANKIN) Mr. Gutierrez, I'd ask you just 25 to proceed with your slide presentation, and if I have

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1 any questions, I may interject, if that's okay.

A. Sure.

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Q. Thank you, Mr. Gutierrez.

Okay. Basically, the Commission is familiar Δ Α. 5 with how we've presented these things before. What I'm 6 going to do is go through and try to summarize for you 7 as succinctly as I can and as completely as I can, 8 first, the initial C-108 application, how we determine 9 the area of review and the notice procedures that we 10 followed in providing notice to the potentially affected 11 parties, and then to summarize the detailed technical 12 evaluation that we made to support the application, 13 present that to you and then end with a brief overview 14 of the Division's pre-hearing statement and the 15 discussions and agreements that we reached with the 16 Division earlier this week after reviewing their 17 recommended modifications to any kind of an order that 18 the Commission would issue.

19 So let's get started. Basically, as 20 Mr. Stone mentioned, DCP's requesting authority to 21 inject acid gas from two identical -- and in this case, 22 they're deviated wells. It's a difference that this 23 Commission has not seen from our AGIs previously, but I 24 will explain the rationale for why we are deviating 25 these two wells, as you will see in the presentation.

As you can see from the C-108, we're proposing a maximum injection rate of approximately 15-million cubic feet a day at a maximum operating surface pressure of 2,233, which was calculated based on the normal procedure that the Division uses for calculating maximum allowable pressure for injection wells.

8 In addition, we modeled the ultimate size 9 of the plume for the two wells, both at their proposed 10 maximum injection rate, as well as two times their proposed maximum injection rate. The result of that 11 12 modeling is that based on the reservoir characteristics 13 that we have been able to define, the radius for each 14 well after 30 years, in terms of the injection of 15 15 million a day, is about a quarter of a mile. The 16 injection radius is about .37 miles if you double that 17 injection rate. And so in either case, the 100 percent 18 safety factor brought us under half a mile.

19 There is no current or anticipated 20 production in the Brushy Canyon and Cherry Canyon 21 Formations. That's something we've discussed at length, 22 also, with the BLM in this area. As you will note from 23 our application and from my discussion later today, this 24 facility is being built on BLM property, and the 25 minerals in that area are BLM minerals. And there are

Page 39 some specific requirements that we have discussed and agreed upon with the BLM, through this process, as far as the well design because of where the wells are located.

5 There are about 29 wells that penetrate the 6 injection zone within a mile radius of the area of 7 review. Seventeen of those are active wells. Twelve of 8 them are plugged wells. Most of them are Strawn-Morrow-9 Cisco wells. Within a half a mile, there are nine wells that penetrate the injection zone. Seven are active. 10 11 Two are plugged and abandoned.

12 While we feel that all of those wells --13 you know, the concept of protecting and keeping the 14 injection in zone is a function of, basically, three 15 primary factors. One is how far is there a feature, 16 such as an old well, either active or abandoned, from 17 the injection point in terms of the likelihood of acid 18 gas actually reaching that well. That's one factor. 19 The second factor is the actual construction of the well 20 itself and the reliability with which we understand that 21 construction. And then the third is really the geologic environment and what protection the geology itself 22 23 provides. 24 In our case here, these wells are generally

outside of the area that we anticipate will be affected

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Page 40 1 after 30 years. However, we have discussed some specific wells with the Division that we have agreed 2 3 have less than optimal protection across the injection zone, and even though we feel they're far enough away, 4 we don't have a problem with addressing them in the way 5 6 that we will discuss going forward. 7 Also, the proposed injection zone is 8 capable of permanently containing the injected fluid. 9 We have done a careful analysis, looking for any kind of 10 features that would indicate that we've got structural 11 problems or fractures or faults in the area, and we have 12 found none at this point. 13 So what are the key elements of the C-108? 14 Obviously, the AGI project has some substantial 15 environmental benefits. I think some of those were 16 touched on by Mr. Stone's testimony in terms of the 17 sequestration of CO2 and the reduction of flaring that 18 is associated with the ability to take this sour gas 19 that is currently, in some cases, being flared by the 20 individual producers. 21 Also, nearby oil and gas wells and water 22 wells and surface water are protected by the well design 23 and geologic factors that we will discuss. And a 24 detailed, long interpretation has permitted the accurate 25 delineation of the reservoir and assuring that both the

nearby saltwater disposal wells and producing wells are
 protected.

The application, we believe, provides the 3 Commission with all of the details necessary to approve 4 5 the installation of the AGI wells. An H2S contingency 6 plan obviously has not been drafted for the plant yet, 7 which isn't fully designed, but certainly the DCP is 8 committed to and has retained us to prepare such a plan 9 that would be submitted for approval prior to commencing injection. 10

11 The adjacent operators, including the 12 operators of even the wells that we have discussed with 13 the Division, are supportive of the project. The BLM is 14 generally supportive of the project, and there have been 15 a number of permitting steps that are ongoing with the 16 BLM to obtain the lease for the facility.

17 Operators and surface owners have received 18 proper notice, and there have been no objections to this 19 AGI project from surrounding operators or surface 20 owners.

Q. Mr. Gutierrez, just to interject, you mentioned that the H2S contingency plan has not yet been submitted to the Division for approval, correct?

A. Yeah. It hasn't even been drafted yet.

25 Q. When you do submit it to the Division for

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A. Yes. As a matter of fact, that's really how we do the H2S contingency plans, just like we have done at Linam and Red Hills and a number of other facilities. The plan includes not only the AGI wells and the AGI facility itself, but it's integrated as one overall H2S contingency plan that takes care of the overall plan of the facility.

11 Q. Thank you.

12 The proposed AGI wells are designed to support Α. 13 the operation of the Zia Gas Plant. As Mr. Stone 14 mentioned, there is some real dependency on these wells 15 for this project, and the reason, as he mentioned, is because we are seeing a fair amount of CO2 -- increased 16 17 CO2 concentrations in inlet gas out there. And not only 18 from the pure -- even under the best of circumstances, 19 sulfur-reduction units are very difficult to permit and 20 to operate within air-quality constraints, but they're 21 especially difficult to operate in a situation where you 22 have either increasing or unpredictable variations in 23 CO2 concentrations because it requires -- SRU requires a 24 kind of stable and relatively low CO2 concentration to 25 operate efficiently.

1 Furthermore, the production that will be as Mr. Stone represented, there's going to be -- about 2 30 percent of the facility is basically production 3 that's consolidated from some small treatment facilities 4 like the existing Zia facility, but 70 percent of it is 5 6 new production that is anticipated to be generated in 7 the area. So that will provide some new revenue to the 8 state.

9 Here's where the plant is. It's kind of 10 out there in the middle of nowhere, in the Coracho 11 [phonetic] Plains area. It is, essentially -- Section 12 19, which is where the plant is being built, curiously enough, is right on the west boundary of Section 19, 13 14 which is the county line between Eddy and Lea Counties. 15 So it's really at the extreme western edge of Lea 16 County.

17 Let me give you a little bit about what the site is going to look like. The overall site can 18 19 encompasses about 188 acres, and the actual plant 20 operations area, including the AGI facility, will 21 encompass about 50 acres. The lands are all owned by 22 the U.S. Government, and they will be leased on a 23 long-term lease from the BLM. 24 The field gas is going to be sweetened by 25 two amine units. As Mr. Stone mentioned, they're also

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1 going to have a cryo unit for removing the NGLs prior to 2 the sweetening process train.

In addition, the proposed wells and all the surface equipment will be contained within the fenced plant area, and therein lies the reason why we're using deviated wells.

We would like to have the bottom-hole 7 locations of these wells separated by about 12- to 1,400 8 9 feet to minimize interference between the two wells, 10 since they're going to be injected and operated 11 simultaneously. But at the same time, we have a 12 competing interest, if you will, and that is minimize 13 aboveground, high-pressure acid-gas piping, which is a 14 safety factor. And so what we want to do is keep the 15 surface locations of the two wells relatively close 16 together, but then we want the bottom holes apart. So 17 you'll see how we have proposed to accomplish that. 18 The Zia AGI Well #1 is going to be drilled

19 2,100 feet from the south line, 950 feet from the west 20 line of Section 19. The #2 well is intended to be 21 drilled, essentially, 200 feet south of that same 22 location, but the bottom-hole location of the two wells, 23 they're going to be deviated such that the bottom-hole 24 location is going to be approximately 1,300 feet or so 25 apart. And they will be shown here on the next map.

Page 45 1 Here you can see that the AGI #1 we intend to drill right here is the surface location 2 3 (indicating). Here is the bottom-hole location (indicating). We will deviate the well to the north, 4 5 and then the #2, we are deviating here to the southeast 6 (indicating). And the rationale for those specific 7 bottom-hole locations will become clear when you look at 8 the geology. So it's not just separation. We're also 9 trying to get to the sweetest spot in the reservoir and 10 the thickest available porosity section so that we can minimize the extent of the acid-gas plume. 11 12 Here is a preliminary drawing that 13 represents what the plant is going to look like. The 14 process trains for the facility are located here 15 (indicating), the amine contactors here (indicating) and 16 the amine regeneration here (indicating). So basically 17 in yellow you see what is going to be low-pressure 18 acid-gas piping and then, in orange, the high-pressure 19 acid-qas piping. So basically the gas is going to be 20 collected from the amine unit and taken out to the 21 acid-gas compression at the northwest portion of the 22 facility, and they're going with one single 23 high-pressure line that Ts off to both of the wells. 24 And so that's a general layout based on the proposed 25 plant layout.

Page 46 1 The anticipated fluid, as we mentioned, is about 15-million cubic feet a day total for the facility 2 3 based on the best estimates currently of the CO2 and H2S 4 in the inlet concentrations. Injected fluid is 5 essentially anticipated to be about 11 percent H2S, 89 percent CO2, with some traces of light hydrocarbons. 6 7 We have looked at the compatibility with our own injection experience into similar formations and 8 9 what we understand about the water in the Brushy Canyon 10 and the Lower Cherry Canyon, and we don't anticipate a problem. As I mentioned before, the MAOP that we've 11 12 calculated is 2,233. 13 Okay. So let's talk a little bit about 14what the reservoir looks like. And I'm going to go into 15 the detailed geology a little bit later but just a 16 summary here. We anticipate -- we've got some pretty 17 good data from drill stem tests and a variety of other 18 wells in the area that give us an understanding that we 19 are anticipating somewhere in the neighborhood of 120-20 to 125-degree temperatures at the reservoir and about 21 2,400 psi. And given that -- those reservoir 22 conditions, we've calculated that the anticipated 23 capacity and the anticipated volume that that TAG is 24 going to occupy in the reservoir is somewhere in the 25 neighborhood of about 7,000 barrels a day; 7,050 is

1 actually what we've calculated.

2 After 30 years of operations, given what we 3 understand about the reservoir in that area, we're looking at about a .36, actually, radius from a single 4 well, if you were injecting from a single well. 5 The partition between the two wells, we're looking at radii 6 7 of approximately a quarter mile. This is what it looks like (indicating). I call it my Venn diagram because 8 it's -- the two -- the red shape that you see here 9 (indicating) is the two wells at the 15-million-a-day 10 11 rate, and the blue is the two wells at a 12 30-million-a-day rate. The purple line, just for 13 reference, is an outline of Section 19. 14 So you can see, this western boundary 15 (indicating) that I was saying, that's the western 16 boundary of Lea and Eddy County. 17 As we develop the application, you know, we 18tried to essentially follow what has been our 19 understanding over the last year and a half of 20 developing the new rules that are ultimately going to be 21 presented to the Commission in terms of AGI wells, which 22 is going to be a welcome thing to have. But we tried to 23 follow as much as we could the procedures that we 24 anticipate those rules are going to show. 25 So consequently, we evaluated everything

Page 48 1 within a mile, but given that we simulated that the 2 30-year injection plume was going to take up less than 3 .37 miles, we notified everybody within a half-mile radius of each of the two proposed wells. And as it 4 turns out, having given notice to everybody in that area 5 6 is the same as giving notice to everybody in a mile, 7 because they're all the same operators. So we did do that, and there weren't unleased minerals in the area. 8 9 We provided the notice, along with a 10 complete application to all of those surface owners. 11 There are no businesses or residences within a mile of the facility, but we provided it to all of the surface 12 13 owners. 14 We also -- the Commission published -- or 15 the Division published the newspaper notice. We have had no objections to the application, and the adjacent 16 17 operators, as we mentioned, do support the projects, 18 which is going to be a benefit to not only the area but 19 to the state in general. 20 Mr. Gutierrez, might I interrupt you for a 0. 21 moment, and I'm going to ask you just to identify? Is 22 this -- what has been marked as Exhibit Number 3 and 23 included with the pre-hearing statement today, is that a 24 copy of the letter that was sent out to all the affected 25 parties that you've identified requiring notice?

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Page 49 Yes, it is. And in addition, I'll just mention 1 Α. that this same information is included in our appendix 2 that contains the land information. 3 Q. You mention an appendix. Are you talking about 4 at the end of the C-108 application? 5 6 Α. That's correct. And the difference between Exhibit 3 and the 7 0. appendix is that Exhibit 3 just contains a copy of the 8 9 letter that was sent out to the affected parties? 10 Α. Right. 11 And then it also contains the green card 0. receipts indicating that the notice was mailed to those 12 individuals by certified return receipt requested? 13 Α. That's correct. 14 And then, Mr. Gutierrez, just to walk through a 15 Ο. 16 little bit more about the notice issue, you said that 17 BLM is the landowner; is that correct? 18 Α. Yes, sir. 19 Q. And did the BLM also conduct an Environmental 20 Assessment for this project? There is an Environmental Assessment that has 21 Α. 22 been prepared and submitted to the BLM, and, yeah, it's 23 been back and forth. I don't know exactly -- I think 24 it's under its final review stages at the present time. 25 Now, regarding the identification of these Q.

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Page 50 1 parties, just explain a little bit -- in a little more 2 detail for the Commission how you identified the 3 affected parties requiring notice.

Α. I mean, we obviously went through the 4 Yes. 5 process of retaining a land firm, NBS [phonetic; sic], that did a detailed review of the OCD records, the state 6 7 land records, the federal abstracts, and then actually went to each of the courthouses involved to evaluate and 8 9 identify all of the operators, lessees or mineral 10 interests in that area. And that's where we obtained 11 the information.

12 Q. So the addresses that were included for the 13 notice purposes, were those addresses in the record at 14 the time the application was submitted?

15 A. Absolutely. Yes, sir.

Q. In your opinion, Mr. Gutierrez, did you make a good-faith effort to locate and identify all the affected parties?

A. Yes, we did. And, frankly, we got a couple of applications returned because they weren't -- where there was really no forwarding address for that particular party. And in one case, we actually had an individual contact us because another leaseholder had received an application and they hadn't, but it was because their address of record -- they had moved since their address of record. So we immediately sent them a
copy as well.

3 The only other one that I recall that we had kind of a funny deal with is the one that we sent to 4 the BLM. Of course, the BLM was well aware of the 5 project and everything else. But in the courthouse, the 6 address of record for the BLM in Santa Fe is a certain 7 P.O. Box, and apparently they had changed that P.O. Box. 8 9 So after three -- after about two weeks, we got that 10 application back. We got a correct address, street address, for the BLM, FedEx'd them that application. 11 And then several -- about a week after that, we got that 12 13 application back in the mail from the BLM, and they 14said, Oh, send this to the Carlsbad District instead, you know, which is kind of funny, because the Carlsbad 15 16 District, while they take care of the technical issues, supposedly the state office is the one that's supposed 17 to be notice as a mineral owner and land owner. 18 But we did that as well. 19

20 Q. Thank you, Mr. Gutierrez.

Just as a recordkeeping matter, since I identified your notice as Exhibit 3, I just want to make clear that the hard copy of the presentation that you're reviewing and submitted along with the pre-hearing statement is identified as Exhibit Number 2; is that

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Page 52 1 correct? Yes. This is the slides we're reviewing right 2 Α. 3 now. Q. Thank you, Mr. Gutierrez. 4 So just in case we reference your slides, I 5 6 want to be able to reference -- to indicate that is Exhibit Number 2, for the record. 7 8 Α. Okay. 9 Thank you, Mr. Gutierrez. Continue. Ο. Okay. So I think -- at the risk of boring the 10 Α. Commission, because I know that they've heard this 11 12 before, but it's always a little different every time, I want to go over kind of what are -- just review very 13 quickly what are the important features that we look for 14 when we're looking for a reservoir for acid-gas 15 16 injection. 17 We want a geologic seal that will permanently contain the injected fluid. We want to make 18 19 sure that the zone is isolated from fresh groundwater. 20 We want to have no effect on existing or potential 21 production in the area. We want to make sure that the 22 reservoir is laterally extensive, it's permeable, and 23 it's got good porosity. And we want to have excess capacity for the anticipated injection volume and, 24 25 lastly, of course, a compatible fluid chemistry, which

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Page 53 1 is generally not a problem in terms of these saline 2 zones that we're looking at. So we believe that DCP's 3 application and these two wells as designed meet these 4 criteria.

5 So the process that we go through, of 6 course, we identify and characterize the wells and the 7 stratigraphy in the area. As I mentioned, we had a 8 number of wells, 29 wells, that penetrate the injection 9 zone within a mile. There are no completions or current 10production or injection in the area that we are -within the area of review into our injection zone. 11 12 There are wells that penetrate the injection zone, as I 13 mentioned, largely deep Strawn-Morrow wells.

Within a half mile, we've got nine wells, seven active and two plugged, that penetrate the injection zone, and we'll review those in more detail as we proceed.

18And as I mentioned, I think that either the 19 wells are far enough away or they're properly completed, 20 with the exception of the four wells that we have 21 discussed with the Division, which, while being 22 relatively far away from the perspective of injection, 23 they are within the half-mile area, and we have agreed 24 that there are prudent actions we should take relative 25 to those wells.

Page 54 1 This is a map (indicating). It's included 2 in the application as well. It shows the one mile from 3 both of the bottom-hole locations, and you can see the 4 wells in the area that penetrate the injection zone. 5 There are actually a lot more wells than this, as you'll 6 see in the application, in the area, but the bulk of the 7 wells in the area are completed in the Delaware Sand 8 above our injection zone. 9 And as a matter of fact, during the break, 10 I was visiting with the Division and wanted to point out 11 that there is a waterflood unit in this area, but it is 12 in the Delaware, above our injection zone, not in our injection zone. 13 14 The wells within the half mile that 15 penetrate the injection zone, you see this is the 16 general layout of those wells (indicating). This shows, 17 as I mentioned, those wells relative to the anticipated 18 footprint and the half-mile area of review and the 100 19 percent safety factor area, which is the area that is included in red. And we'll discuss the wells in more 20 21 detail as we go along. Let's talk a little bit about the 22 23 stratigraphy of the proposed area. The proposed wells 24 are on the southern slope of the northwest shelf of the The Cherry Canyon and Brushy Canyon 25 Permian Basin.

Page 55 Formations are sandstones and shales that are deposited 1 at the toe of the Capitan fore reef and are basically 2 3 contained above and below by low permeability stacks of 4 siltstones and shales. And we'll show you those in our 5 presentation. The wells will penetrate the Capitan 6 7 Aquifer. Now, that's important, because as I'm certain 8 the Commission is aware, there is an area that is 9 immediately adjacent to the area that we're in, actually, that is the BLM's four-string casing area, 1011 that requires four strings of casing. 12 Now, our particular zone is outside of 13 that, and so we've dealt -- we've discussed this in 14 detail with the BLM and worked with them on the design 15 of the wells to make sure that the Captain Aquifer is 16 adequately isolated. And we've extended our 17 intermediate -- I mean our surface casing to below the 18 bottom of that so that we can isolate it with not only 19 the surface but also the intermediate string and our 20 production string and cementing. 21 And I want to emphasize that the Capitan 22 Aquifer has the capacity to yield a lot of water, but 23 it's not drinking water. But the BLM still protects 24 that water because they consider it usable water, and, 25 in fact, it is used for a number of waterflood projects

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1 in the area. It is brine, basically, in many areas, but
2 it is still considered protectable, usable water by the
3 BLM.

Okay. So this is the general kind of 4 Permian overview of the main structural features 5 (indicating), and as you can see, we're located off the 6 7 south end of the northwest shelf as it goes into the 8 Delaware Basin there. This is kind of a cartoon that 9 shows you the stratigraphy -- general stratigraphy in 10 the area, and the zone that we are looking at injecting 11 in is the very lower portion of the Cherry Canyon and 12 the upper portion of the Brushy Canyon here. As I mentioned here, you can see, this 13

14 Capitan Aquifer protection area is this area 15 (indicating) that is shaded in blue. It actually 16 extends quite a bit further than that to the north and 17 west, but in terms of the immediate vicinity of our 18 plant, this is the area where it's located.

And so you can see our two wells are in the -- within the eastern portion of that area, and consequently that's why we had discussed in detail our well design with the BLM and agreed on a design that would be protective of that aquifer.

This is kind of a type log. It's one of COG's wells in the area. It gives you a pretty good

Page 57 1 indication of where the production is relative to our 2 injection zone in this area. Of course, as you know, 3 the groundwater in this area, usable groundwater, is --I mean potable water is restricted to the alluvium and 4 5 the Rustler, and then there is some water in the red 6 beds there. But this is up in this area (indicating) of 7 the section, within about 300 feet of the surface. 8 There also is production in the 9 Seven Rivers-Yates area. There is some production in the Delaware and in the very, very top of the Cherry 10 11 Canyon, except the reason why these stars are in green 12 is because in this area, that production is more than a 13 mile and a half away. It is not in the immediate 14 vicinity. Whereas, the stars that are in red, there is 15 production in those zones within the area of review, as 16 we mentioned earlier. 17 Also, there is some production in the Wolfcamp, away from the area of review, but this is, in 18 fact, where a lot of the new gas is anticipated to come 19 20 from for this plant. 21 So let's take a look at a couple of cross sections, if we can, kind of from the north to the south 22 23 and then east to west, and we can see what the geology 24 looks like. This is a northwest-to-southeast cross 25 section. You can see the top of the Cherry Canyon has

Page 58 got some fairly good low permeability. Those are shown 1 in brown zones, which are interbedded with some other 2 sandstones that have higher permeability and porosity. 3 Our proposed injection interval is located 4 here (indicating), between the bottom of the Cherry 5 Canyon and the top of the Brushy Canyon. 6 The Lusk West 7 Field has some pay zones that are about a mile and a 8 half away, but they're here below us in the very lower 9 portion of the -- well, the bottom of the Brushy Canyon 10 and really in the very basal or top -- basal portion of 11 the Brushy Canyon, top of the Bone Spring. 12 Looking east to west, we again see the same 13 kind of pattern. This is just a very regional kind of 14cross section, but you can get an idea of what -- we're 15 looking at injecting into a package of these zones that are interbedded with caprock and injection-quality 16 17 reservoir within this Brushy Canyon-Cherry Canyon area. And, again, the pay zones in the Lusk Field, which are 18 19 about a mile and a half or two away, are in this portion 20 of the Lower Brushy Canyon. 21 So if you look at kind of a composite log 22 that shows a proposed injection zone, here is our 23 proposed injection zone. We have -- again, that Lusk 24 production, which is not too far away, is downdip. And 25 then lower or below us -- the production that we have

Page 59 above in the waterflood is more in the basal portion of 1 the Delaware, up above these impermeable portions of the 2 lower -- I mean the Upper Cherry Canyon. 3 Mr. Gutierrez, based on your analysis of the 4 Q. geology -- the overlying geology and underlying geology, 5 is it your opinion that the injection zone would contain 6 the injected acid gas? 7 8 Α. That's a fundamental -- that's kind of a Yes. red flag that we start with when we are evaluating the 9 10 reservoir. 11 So based on your analysis of all the Ο. 12 cross-section wells in the composite log, your opinion is that that injection [sic] treated acid gas will stay 13 14 in the zone? 15 Α. That's correct. 16 Ο. Thank you. Now, the next two maps that you're going to 17 Α. 18 look at provide, at least, our initial basis for understanding what kind of reservoir we have in terms of 19 20 what is the total porosity that is available for us to inject into in the two primary zones that we're looking 21 22 at. 23 So this is the lower 200 feet of the Cherry 24 You can see that we have essentially an Canyon. 25 alignment north-south of some -- of the troughs and the

thick and thin spots of good sandstone, with greater than 10 percent porosity. In the area, we're looking at -- we're looking at approximately 110 to 115 feet for AGI #1, bottom-hole location, and about 105 feet or so of sandstone that has greater than 10 percent net porosity for the AGI #2.

7 This map here -- and I want to emphasize, 8 these maps, you know, were not just drawn using the 9 half-mile area of review, but really incorporating the 10 data from all of the wells within about a couple of 11 miles so that we could get a better idea of what the 12 trends look like in terms of thicknesses in the 13 reservoir.

14 Here you can see -- this is kind of our 15 sweeter spot (indicating). The upper 400 feet of the 16 Brushy Canyon gives us about 300 feet, roughly, of 17 good -- 10 percent or greater porosity in this zone. For the bottom-hole location for AGI #1 and the 18 19 bottom-hole location for AGI #2, what we're trying to do 20 is get into these two sweet spots with our well 21 location. Just to point one out, this well here to 22 23 our west (indicating) provides a kind of factor that we 24 wanted to stay away from, simply because this is a horizontal well. Here is the surface location 25

Page 61 1 (indicating), and it's in the basal portion of the Bone 2 Spring there, but it extends horizontally to the north. 3 And this is well below our injection zone, but we just 4 were wanting to stay mainly in the sweeter spots of the 5 reservoir, which are located to the east here. 6 And, Commissioner, you asked a guestion 7 about the testing of the wells to Mr. Stone. And. of 8 course, when we drill these wells, we're not only going 9 to use our normal logging program of some fairly 10 detailed geophysical logging of the wells, including FMI of the injection zone and caprock, and also coring of 11 12 those zones and then do core analysis to verify our 13 permeability and porosity and get a good understanding 14 of our -- to ground truth [sic] our irreducible-water 15 determinations for the area. But in addition to that, 16 we will do testing of the wells -- injection testing of 17 the wells with warm-back profiles, because as you 18 accurately pointed out, I mean -- and as Mr. Stone 19 mentioned -- these wells are critical to the -- and the 20 long-term viability of these wells is critical to the viability of the plant. So we will certainly be testing 21 22 those wells to confirm what has been our best 23 determination to date that they will be adequate to 24 handle this kind of volume. 25 So what about the structure? The figure on

the next slide shows the structure of the top of the 1 2 Brushy Canyon. You'll see it dips about one-and-a-half degrees to the south.' This is really no evidence of 3 4 faulting at this level in the area. And, you know, you 5 can see we're in a little bit of a canyon there in 6 the -- or a little depression in the top of the Brushy 7 Canyon, but it's generally pretty flat. And then this 8 little canyon (indicating) was probably going down from 9 the shelf towards the Delaware Basin.

10 Calculations that we did of the reservoir 11 area affected -- I think by now the Commission is used 12 to how we do these things, but basically we use the 13 available information on the reservoir conditions and 14 then our determination using some software -- the best 15 software we have available to us, either CSM GEMs or AQUAlibrium, to determine what the conditions of the 16 17 acid gas and what kind of area it's going to occupy in the reservoir. 18

19 Q. Mr. Gutierrez, you mentioned that you used the 20 available reservoir data. Could you just briefly 21 explain for the Commission what kind of data that is, 22 and, I mean, how much data we're looking at here to come 23 up --24 A. Well, we're looking at the data from all of the

25 wells that penetrate the injection zone, plus drill stem

Page 63 1 tests of those zones. And I'll show them. These two 2 slides are a good example. We took wells in the area 3 and did bottom-hole pressure trends for wells -shallower wells and deeper wells and wells within or 4 5 close to our injection zone, and this is where we got this kind of bracket of about 2,250 to 2,500 psi, if you 6 7 will, in our injection zone, what we anticipate 8 expecting.

9 And then we did the same thing with 10 temperature. We got a little wider band in terms of the 11 temperature. And you'll notice that we've assumed about 12 120 degrees in our calculations. The data would 13 indicate approximately 122 to 127, but what we have 14 actually seen in other wells in the Cherry Canyon there 15 indicates that it's a little cooler than that. And, in fact -- so that's why we've assumed 120. 16 If we used 17 122, it might be slightly larger, the amount of area 18 that would be encompassed by the plume but not 19 significantly.

Q. So, Mr. Gutierrez, with respect to both of these charts you've been showing us, the bottom-hole pressure trends and the bottom-hole temperatures, is each point on these charts, is that the individual well data point?

25 A. Yes, sir. Yes, sir.

Page 64 1 Okay. So, again, based on our reservoir volume calculations, we got a radius of about .36. 2 3 Actually, it was less than .37 miles after 30 years and about a quarter of a mile of -- per well. For each 4 5 well, you would add seven and a half. So in other words, if we were putting it all in one well, it would 6 have about a .37 radius after 30 years, but if we put it 7 in the two wells, each one will have about a quarter 8 mile of radius. 9

Again, this is one of the things that we 10 11 are proposing to do and that we have discussed with the 12 Division, that after the well is drilled, cored, logged 13 and tested, that we will come back -- we will rerun our plume simulation, so to speak, and then we will have the 14 15 best possible idea of what that is likely to be using 16 the actual data from the wells themselves. And 17 hopefully -- we try to be conservative. So I will hope 18 that what we actually find will allow us to have 19 actually more porosity than we currently are assuming. 20 This chart is impossible to read (indicating). It would be easier to read in your 21 22 application, but I want to point out that we noticed that we had put a wrong version of this chart in the 23 application originally. And in our pre-hearing 24 25 statement, we gave you a page to substitute. All the

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Page 65 1 calculations were correct. It's just that we were doing various simulations, and when we had the final one, we 2 just inserted incorrectly into the application. 3 So this was -- and the difference was a slight difference in the 4 I think the one that you have shows a slightly 5 MAOP. higher MAOP. But this is the correct one (indicating). 6 7 And the correct calculation was in the text. It was 8 just an error in what we put into the application. These two circles (indicating), again, show 9 10 what we anticipate to be the 30-year footprint. And, you know, again, I think one of the things that is 11 12 important to note is that, you know, we use this 30-year 13 number because it's typically, as Mr. Stone alluded to, a minimum kind of life span for these kinds of 14 15 facilities, and it's been what we have traditionally used in our evaluations of these wells, so we continue 16 17 to do that. So let's talk a little bit about the 18 19 general design of the AGI system. As you know, we have 20 been doing these wells now for almost 10 years, 11 21 years. We like to learn from our -- as the science 22 involves. And so we started -- you know, as this 23 Commission is well familiar, we modified the design at 24 the time of requesting permission to drill Linam AGI #2 25 because of the experiences that we had with tubing leaks

Page 66 1 in Linam AGI #1. And what we had come up with, based on 2 all of the work we had done, was that the area of the 3 tubing that was most at risk and of the casing was the 4 area immediately in the vicinity and immediately above 5 the packer.

So what we had come up with is a design 6 7 that encompassed, obviously, a CRA section, or 8 corrosion-resistant casing section, in which we set the packer, but then also a corrosion-resistant section at 9 the basal portion of the tubing string above the packer. 10 Now, what we have found is -- and that was 11 12 a design that we've used. We used it in the -- we used it in what was approved for Linam #2, which hasn't been 13 14 drilled yet, but we also did it in Red Hills, which has 15 been drilled and will be completed soon.

16 But what we found is -- as we started 17 really doing this work, we started thinking, okay, this 18 tubing -- for example, the 2550, which is this Sumitomo material that is corrosion-resistant material, in 19 three-and-a-half-inch tubing, this 2550 material costs 20 about -- the quotes that we get bring it between about 21 1,100 and \$1,300 a foot. Okay? So it's pretty 22 23 expensive pipe. And we've been looking at putting, you know, somewhere in the neighborhood of 300 to 500 feet 24 25 of that corrosion-resistant tubing at the basal portion

1 of the string.

And, you know, one day I started -- I was talking with one of our drilling engineers and reservoir engineers and then our metallurgist, and we were just talking. And all of a sudden, I said, Wait a second, guys. You know, when we've designed, we've designed a number of wet AGI wells, right?

8 And we use normal L-80 tubing, but we line it with fiberglass, the whole tubing, because we know we 9 have a wet stream going down all the time. And we've 10 designed and constructed a number of wells that way, 11 including the Jal 3 well for Southern Union, and we've 12 never had problems. We've operated them for a long 13 14 period of time. As long as you put the tubing together 15 correctly and you do it carefully and you have a good 16 quality control on your lining material, it's actually, you know, perfectly fine to put -- to use -- even in a 17 18 situation where you're mixing the acid gas with water at the surface. 19

20 And I said, Why don't we just line the 21 tubing even if it's a dry-injection well? Forget about 22 it. Don't even bother putting in corrosion-resistant 23 tubing only in the bottom. For the same price, we 24 can -- essentially, for the same price we have this 25 blended tubing string, we can have a tubing string put

Page 68 in that is lined with fiberglass all the way to the 1 surface, and you protect the entire tubing string, not 2 just the bottom 500 feet or so. 3 So that is a modification that we have made Δ 5 in the design, I think, which will essentially upgrade the design of the dry AGIs to meet the same conditions 6 7 that we have in a wet AGI, which, theoretically, you should never encounter in a dry AGI. But we all know, 8 9 based on Linam, that sometimes you can have a problem. 10 So I think it's a far better approach. And so that's the only real difference in this design that 11 It's more like a design for a wet AGI well. 12 there is. 13 Again, the annulus will be filled with corrosion-inhibited diesel fuel, like we have discussed 14 15 before, and we will also do downhole pressure and 16 temperature monitoring realtime on at least one of the 17 wells or possibly both of the wells. And that will give us a better idea what of the reservoir conditions are 18 19 during and for the life of our injection project. 20 0. Mr. Gutierrez, on that point, what are some of 21 the factors that would lead you to believe that only one of the wells would require this downhole pressure 22 monitoring? 23 24 Α. It's going to depend on how similar the 25 reservoir looks in the two areas where we actually wind

Page 69 up at the bottom hole. You know, the likelihood is .1 we're probably going to include it in both wells. 2 But 3 if the reservoir looks essentially the same in the two, it may not be necessary, but it may be that -- you know, 4 we haven't made a final determination on that, but we 5 6 definitely will have it in one. And in all likelihood, 7 we will probably have it in both. 8 0. And the determination on the similarity of the 9 reservoir would be based on running science logs and the evaluation of the reservoir that you do at the time you 10 drill the wells; is that correct? 11 12 Α. That's correct. That's correct. 13 0. Thank you. 14 Α. So we'd like to have that flexibility. 15 Here's the general schematic of the AGI 16 design (indicating). It's a general schematic. As I 17 explained to you, the wells are in Cline [sic], but 18 the -- and so actually -- the actual length of the 19 wells, because they are in Cline [sic], is going to 20 be -- or deviated, is going to be longer than the total 21 depth. But at least here you have just a picture -just cartoon of what the wells will look like. 22 A more 23 detailed design is provided here (indicating), which 24 gives us a kick-off point of 4,650 feet. That's where 25 we're going to kick off with the deviated well. So

Page 70 we're going to go and run our surface -- our conductive 1 2 casing about 50 feet or so, and then we're going to run 3 our surface casing to the depth below all of the fresh water in the area and the Capitan protection zone. 4 5 And then our intermediate casing is going 6 to be taken to just above that kick-off point, and at 7 that kick-off point, we'll take off at about a 27-degree slant in the two directions that we outlined on the map. 8 9 And then the well will be perforated. The 10 injection zone is roughly from 5,500 feet to 6,000 feet, 11 or 6,500, depending on what we actually encounter. So 12 let's just say 5,500 to 6,100 feet for the injection zone, and the wells will actually have a measured depth 13 14 of closer to 6,200 feet, total depth based on the slant. 15 One of the things that's also very 16 important that we discussed in detail with the BLM is 17 that in the wells, we're going to use -- in the portion 18 of the well that is deviated, we are going to use some 19 special centralizers on every joint of pipe so that we 20 can assure that we get a good cement job. Because 21 basically what happens, unfortunately, when you do a 22 deviated well is that as you run your casing, it lays up against the side of the borehole, and if you don't 23 24 separate that casing from the bottom of the borehole, 25 when you sequence and you pump your cement, you don't

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Page 71 1 get cement against that side of the casing. 2 So the way we deal with that issue -- and this has become an issue not just, by any means, on 3 4 injection wells but on production wells as well, that because there are so many more deviated and horizontal 5 6 wells now than there used to be, people have developed 7 some specific centralizers that are -- extra-strength 8 centralizers that actually hold the pipe centered in that deviated hole and enhance your chances of getting a 9 good cement job. 10 11 Of course, the zone that's shown in red 12 here on this diagram is the corrosion-resistant portion 13 of the casing. There we will use some 2535 or 2550 equivalent or -- you know, that's a trade name, but I'm 14 15 just saying we will use a corrosion-resistant casing 16 that has those properties in that zone where we set the 17 packer. 18 Obviously, also, we will run corrosion-resistant cement all the way from the base of 19 20 the well to at least 200 feet within the intermediate 21 casing, and then we will run standard cement above that. 22 That's been our traditional kind of design to assure 23 that we have both the injection zone, then the caprock, 24 and then into the intermediate section protected with 25 not only corrosion-resistant casing but also

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1 corrosion-resistant cement.

2 And this is an area that we've discussed in 3 extensive detail with the BLM because of the issues ' 4 associated with Capitan Aquifer.

5 So all the casing strings are going to 6 cemented to the surface, pressure tested and verified 7 using 360-degree cement bond logs. The deviated string 8 will be cemented in the critical caprock area and all 9 the way, as I mentioned, 200 feet -- approximately 200 10 feet into the intermediate casing with CorrosaCem or 11 Evercrete or an equivalent. I mean, those, again, are 12 trade names. It depends on whether you use Halliburton, 13 or Schlumberger or Baker. They each have their own 14 products, which are essentially similar, but they're named differently. 15

In the deviated interval that I mentioned are the centralizers. We're going to use additional and specific types of centralizers to aid in the cement job. And the casing and cement program is consistent with the BLM's guidelines in the area, as well as, obviously, the Division's requirements.

The groundwater conditions in the area, let's talk about that a little bit. There are only four freshwater wells within a mile of the DCP AGI. None of those wells are currently used. They were wells that

Page 73 were drilled in 1982 by Phillips Petroleum for 1 exploratory purposes to understand where the -- and I 2 don't really know what the purpose of their project was. 3 I think it may have been to look at potential water for 4 5 some project that they had going on there. But those 6 wells were never really completed as water wells that 7 are used, and they don't produce any water for 8 consumption. But they range from 1,190 feet to about a 9 total depth -- the deepest one, 350 feet. Three of them are more like 250 feet deep, and they're within the red 10beds. Of course, those will be well isolated by three 11 12 strings of casing. Here's where they're located, where 13 those three wells are located (indicating).

14 There are no farms or ranches out in that 15 There is no domestic production. Now, there may area. 16 very well be and I anticipate -- though I have not heard the specific plans for one, but I anticipate that the 17 18 plant will probably drill a water supply well for their 19 own domestic purposes at the plant, to have their flush 20 toilets and cafeteria or whatever they have that they 21 require fresh water for at the plant. 22 But in any case, if such a well is drilled, 23 it would be drilled probably to a depth of only about 190 to 250 feet, depending on the water needs at the 24

25 area and, again, will be properly completed and cemented

1 and will be in the zone isolated by three strings of 2 casing.

3 So let's summarize what these geologic factors are that assure the integrity and safety of the 4 5 proposed wells. There are no structural pathways like 6 faults or fractures that were identified in the area of 7 review. There are wells that are penetrating the injection zone, isolated in that zone, and with the 8 9 enhancements we've discussed with the Division, those 10 wells will be even better isolated, the ones that are 11 somewhat tenuous.

12 The caprock is a low-porosity interbedded impermeable zone that is an effective barrier above the 13 14 injection zone. The injection zone is vertically and 15 horizontally isolated from adjacent production zones, as 16 we have seen. The freshwater zones are isolated by both 17 the conductor and the surface casing, and the proposed 18injection pressure is well below the fracture pressure 19 of the reservoir and caprock. And the log analyses 20 demonstrate that we have a closed system. 21 Furthermore, the reservoir pressure is 22 sufficient that at that reservoir pressure and 23 temperature, we will be able to keep the acid gas in a 24 super-critical phase, which is a good thing.

So what DCP is requesting for the

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1 Commission to provide us in an order is permission to 2 drill, test and complete the AGI wells as specified in 3 the application and as modified by the discussions that 4 we have in this hearing.

5 We want to injection 15 million a day into 6 both of the wells, so a combined injection rate of 15 7 million a day. Now, Mr. Stone laid out the fact that 8 there is a possibility that there is a real benefit to 9 the redundancy that is supplied by these two wells. Our 10 goal is to use both of the wells simultaneously and 11 split the flow between them, because our feeling is that 12 using a single well for the entire flow may result in a 13 little higher than what we would like surface pressure, 14still under the MAOP but a higher surface pressure than 15we want to be compressing to all of the -- all of the 16 time, simply because of the resistance to flow within 17 the tubing itself.

18 But what is good about the system is that 19 while we intend to operate both wells at the same time, 20 we can -- for, you know, relatively short periods of 21 time, in the matter of, you know, certainly hours or 22 days or perhaps even weeks, we can operate with a single 23 So if we have a problem with one of the wells, we well. can shift over to the other with minimum disruption and 24 25 minimum chance of having to flare.

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Page 76 We'd like to have three years. I know typically the Commission has granted two years from the date of the order to complete the wells. As Mr. Stone has stated and has been made very clear to me, DCP's desire is to get this plant up and running by the second quarter of 2015. So, clearly, that's well within this three-year period.

But as he mentioned, you know, we have a number of issues, balls that are being juggled right now in terms of long-lead items for the plant, the final approval from BLM for the plant lease itself, those kinds of things. And so we would just like to have a little longer time period even though it is an intent to start sooner. So that's basically what we have.

15 I've got some additional -- about eight 16 slides that I would like to go over. Maybe we could 17 take a short break. I'd like to go over those, because 18 those are the slides that go over the Division's pre-hearing statement and what their conditions are and 19 20 evaluate those four wells closely and what we have 21 arrived at with the Division as an agreement going 22 forward.

CHAIRPERSON BAILEY: Then why don't we a ten-minute break, come back at 11:20, and you can go into those other slides?

Page 77 (Break taken, 11:14 a.m. to 11:23 a.m.) 1 (BY MR. RANKIN) Mr. Gutierrez, you indicated 2 0. before the break that you had prepared some additional 3 slides referencing the Division's issues and concerns of 4 the proposed conditions on an order. Would you mind 5 reviewing those for us now? 6 7 No problem. Ά. 8 0. Mr. Gutierrez, is this a hard copy of your 9 slides? This has been marked Exhibit Number 4; is that 10 correct? Yes, sir. 11 Α. Okay. On Thursday evening last week, we 12 13 received a copy of the Division's pre-hearing statement, which included an analysis conducted by the Division's 14 technical staff that pointed out some desired conditions 15 that the Division would like to see in the order, as 16 well as raising some concerns about four wells that are 17 located within the half-mile area of review. 1819 Subsequent to that time, we had a couple of conversations, and then on Monday afternoon, I met --20 21 myself and Mr. Jim Hunter from our office met with 22 Mr. McMillan and Mr. Goetze and Mr. Wade regarding these conditions. We talked about the technical details 23 24 involved. And subsequent to that time, after I had 25 consultations with DCP's project folks, we transmitted,

Page 78 1 through Adam, communications to the Division that, 2 generally, we were in agreement with some small modifications of what these requests were. I'd like to 3 go through, first of all, what the requests were from 4 5 the Division and what we have agreed upon. 6 The first one is, of course, something 7 that's going to be included, hopefully, in the new AGI 8 rules, which is an annual MIT. We have no problem with 9 that, and that would be what we proposed to do anyway. 10 So that was the first point that was raised by the 11 Division. 12 Second is daily monitoring of pressure data, diesel replacement, atmospheric H2S and safety 13 14 measures in place. In fact, the monitoring of all of 15 those parameters -- with the exception of diesel replacement, because diesel replacement is something 16 17 that only happens occasionally, that you may have to put 18some additional diesel into the annular space. But the 19 rest of those activities, the pressure -- the 20 temperature of injection, the pressure and temperature of the annular space and the sensing of H2S or potential 21 22 H2S releases are not monitored daily. They're monitored 23 continuously. Okay? So they're monitored 24/7, 24 continuously. So those are -- we don't have any problem 25 with that request. And, in fact, like I said, it's part

Page 79 1 of the normal operating procedures of the plant. 2 Q. Mr. Gutierrez, with respect to the diesel 3 replacement activities, just to be clear, has DCP agreed 4 to keep or maintain the maintenance log of the 5 replacement activities conducted of the diesel for the 6 annular space?

7 A. Yes, they have.

And I would propose and just note that, for 8 9 example, the one other well where we've done this 10 monthly reporting, which is Linam #1, because of the 11 issues we had with Linam #1, in that reporting, we not 12 only analyzed the annular pressure and temperature and 13 injection pressure and temperature and the injection 14 rate and provide that data to the Division on a C-103, 15 but on those very graphs -- or in these C-103s, if we 16 have had any kind of diesel-replacement activity or some 17 other modification of the well, that's also included in 18 that report.

19 So I would propose that here, in the 20 quarterly reporting that we provide to the -- that we 21 have agreed on with the -- with the Division, that in 22 addition to maintaining that log on the site, that if 23 there had been any kind of diesel-replacement activities 24 or anything like that, that would be noted on that 25 quarterly report when that occurred as well. So the

Page 80 Division would have that information not only if they 1 wanted to look at a log, but, you know, since it's key 2 3 to analyzing that data, we would include that in the 4 quarterly report. Okay? 5 And so the maintenance log for the diesel would 0. б be maintained and retrievable upon request by the 7 Division? 8 Α. That is correct. 9 Ο. Thank you, Mr. Gutierrez. 10 Α. And furthermore, I think I would emphasize that 11 we felt that monthly reporting was onerous for a well 12 that hasn't had any kind of a problem. I mean, given 13 the fact that we are, you know, collecting that data 14 daily and -- not daily but continuously and we're 15 immediately aware, we have alarms set -- later on, we'll talk about these immediate-notification parameters that 16 17 we're working out with the Division. So those all will 18 provide the ongoing monitoring of that. But then we 19 felt that quarterly was a more reasonable way of just 20 submitting that information to the Division. 21 Now, of course, if we noted that there was 22 any kind of an issue, we would be reporting that based 23 on whatever we agreed with the Division of the 24 immediate-notification parameters. But just a routine 25 reporting, since this is going to go on for

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30-years-plus, we would like to do that on a quarterly
 basis.

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3 One of the things that we talked about, was laid out by the Division, and has been the subject of 4 5 other orders we have discussed is that 30 days prior to 6 the start of injection -- and usually we'll do it even 7 before that, but sometime prior to the start of 8 injection, no less than 30 days -- we'll sit down with the Division, both the district office and, if so 9 10 desired, with Mr. Goetze or a representative from the Santa Fe Office and work out the immediate-notification 11 12 parameters and alarms for the annular pressure, 13 injection pressure, those kinds of issues.

14 The Division has requested, basically, that 15 happened twice, not only once prior to injection, but 16 then also, that 90 days after injection has begun and 17 we've got a better sense of how the well is operating, 18 to go and review those again and see if they need to be 19 adjusted and modified. And that's a normal thing we 20 would do anyway, and we'd be happy to do that with the 21 Division.

Furthermore, the Division has requested that those immediate-notification parameters be reviewed periodically with OCD but not less than once a year. And what I would suggest there and what we would agree

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Page 82 is, yes, we will review those with the Division as 1 needed, and then once a year, if there is -- and I would 2 3 propose that we could just do it as part of one of the 4 quarterly reports, that we would just say, Okay, we believe the parameters are fine going forward, because. 5 after about some period of operation, those parameters 6 7 really shouldn't change very much. 8 So unless there is a reason to change

9 those, what I envision is that once a year, at least, we 10 will lay out in that quarterly report: Here are the 11 notification parameters; we don't believe they really 12 need to be revised or changed. But we would consult 13 with the Division at that point and determine if they 14 felt it needed to be changed.

15 The approval to commence injection, the 16 Division requested that a condition be put on there that 17 we have to have an approved Rule 11 plan, and, of 18 course, we don't have any problem with that. That's 19 required even for the facility to start up. So we have 20 no problem with that.

Q. And, again, Mr. Gutierrez, just for clarification, that contingency plan would relate to the facility and the injection wells?

A. It is a contingency plan for the overall plant,including the AGI system. It wouldn't include the

1 gathering system, of course, but the plant itself and 2 the AGI.

Okay. To get to the meat of the issue that 3 4 the Division had, Mr. Goetze, in his analysis, which he will present, identified four wells, three active wells 5 6 and one plugged well, within the half-mile radius that either have no cement, apparently, across the injection 7 8 zone or less-than-adequate -- in the Division's view, 9 less-than-adequate records indicating where the top of 10 cement actually is in these wells. So I'd like to go through each one of the 11 wells individually, because they're a little bit 12 13 different. Again, three of these are active wells. Ι should say two of them are active wells. 14 15One is still classified as an active well, 16 but it's not an active well. I mean, it still has a tree on it, but it hasn't had any production for about 17 18 five years, and it is not TA'd or PA'd. So that well, while it's an active well in the context that it still 19 has its tubing and everything in it, it's not producing. 20 21 And then the fourth well is a plugged well, which was P&A'd in the mid-1990s and was last operated 22 23 by Phillips. 24 So let's take a look at where these wells 25 Here's our little plume map, if you will. These are.

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Page 84 1 wells are located here (indicating). There is the Lusk Deep Unit #8 here. This, by the way, is the plugged 2 3 well. We have the Delhi Federal #1 down here, which is 4 located towards the south and outside -- by the way, 5 again, just as a point of reference, the blue line is the 30-year plume, with 100 percent safety factor. 6 The 7 red line is the actual 30-year plume. You can see, these three wells are even outside the 100 -- or right 8 9 on the 100 percent safety factor line. This Gulf Federal #3 is at the edge of our 30-year injection 10 11 plume. 12 So even though the Division had some concern about the construction of these wells, they 13 14 recognize clearly that these wells are not really an 15 immediate issue but that they may become an issue as 16 injection proceeds down the road. 17 Ο. Mr. Gutierrez, just to be clear, the blue line which you said is a 100 percent line for injection 18 19 volumes, when you say 100 percent --20 100 percent safety factor, I said. So that's Α. 21 twice the injection volume. 22 Thank you. 0. 23 Α. Right. 24 So let's take a look at each of the Okay. 25 wells. Here's the Delhi Federal #1. This well has --

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Page 85 1 is a producer from the Strawn -- basically from the 2 This well has produced both gas and oil since Strawn. 3 the well was originally drilled. This was a heck of a well, frankly. This well produced -- flowed 500 barrels 4 a day when it was originally drilled. And as you can 5 6 see, the well is still producing a dozen barrels a day 7 of oil as of last year. It hasn't produced any gas since 2008. And it is producing a little more water 8 9 But this well is still a viable well and probably now. 10 will continue to produce for some period of time. 11 This well has a production string which is 12 cemented from about the bottom of the well to about 13 8,300 feet, and then it has a zone that was squeezed as a result of a casing leak at the depth of about 6,087, 14 15 which is near the base of our injection zone. But it appears not to have cement in the rest of this zone, 16 17 which would encompass a portion of the injection zone. 18 So this was the first well that was of concern to the 19 Division. 20 Oh, I hit the wrong button. I'm sorry. 21 The next well is the Lusk Unit #5. This 22 is, essentially, a well that is not really an economic 23 well anymore. As you can see, it hasn't produced any 24 oil since 2005. It is still producing gas, but it sure 25 as heck is not paying for itself. It's only producing

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Page 86 about 2 million -- it produced a little over 2 million 1 2 Mcf of gas in the entire year of 2013. So it's not much of a well at this point, and so we think that this well 3 is likely a candidate to be plugged within the next few 4 5 years anyway. And we'll talk a little bit about what we 6 think should be done about that well. It doesn't appear 7 to have any cement across the injection zone, with a top 8 of cement at about 9,800 feet in this well.

9 This well, the Gulf Federal #3, which is 10 the well I said had no production since 2009, produced only 219 barrels of oil in 2009, and it's just been 11 sitting there. So that well is not doing anything. It 12 13 is a well that should be TA'd and PA'd. And I don't 14 know. Maybe the Division has some further information 15 on this well. It may be -- we don't know if even the operator is a currently viable operator or not. 16 So this 17 well is definitely en route to be plugged at some point. 18 The last well, which was one that we had some -- a little bit more discussion with the Division 19 20 about, because, based on our calculations and based on 21 the calculations that were done and the records we have 22 of plugging, this well does have cement apparently 23 across our injection zone, but it's calculated. And 24 it's not -- there is no cement bond log. So we don't 25 really know how -- what the cement conditions are in the

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Page 87 1 well. And so the Division was still concerned about : 2 this well. And this, unfortunately, as luck would have 3 it, happens to be the plugged well. So if remediation 4 is necessary in this well, we will have to re-enter it 5 and squeeze off that zone, which is what we have 6 discussed with the Division.

Fortunately, unlike the previous nightmare wells that we dealt with on the Red Hills, this well does not have the casing pulled. So fortunately, we still have casing apparently in the hole, so hopefully we would not have the kind of issues in re-entering this well that we had on those.

13 So what would we do with these wells? We 14 just gave an example of one of the two -- one of the 15 four. This is the Gulf Federal #3, and this is what we 16 talked about with the Division. We said, Look, what do 17 we need to do to isolate our injection zone? This is 18the main concern that we have. Even though it's not an 19 immediate concern, it could be a concern down the road. 20 So what we have suggested and what we have 21

agreed upon with the Division is that we would agree to work with the operators of these active wells and/or the Division, if it turns out that one of these is an orphan active well, in assuring that the injection zone is isolated when the well is plugged or worked over,

Page 88 whichever comes first, or 15 years, whichever comes 1. 2 first. So we've got a long time before we get anywhere 3 near these wells to have a concern, but the Division 4 wanted to put a time limit on it. 5 We would like to minimize the disruption to the operators, and we want to minimize the cost of doing 6 7 So what we want to do is to be able to do this this. when the well is worked over, plugged, or 15 years, 8 whichever is sooner. 9 10 And in this case, this is an active 11 operating well. It does have a plug because -- this 12 well, for example, was plugged back, so it's now producing from -- from the Yates. It was plugged back 13 So it has one plug down at a depth of -- the 14 in 1981. 15 bottom of the intermediate casing, and then it's been plugged from -- we don't really know where the top of 16 cement is, but it's been plugged from roughly 7,500 feet 17 18 down to the bottom of the well. And there is a plug in 19 the well at that depth. This is when it was plugged 20 back to the Yates. 21 So here what we would do is go in, pull the tubing and drill out those two plugs and then perforate 22 and squeeze the casing and squeeze 100 feet or so of 23 corrosion-resistant cement above and below the actual 24 25 injection zone. And, of course, by that time, we will

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1 know exactly where our injection zone is. You know, we 2 provide our best estimate, but, of course, when we 3 actually complete the well, we know exactly where that injection zone is. So anyway, this would be a sample of 4 what we would propose would be done with these wells. 5 6 And this we have discussed with the Division, and they 7 would agree that this is an approach that achieves the 8 objective.

9 So what are the recommended actions after 10 drilling Zia #1 and 2 but prior to injection? That we 11 will implement the conditions that we talked about 12 earlier, items 1 through 7 in the OCD's pre-hearing 13 statement. We also said we will recalculate the plume 14 and safety zone extent with an updated model plume when 15we complete the wells. We'll re-evaluate what is 16 appropriate for these wells, but we already have agreed 17 with the Division that we've come up with an approach 18 that I think everybody can agree with.

19 So let's just summarize what we propose 20 specifically for each of these wells. There are three 21 active wells: Delhi Federal #1, Lusk Deep A5 and Gulf 22 Federal #3. So for those, we've agreed -- and the 23 Division has agreed with the language that we 24 proposed -- that we'll make a good-faith effort to work 25 with the operator of the well, or the Division in the

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Page 90 case of an orphan well, to enhance the isolation of the injection zone when the operator either works over the well, plugs and abandons the well or after 15 years, whichever is sooner.

5 For the three active wells, we would also 6 request that when any of these wells are plugged or when 7 the operator would propose to plug and abandon these wells to the Division, that the Division should make it 8 9 clear that as part of that plugging effort, that this zone should be squeezed and isolated. And, of course, 1011 we'll work with those operators. If we receive our 12 approval in this application, we will actually make 13 contact with those operators sooner rather than later 14 just to advise them of what the requirements are and try and see when things are going to happen. 15

With respect to the one orphaned or potentially orphaned well, I think we will work with the Division to figure out what the status of that well is and see if that's a well on that we'll need sooner action on just because of its current status and in maintaining compliance with the Division's rules.

The plugged well, we would like to do a couple of things. One is that we may -- we're going to search to see if we can find any additional records which would determine whether or not that cement is

Page 91 actually up to the 5,400-foot level or not, but if -- if 1 2 we can't get any further information, what we would 3 propose to do is, within the next 15 years, we will re-enter that well and drill out those plugs and 4 5 attempt -- the Division has recommended or suggested that we might drill out the plugs and then just run a 6 7 If indeed the CBL shows that there is cement CBL. 8 across the zone, we don't need to bother perforating and 9 squeezing. 10 But, frankly, once you drill out the plugs,

I'd rather just go in and perforate and try and squeeze.
And if I can get the cement in there, then it wasn't
properly cemented. If I can't get the cement in there,
then it is properly cemented. And I think we talked
about that with the Division, and they were fine with
that approach. They were just trying to save us a
little money.

18 Q. Mr. Gutierrez, you mentioned CBL. Is that a 19 cement bond log?

A. Yes, sir. Yes, sir. And, unfortunately, this
well did not have a cement bond log when it was
originally drilled.

Q. And I'd like for you, briefly, Mr. Gutierrez, to explain to the Commission why it is that a 15-year period is acceptable and protective in this case. Would

Page 92 1 you mind going back to your map and explaining to the 2 Commission -- or remind them of the location of these 3 wells and the distance from the point of injection? 4 Α. Yes. I mean, the wells are here (indicating), here (indicating), and here (indicating). This is the 5 6 100 percent safety margin after 30 years of injection. 7 The one well which is closer is right at the edge of our 8 30 years of injection. If we look at a 15-year of 9 injection period -- I mean, we haven't done the exact 10 calculation, but you can basically see that we would be 11 nowhere near these wells after 15 years. Now, actually, 12 the closest well, this Gulf Federal #1 -- let's see -is this well, which actually is likely to be dealt with 13 14much sooner than 15 years anyway, because it's the well 15 that should be in current T&A status and probably should 16 be plugged sooner rather than later, not because of this 17 project, just because that's what's required by the Division's rules. 18

19 0. And with respect to -- at the time when 20 remedial action is taken with respect to these wells, 21 whether it's during a work-over event or some other 22 trigger event, or within the 15 years, is DCP agreeing 23 to conduct reasonable and prudent remediation as 24 directed by the Division at that time? 25 Α. Yeah, as part of the plugging program, in the

1	Page 93 event that the well's being plugged, or as a separate
2	squeeze job if the well is just being worked over.
3	Q. Now, one other thing I wanted to just mention
4	or discuss with you, Mr. Gutierrez, is during the break,
5	I had the opportunity to speak with the Division's
6	counsel, and they indicated he indicated that the
7	Division would their preference would be to have
8	bottom-hole temperature and pressure monitoring for both
9	the Zia wells, AGI wells. Is that something that DCP
10	would agree to do in this case?
11	A. Yeah. I've discussed that with DCP, and they
12	would agree to put it in both. I mean, we don't
13	really I don't know that it's absolutely necessary
14	from just the reservoir-data perspective, but we don't
15	have a problem with that. And it will help to monitor
16	the operation of the wells, so we would agree to put the
17	bottom-hole pressure and temperature measurements or
18	monitoring in both of the wells.
19	Q. Mr. Gutierrez, just to summarize your testimony
20	today, is it your opinion that the design the
21	proposed design of the two acid-gas injection wells that
22	are part of this application will enhance the
23	reliability of the injection and the overall functioning
24	of the proposed gas-processing facility?
25	A. Yes.

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Page 94 1 And in your opinion, will the proposed Q.: 2 injection pose any threat to underground drinking water 3 or other freshwater sources in the area? Ά. Absolutely not. 4 5 And is it your opinion that the granting of Q. DCP's application will further the protection of human 6 7 health and the environment? 8 Yes, because it will reduce emissions and Ά. 9 chances of flaring and permanently sequester those GHGs. 10 Q. And GHG being greenhouse gases; is that right? 11 Α. Yes. 12 Mr. Gutierrez, is it your opinion that the 0. 13 granting of DCP's application will prevent waste and 14 otherwise protect correlative rights? 15Α. Absolutely, because you won't be flaring gas, 16 and we're not going to be affecting negatively any production in the area. 17 18 Ο. And will it also be meeting additional accepted demand in production? 19 20 Α. Yes. 21 Mr. Gutierrez, were Exhibits 1 through 3 either 0. 22 prepared by you or under your direct supervision? 23 Α. Yes; they were. 24 Madam Chair, I'd move to admit MR. RANKIN: 25 Exhibits 1 through 3.

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Page 95 Q. (BY MR. RANKIN) And Exhibit 4, is that correct, 1 Mr. Gutierrez? 2 3 Α. Yes. Exhibit Exhibit 4 is this presentation (indicating). 4 5 MR. RANKIN: Move to admit Exhibits 1 through 4. 6 CHAIRPERSON BAILEY: Exhibit 1 as modified 7 8 and amended? 9 MR. RANKIN: Correct, Madam Chair, as 10 modified and amended based on today's testimony. 11 CHAIRPERSON BAILEY: And the supplemental 12 corrected page that was sent to the Commissioners? 13 MR. RANKIN: That's correct. The page 7 14 which is replacing Table Number 1, which was provided 15 with DCP's pre-hearing statement. 16 CHAIRPERSON BAILEY: Any objection? 17 MR. WADE: No objection. 18 CHAIRPERSON BAILEY: Then they are 19 admitted. 20 (DCP Midstream, LP Exhibit Numbers 1 21 through 4 were offered and admitted into 22 evidence.) MR. RANKIN: With that, I pass the witness. 23 24 CHAIRPERSON BAILEY: Let's break for lunch. 25 Come back at 1:15 sharp, and then we will begin

Page 96 cross-examination and questions. 1 2 (Break taken, 11:53 a.m. to 1:10 p.m.; 3 Mr. Brancard not present; Ms. Bada 4 present.) CHAIRPERSON BAILEY: Mr. Wade, I think it 5 6 was your turn for cross-examination. MR. WADE: And the OCD does not have any 7 questions for Mr. Gutierrez. 8 9 CHAIRPERSON BAILEY: Okay. Mr. Warnell? CROSS-EXAMINATION 1011 BY COMMISSIONER WARNELL: 12 Bear with me here for a second, please. We Q. went through that presentation so quickly. I think I've 13 14 got some questions in here. I've got a lot of little 15 asterisks or marks, meaning maybe I had a good thought, 16 so let me share a few of them with you. 17 Α. Yes, sir. Mr. Gutierrez, please, how do you define your 18 Ο. 19 injection area, I mean, as far as permeability and 20 porosity, or do you have a handle on that? 21 Yes. Basically, we do it in a pretty Α. 22 traditional geologic-analysis point of view. What we do 23 is we identify the potential injection zone based on logs and any core data that may be available. It's 24 25 usually not. It's usually just geophysical logs or

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Page 97 1 maybe -- and then -- so we gather all the logs that 2 penetrate the potential injection zones that we're 3 looking at, and based on those logs, we do analysis to determine the porosity. You can't really get very good 4 5 permeability data from the logs, but you at least get 6 pretty good information on porosity. 7 And so then, based on that analysis, we 8 typically will take a certain relatively arbitrary 9 cutoff, depending on what porosity range we see for that 10 zone. And in this case, we used greater than 10 percent 11 porosity. 12 And then we identify and basically tabulate -- for all of the wells that we have in the 13 14 area, for all the control wells that go to the injection 15 zone, we tabulate the thickness of those zones that are

16 greater than 10 percent porosity, and then we do an 17 isopach map on that. Then based on that, we figure 18 out -- also on the logs, we calculate our best estimate 19 of irreducible water content. And then what we do is 20 just use a radial model from these wells to basically 21 fill up that pore [sic] space in the area. 22 Q. So you have no core data to back up

23 permeability or --

24 A. (Indicating.)

25 Q. What is your target permeability? What kind of

1 permeability?

A. Well, it depends. Usually, you know, if we get anything north of 10 or 15 millidarcies, we're usually in pretty good shape. But we do look for -- the permeability data we have found is quite variable anyway in these zones, because you don't really know diagenetically if some portion would be affected and another portion not affected.

9 So what we do to really try to get a handle 10 on it -- we do what we can with the data that we have 11 when we prepare an application, but then prior to 12 operating the wells, when we drill the wells, that's why 13 we do -- what we do first is we typically log the hole, 14 and then based on the results of the log, we pick points 15 for cores. And then we go back in and do sidewall cores 16 throughout the injection zone and the caprock, and then we send those off for analysis from Weatherford or 17 18 someone like that, and then we get those actual data 19 back. And then we do the same process that we did 20 before, but we do it with better data.

Q. I guess what's bothering me is you do the calculations for your plume, but without any handle on permeability. And it seems to me like that would be very dependent upon the permeability of your injection formation.

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Page 99 1 Well, what's more dependent on the permeability Α. 2 is how rapidly one of those zones may be able to take 3 the gas -- the TAG or not take it. What is a larger 4 controlling factor of the ultimate extent of the plume 5 is how much available space there is that can be used in 6 the reservoir to fill it up. But, yes, clearly, if you 7 have some -- the thicker and the greater amount of 8 porosity that you have, the less expansive the plume is 9 going to be, basically. 1.0 But, yes, permeability is an issue, but 11 there is just no good way to get a handle on it very 12 effectively usually with the data that are available 13 until you actually drill it and test it. So it's a risk 14 every time that you drill the well. You can run into a 15 situation where the permeability is not as good as you 16 anticipate. And where it tends to be more of a problem 17 is not so much in the volume that you're going to be 18 able to inject but whether you're going to be able to

19 inject it at a pressure that is under the maximum 20 allowable operating pressure.

21 Q. Okay. Bear with me.

22 BLM. I've got "100 percent BLM." Any 23 state or land minerals associated at all with this 24 project?

25 A. No. No.

Page 100 1 Ο. It's all BLM --2 Α. Yes, sir. 3 0. 100 percent BLM? 100 percent BLM. 4 Α. 5 Q. Another question about permeability. Will you 6 core as you drill, or do you do sidewall cores? 7 Α. We're going to do sidewall cores. 8 0. You testified at one time, "one of our drilling 9 engineers and reservoir engineers." When you said that, 10 are those engineers that are your employees? 11 Α. They're contractors. No. 12 They're contractors? 0. 13 Α. Yes, sir. 14 Ο. How many people in your company? 15In my company? We've got about 14 people. Α. 16 My mind is wandering a little bit. Excuse me. 0. 17 So we talked a bit about cement bond log, cement evaluation logs. You're talking about the newer 18 19 technology, the spherically focused, the 360-degree 20 ability to look at the bond log? 21 Α. Yes, sir. The BLM, by the way, requires that. 22 17-and-a-half-inch surface string, I believe. Q. 23 Is that what I saw in your well sketches? 24 Α. Yes. 25 And something that caught my eye here is, I 0.

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Page 101 believe you've got your surface pipe set at 250 feet? 1 2 Α. Yes. And there was one of those four offset wells 3 Ο. where -- no. One of the water wells that you mentioned, 4 where they were 300 -- maybe two of the water wells, 350 5 foot deep. 6 7 Α. Yes, sir. So why would you set your surface string at 8 0. 250? Wouldn't you want to set it at 350 or greater? 9 10 Α. Because from the records that we saw of those wells, they encountered water, but they didn't encounter 11 12 water that deep. I mean, by the time they got into that 13 portion of the Rustler, it wasn't producing very much 14 water. But, I mean -- and they're not wells that are 15 even being actively used in that area. But, I mean, we 16 would -- we typically -- you know, we say that it's 250 17 feet. Ultimately, we may -- what we try to do is get 18 through all of the Rustler and set the surface casing 19 below any freshwater zones in the Rustler, even though 20 much of the water in the basal portion of the Rustler is getting pretty salty anyway. 21 22 0. You testified or mentioned something about 23 diesel replacement. There was a problem with diesel

24 replacement. Could you expound on that?

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A. Sure. Not a problem with diesel replacement,

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Page 102 1 but we said that we would report if there were any 2 diesel-replacement activities. And let me tell you what 3 would cause you to have to replace some diesel. Every time you do an MIT, right, you need 4 5 to bring that annular pressure down to zero, and then 6 bring it up to 500 pounds. The only way we can 7 manipulate that annular pressure is by pumping in or drawing out diesel. So, ultimately, every time you do 8 9 an MIT, you take a little bit of diesel out; you put 10 some diesel back in. 11 And, of course, I didn't raise this issue, 12 but if you were ever to work-over the well, you have to 13 remove all of that diesel, of course, and then put it 14 all back in. But it's more to deal with topping up the 15 diesel after you do an MIT. 16 And you mentioned several times about "active 0. 17 wells." What is your definition of an active well? 18 Α. My definition of an active well is a well that is actively producing or is in a condition where it 19 20 could produce. 21 0. So reporting production? 22 Α. Yes, sir. Thank you. That's all the questions I have. 23 Q. 24 CHAIRPERSON BAILEY: Commissioner Balch? 25 COMMISSIONER BALCH: I've got a few

Page 103 questions as follow-up on Commissioner Warnell!'s 1 2 questions about the coring. 3 CROSS-EXAMINATION 4 BY COMMISSONER BALCH: 5 These wells are probably a couple million Q. dollars each, I guess? 6 They're more than that. They're 7 Α. Yeah. 8 probably closer to about \$4 million each. 9 Q. Each? Yes, sir. 10 Α. 11 And you're still looking at a relatively small Q. 12 percentage of the overall project running [sic] into 13 these wells? 14 Α. Yes, sir. 15 Compared to a facility of half million dollars? Ο. 16 Yes, sir. Α. 17 Q. How many sidewall cores do you plan on taking 18 do you think? 19 Α. We usually try and take -- in an injection zone 20 like this one that's 500 feet, we'll probably wind up 21 taking 60 to 70 sidewall cores, something like that. 22 0. Do you think you'll get enough information from 23 that? Would there be maybe -- well, it's rig time to do full core? 24 25 Α. It's not just rig time. It's also picking the

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Page 104 point where you're going to start to make sure that you 1 catch what you want to catch, you know. 2 3 0. Right. And you're not sure -- you're not particularly sure enough where the lithology is going to 4 start to --5 Α. Exactly. And so that's why we do it that way. 6 You're going to have the first well drilled --7 Ο. Α. Yes, sir. 8 -- before you drill the second well? 9 Q. Yes, sir. Α. 10 So you would know, potentially, where you would 11 Ο. 12 start for a full core. Think -- to me, it seems like 13 you'd want to understand that formation as best you can. 14 I don't know if that's something you would consider or 15 not. Similarly, for logging, what are the 16 logging plans? 17 We do a full triple combo, and then we do an 18 Α. FMI across the caprock and the injection zone. And then 19 20 we also do a log that we can -- sonic log. 21 Ο. Shear sonic? 22 Α. Yes. 23 Ο. Okay. That was my question. I wanted to make 24 sure you were going to get that detailed lithologic --25 Α. Absolutely.

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Page 105 1 -- understanding that you get less shear Q. 2 sonic --3 Α. Yeah. So you're going to operate these wells, and 4 0. 5 you're going to try and put half -- half the TAG into each well? 6 7 Α. That's the plan, yes, sir. 8 0. So a typical day of operation is this -- 50/50? 9 Yes, sir. Α. 10 And the only time you'll be 100 percent is if Q. 11 you were working-over or doing something with one of the 12 wells? 13 Α. Yes, sir. 14 That'll be for the whole duration of the Q. 15 project? 16 Α. That's correct. 17 Q. And that reservoir pressure and temperature, 18 your CO2 is going to be super critical? 19 Α. Yes. 20 I was pretty sure of that because you were Q. 21 describing the liquid barrels, but I wanted to make sure 22 that was the case. 23 Α. Yes. 24 Q. What's the -- what is your estimate or 25 understanding of the current reservoir pressure? Is it

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Page 106 1 under pressure? We don't believe it's really under pressure. 2 Α. It seems to be normally pressured. 3 And you think that -- what sort of pressure do 4 0. 5 you expect to see at the end of 30 years? Based on our knowledge of that zone and what's 6 Α. 7 happened in other places, we anticipate that -- to be 8 honest, I don't have a good sense of exactly what the 9 pressure's going to be after 30 years. We have seen some injection wells, waters wells, in those zones that 10 11 have injected water for 20-plus years, and the 12 injection -- and the reservoir pressure is elevated 13 about 15 percent or 20 percent. And it is -- and it tends to drop off pretty quickly when you stop 14injecting. 15 16 Are they pushing water into those wells, or is 0. 17 it dropping down? 18 Α. Pushing, yeah. 19 Q. Pushing? 20 Α. Yeah. 21 Do you know what kind of range of values for 0. 22 those injection pressures? 23 I think they're running roughly around 5- to Α. 24 700 psi at the surface. 25 0. And you're going to go around to 1,200?

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1	A. Probably. We're going to go with whatever is
2	the minimum pressure it takes to put the stuff away.
3	Q. So we've talked about your simulation before.
4	You're using a GEM module, or CMG?
5	A. We use that, and we also use can AQUAlibrium.
6	We use them both. And we usually compare the two. And
7	AQUAlibrium tends to be a little more conservative than
8	GEMs, so that's what we end up using most of the time.
9	Q. Okay. So on your GEM model, it looks like
10	there's kind of one-dimensional modeling. That's why
11	you have the radius
12	A. Yes, sir.
13	Q instead of an amorphous plume shape?
14	A. Right.
15	Q. Are you using any of the radioactive components
16	that CMG has available, the reactive transport?
17	A. Well, we have used some of those really for
18	more kind of almost research type of projects, but, you
19	know, typically we just don't have the reservoir data in
20	these, like, declined curves or in these zones, because,
21	obviously, they're zones that haven't been we look
22	for zones that are not producing and haven't produced.
23	Q. So you're going to sample the reservoir fluid,
24	the waters that
25	A. We are, indeed. Yes, sir.

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Page 108 1 Q. So you would have -- you would have enough 2 information to be able to do reactive transport modeling? 3 Right, although most of -- a lot of the work 4 Α. 5 that I've been looking at in the whole AGI arena shows 6 that, you know, in terms of that interface where those 7 reactions take place, that it really affects a 8 relatively small portion of that overall plume. Most of 9 it stays as a phase-separated fluid. 10 I'm not sure I agree with that. I think a lot Q. 11 of it goes into residual. I mean, there is a lot of --12 a lot of it gets stuck in the cores and residual water, 13 for example. 14 Oh, yes. Yes. Yeah, but as opposed to Α. 15 actually dissolving in the water. 16 Q. Right. 17 Α. That's what I'm saying. 18 Q. Okay. 19 You mentioned that the nearby Brushy Canyon production was up higher than your reservoir, about a 20 21 mile and a half away. Which direction? 22 Α. It's towards the southeast, and it's actually 23 below our -- it's not above. 24 Q. It's also downdip stratographically? 25 A. Yes, sir. Yes, sir.

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Page 109 On the type log in your presentation, I was Q. 1 wondering if you'd be able to identify with some of the 2 secondary seals. Do you have that handy? 3 Α. 4 Yes. 5 0. I'm looking at this one. Α. Oh, okay. 6 It might help the other Commissioners if it was 7 Ο. 8 on the screen. 9 Α. I can put it up on the screen. 10 MR. RANKIN: Mr. Gutierrez, Commissioner Balch is referring to Exhibit 2; is that correct? 11 12 COMMISSIONER BALCH: Exhibit 2, yes, somewhere around the middle. 13 14 THE WITNESS: I know which one he's looking 15 for. 16 MR. RANKIN: It's entitled "Stratigraphy 17 and Lithology of Producing Zones Above and Below 18 Proposed Injection Zone"; is that correct? 19 THE WITNESS: Right. That's right. 20 I believe it's this slide. Now, when you 21 say that you're asking about the secondary --22 (BY COMMISSIONER BALCH) What would be the Ο. 23 first -- if it were to get out of the primary seal, 24 where would it go? Where would it be able to stop? 25 Α. Well, if it was to get out of the Upper -- that

Page 110 1 : low-permeability zone in the Upper Cherry Canyon, it would go into the Delaware. 2 3 And there is some Delaware production -- I 0. 4 think that Gulf Federal Fee is producing from the 5 Delaware? It's producing from the Yates and Seven Rivers. Α. 6 Oh, it's higher up? 7 0. 8 A. Yeah. It's even higher up. 9 Anything in between? Looks like dolomites, Q. 10 limestones. 11 Α. Yeah. I mean, I don't think it would -- I 12 mean, there are some relatively low-permeability zones, 13 but not continuous zones in that section of the 14 Delaware. So it could make it -- if it got out of the 15Cherry Canyon, which we don't think it will, I mean, my 16 sense is it would go to the Delaware. 17 And is there any potential production within a Q. mile or two in the Delaware? 18 19 Α. Not that -- no. It's more -- it's actually 20 more than two-and-a-half miles away. And it has been 21 tested in this area, and it's tested wet all the time. 22 0. Tested wet? 23 Α. Yeah. 24 And then the Yates-Seven Rivers is the Yeso and Ο. 25 stuff [sic]?

		Page 111
	1	A. Yes, sir.
	2	Q. That is there is some production there?
	3	A. Yes, there is.
	4	Q. And there could be, potentially higher up in
	5	that area?
	6	A. It's pretty old production. I think it's
	7	the Yates-Seven Rivers has been pretty well produced in
	8	that area. I don't think there would be anything new in
	9	that zone.
	10	Q. So going back a little bit to your modeling, in
	11	the absence of a three-dimensional plume model I was
	12	looking at this last night and trying to visualize the
ļ	13	three-dimensional shape. I imagine the plume would go
	14	into based off your cross sections and your
	15	isopachs I think it would be useful for me, at least,
	16	to have your net porosity isopach hung on the base of
	17	the of the primary seal
	18	A. Yes.
	19	Q for overlaying on the contour map on the
	20	primary seal, just for trying to visualize where that
	21	plume is. Because I imagine, at least from my
	22	understanding, is that there's going to be a little bit
	23	of a barrier somewhere less than quarter of mile to the
	24	west of those two wells where the CO2 is probably not
	25	going to go much further

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Page 112 1 Α. That's right. -- in that direction. Ο. 2 3 Α. That's right. It will instead probably go up towards some of 0. 4 those thicker, more porous zones. 5 I would agree. Α. 6 7 So instead of your -- your Venn diagram, I 0. imagine more of an oval, perhaps trending a little bit 8 9 more north. It could be, yes. And, obviously, if you look 10 Α. at the -- and that's the reason why, when we drill the 11 12 wells and do the core analysis, we go back and try to remodel that, although it's not a true three-dimensional 13 But we try and take in consideration, you know, 14 model. 15 the thicker zones. It's kind of a balancing thing. You know, when you get a thicker porous zone, you tend to 16 have a little bit better permeability in that zone, too. 17 18But, you know, the zone, if it's thicker 19 and has more porosity, it tends to limit the areal 20 extent of the plume. In reality, the real -- it's much 21 more complicated than it would seem initially. And I know we simplify it because of the data constraints that 22 23 we have. But, I mean, in reality, what we do is when we actually do the logging and the coring, then we pick --24 25 we don't just shoot the whole injection zone. We

Page 113 actually try and pick the zones that are better within 1 . there. And that's an advantage in that there really are 2 primary seals throughout even our injection zone. 3 And so we end up kind of stacking the stuff up in between 4 the less permeable layers. 5 6 How much of that net pay do you think you're Ο. 7 going to perf? 8 Α. We'll perf everything that looks good in our 9 well, yes. And you don't anticipate you have to do any 10 Ο. 11 fracture stimulation perf --12 Α. Yes, sir. Well, we'll probably acidize it to 13 clean up the perfs. 14 Switching gears, let's talk a little bit about 0. 15 your tubulars. 16 Α. Yeah. 17 Is that a very expensive -- I guess that's some Q. 18 kind of a very expensive stainless? 19 Α. Sumitomo 2550 is a chromium-nickel blend alloy. 20 Q. It's solid? It's not a coating? 21 Α. Not a coating. 22 It's solid? Ο. 23 It's solid. Α. 24 Coatings get scratched. Q. 25 Α. Yeah.

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	5 (1)
1	Page 114 Q. And everything inside might as well be exposed?
2	A. That's right.
3	Q. And you're going to stab the packer with that?
4	That's what's going through the packer?
5	A. No. It was our intent was to have what
6	we yes. I mean, we're going to have a section of
7	that right in the packer. But then as I was trying to
8	explain, we decided that rather than having 500 feet of
9	that go up, what we were going to do is line the entire
10	tubing.
11	Q. Which is my next question, that fiberglass
12	liner. Is that something that's produced with a pipe,
13	or something that's used after the fact?
14	A. No. It's well, is it I'm not certain. I
15	believe it's added after the fact, I mean, in terms of
16	the manufacturing process. When you buy it, it's
17	already sold as a lime product, but I don't know if, in
18	the manufacturing I'm assuming in the manufacturing
19	process, they have to add it later.
20	Q. So is it like a sleeve or a coating?
21	A. It's a sleeve, really. It's a sleeve that is
22	essentially adhered.
23	Q. Do you know how thick that sleeve is?
24	A. If I remember it's been awhile since we used
25	it at Jal, but it's about a millimeter thick, about a

1 millimeter thick.

2 And how does that handle with the joints? 0. 3 Very carefully. We have to -- you have to be Α. very careful at the joint, because you use a flush 4 5 joint, you know. And what you want is -- the real 6 problem with that -- where anyone has had problems with 7 that -- fiberglass, right -- is because the joints have 8 been overtorqued. And then you get a little bit of 9 separation on that fiberglass, and then you actually --10 less than a corrosion issue, what happens -- what I've 11 seen happen even with a -- I haven't seen it happen in my well, but I have heard of where actually this 12 13 fiberglass delaminates inside the pipe and then 14 collapses, and actually you wind up with a blocked 15 tubing. You've got to go out and rework the tubing. 16 But, you know, it is pretty standard, and 17 they've gotten a lot better with their lining material 18 and the technology. But it is absolutely crucial at the 19 joints. 20 And here's what we do to deal with that. 21 We typically hire a company that is called Gator Hawk, 22 and they have a device that, on every single joint, it 23 pressure tests -- first of all, you have to use a very 24 specific torque wrench. You don't just, you know, grind 25 them up. You have a very specific torque wrench. And

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Page 116 1 the casing guys and the liner guys are out on site, and 2 they are overseeing the torquing of each individual 3 joint.

But then beyond when we torque the joint, we put this Gator Hawk device on it, and it tests it to 3,500 pounds. It tests that joint before it goes in the hole. It's a water test, basically. And then, you know, we're certain that we've got a good joint and that we've got a good joint at the torque specs that the liner manufacturer has.

And like I say, we have the -- the well in which -- that has had the longest operation where I have used that material is this Jal #3 well, which has now been injecting for about eight or nine years, and we haven't seen any problem with that.

As a matter of fact, it's kind of 16 17 interesting. E. L. Gonzales, from the district, who is 18 now gone, he was pushing us all along. We had always 19designed our wet wells with this kind of lining, and he 20 was saying, Well, why don't you do that for dry wells? 21 And we used to say, Well, you know, we really don't think it's necessary, you know, as long as the stuff is 22 properly dehydrated. But then after we had this issue 23 24 with Linam, I started thinking, well, it might not be a 25 bad idea to go that route. So, you know, we kind of

Page 117 1 migrated from -- you know, you would have a certain 2 amount of probably better protection in the ideal world if you ran 2550 for the whole string, but then -- ' 3 Half million dollars? 4 Ο. Then it's -- in this case, it would be 5 Α. No. about \$6 million just for the tubing. 6 7 So DCP will hire out, and they'll have Q. 8 specially trained people that have experiences with 9 this? 10 Α. Absolutely. Absolutely. 11 Q. I just wanted to make sure. 12 So downhole pressure and temperature, are 13 you doing just a flood [sic], or are you doing a 14 distributed system all the way up? 15 Α. We'll do a distributed system to monitor it 16 when we do -- throughout the entire injection zone when 17 we do the injection testing. But in terms of the 18 permanent downhole monitoring, we will do it only at 19 the -- at the -- basically, at the base of the well. So what we're going to have is -- we'll have annular 20 21 pressure, and we will have injection pressure and 22 temperature at the surface. Okay? And then downhole, 23 we will annular pressure and temperature at the location 24 immediately above the packer. 25 Q. A little poke-through [sic]?

Page 118 1 Α. That's exactly right. Baker makes the piece, and, basically, it's about this long (indicating). 2 It. 3 costs about a hundred grand for a piece of pipe this 4 long (indicating). And then it's got a special port on 5 it that goes -- and, you know, I was kind of leery about this, because in my mind, it's, all right, you made a 6 7 connection now between the annular space and the inside of the tubing, but there is no other way to monitor what 8 9 is going on in the reservoir down there without that. 10 So, basically, there will be one sensor 11 placed immediately above the packer in the annular 12 space, which will give us annular temperature and 13 pressure in the diesel, basically, and then there'll be 14this little port that goes -- and the sensor is just 15 inside the zone, and it's monitoring the pressure and 16 temperature -- essentially, bottom-hole pressure and 17 temperature right at the packer. 18 Ο. So you may be curious or you know this already, 19 but you can get a continuous fiber-optic cable? 20 Α. That's what we're using. 21 0. And you can measure DTS at any point in the annular space all the way between the bottom and the 22 23 top, any interval you want. 24 Α. For the pressure. Yeah. And Baker has 25 mentioned that to us, and, you know, that might be a

Page 119 1 consideration. You know, we felt that with having it at 2 the top and bottom, that would be adequate. And then just rely on keeping track of the 3 Q. 4 pressure in the annular space to make sure you're not losing fluid somewhere? 5 Well, that's what we're doing all the -- we do 6 Α. 7 it all the time anyway. Even when we didn't have bottom 8 hole -- the first well that we have completed or in the 9 process of completing that has that is the Red Hills AGI 10 #1. And so we don't have a lot of experience with that. 11 What we have done is we've measured and 12 monitored annular pressure and temperature at the 13 surface. And really that's kind of the 14 state-of-the-art. And most people, that's all they do 15 in these injection wells, and monitor it. And we find 16 if you keep good track of it -- and that's why it's 17 important to collect this data continuously. And as we have seen with Linam AGI #1, once you establish those 1819 parameters and you are looking at that, you can spot 20 pretty quickly if you've got a problem. 21 So the main advantage of a distributed pressure Q. 22 and temperature system is that the fiber optic goes all 23 the way? 24 Α. Yes. 25 Fiber-optic tube --Q.

Page 120 1 Α. Right. 1 -- actually comes on a spool. 2 Q. 3 Α. Right. If you do have an issue, you know within a 4 0. 5 foot --Α. 6 Right. -- where your problem is. 7 Q. Α. 8 Exactly. 9 Q. I'm not sure it's terribly expensive, but they 10 use -- the primary application right now, besides some of the experimental work being done on CO2 injection --11 12 Α. Right. 13 -- is, in California, they're using them for Q. 14 measuring temperature in steam injection --15 Α. In geothermal wells, right? 16 Well, steam injection --Q. 17 Oh, steam injection. Α. 18 0. -- for heavy oil. 19 Α. Oh. 20 It's out there. Q. 21 And just a question. Maybe I'm not supposed to Α. 22 ask questions, but I'm curious. Do you know the 23 manufacturer? Is that a Schlumberger product? 24 Q. It's a Schlumberger. 25 Α. Okay.

Page 121 I didn't want to say because I'm not trying to 1 0. 2 sell their stuff. 3 I understand. I understand. Α. 4 Ο. Is there a reason why you don't want to run the 5 corrosion-resistant cement to surface? 6 Α. Yeah, because it's just not necessary. It's 7 expensive, and it's difficult to handle. Okay? Because 8 the cement -- it's not like normal cement that you kind of can mix it on site. It comes -- you've got to know 9 10 your volume and exactly what you want. And then it comes out, and it has to be run within X amount of time. 11 It's a difficult cement to deal with. And we felt that 12 13 once you're inside the intermediate string, there is no real need for it. 14 That's all my questions. Thank you very much. 15 Ο. 16 Α. Thank you. 17 CHAIRPERSON BAILEY: I have a couple 18 questions, some to do with keeping the record clear. 19 CROSS-EXAMINATION 20 BY CHATRPERSON BAILEY: 21 You do realize -- you've mentioned potable Ο. 22 water as part of your explanation several times. You do 23 realize that we do have to protect all waters less than 24 10,000 milligrams per liter? 25 Α. Yes. Yes.

Q. We are not only concerned with potable water
 but protectable water.

Yes, although, Commissioner, my -- and maybe 3 Α. this is different than my -- than the regulatory 4 definition, but when I say potable water, I mean water 5 that is less than TDS, because the State Engineer 6 considers that protectable water. But in the case of 7 8 the Capitan, there are places where that water is greater than 10,000 TDS, but the BLM still considers 9 10that usable. They call it usable water, and they still 11 want that water protected.

Q. Also, there was a comment on quarterly reporting. I just want to be very clear that the C-115 monthly reporting for injection volumes is still in effect.

A. Absolutely. Absolutely. That's a given. But, you know, the C-115 provides, basically, just the volume injected for the month and the average pressure for that month. It's a lot less definitive than what data we're talking about collecting continuously and reporting on a quarterly basis.

Q. Right. I just didn't want it confused that we were giving you permission to only file that report on a quarterly basis.

A. No. We're very clear that the C-115s need to

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1 be done every month.

Q. Learning from past issues, during the Linam investigation, there was discussion about including a biocide along with the corrosion inhibitor on that diesel, on the back side.

A. When I refer to corrosion inhibited diesel, it7 includes both biocide and corrosion inhibition.

8 Q. And then, of course, the cement bond log will 9 be sent in before injection?

Α. Oh, absolutely. As a matter of fact, we have 10 to run the cement bond log -- the BLM is very, very 11 12 picky about the cement bond logs, and we run it -- and 13 they won't even let us move to the next stage of completion without signing off on the cement bond logs. 14 15Ο. And then you have several examples of the area for the plume projection. If you would like to refer to 16 17 the slide. It's well location and plumb projection.

18 A. Uh-huh.

19 The examples show that the area's influence are Ο. 20 circular, and it appears the circular areas are just 21 added together to make this lumpy kind of design. How do you compensate in calculating the area of influence 22 for injection from another well, which is reducing the 23 available porosity within the area of overlap between 24 25 the two wells?

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Page 124 A. : Well, what we have tried to do is to set up the 1 2 bottom-hole locations far enough apart that after 30 3 years, basically, they're just getting to touch each 4 other. I mean, they're not -- we put them -- we calculate that each well will have a radius of about a 5 quarter mile after 30 years in terms of the plume size, 6 7 and we've put the bottom hole of the two wells 1,200 8 feet apart. So we're trying to minimize the interaction 9 between the two wells, but there is likely going to be 10 some interaction in any case between the two. 11 Ο. Because we're talking a radius of 600 feet from 12 each individual bottom-hole location. 13 Α. That's correct. That's correct. 14Which is undefined as to how much of the area 0. 15 of overlap is going to change the outer circumference of 16 this plume. 17 Α. Well, the overall volume that's going to be injected would only fill up a radius of .37 miles, if 18 19 you were using a single well. So what's happened is 20 that we've got something that's much closer to about --21 a total length of about .4 or .42 miles when you put 22 those two quarter-mile sections together at the distances that the current bottom-hole locations are 23 24 apart from one another. 25 So I think that what we've calculated is

Page 125 the amount of volume and the surface expression of that 1 2 volume in acres, and that 15 million cubic feet, or in the case of 100 percent safety factor, the 30 million 3 cubic feet, those areas encompass that full amount of 4 5 That's how they were drawn on the map. acreage. (Mr. Brancard enters the room; Ms. Bada 6 exits the room.) 7 As additive rather than compensating for the 8 Ο. 9 porosity that's already filled? 10Α. That's right, because -- I mean, the porosity 11 that -- the overall area has only X amount of porosity. 12 And then the question is: Given the amount of volume of 13 gas that you've put it, what is going to be the surface expression of that three-dimensional plume? And that's 14 15 what we have represented on those two maps. Because you are asking for a 30-year permit, in 16 0. effect, because all of your calculations are based on 30 17 years, what is your objection to having a review at some 18 19 point before those 30 years are up in case there is some 20 sort of change or miscalculation or impact that was not 21 anticipated at this time, say 15 years or 10 years? 22 Because it's not necessarily a termination of a permit. 23 It would be a review of: Let's see how things are going? 24 25 I guess our position is that the data that are Α.

Page 126 1 required to conduct that analysis, in effect, are being 2 submitted already quarterly to the Division. So, I 3 mean, certainly the Division not only has the data at 4 some point, but, I mean, they could do that analysis 5 anytime that they wanted to with all of the data that's 6 being provided to them on a quarterly basis.

7 So I quess the biggest concern, very frankly -- and that's what I think Mr. Stone laid out --8 9 is that if you're going to spend half a billion dollars building a plant, you don't want to have something built 10 11 in that -- other than the normal risks that you assume. I mean, clearly, the Division has the ability -- if they 12 think that there is a problem associated with that 13 injection at any time, the director has the ability to 14 order the operator to stop injecting or to modify their 15 injection. But to have a defined window in a relatively 16 17 short period of time when you haven't even amortorized 18 the cost of the building or facility over that time 19 period, it provides a certain degree of just lack of 20 comfort that I think affects the decision-making of the economics of the project. 21 22 I don't think that there is any problem

22 I don't think that there is any problem
23 with, you know, working with the Division to analyze the
24 data or to -- but in terms of trying to understand what
25 has occurred, I mean, that's what the purpose, in our

	Page 127
1	mind, of that quarterly reporting of the pressure and
2	volume submitted to the agency is.
3	Q. Those are all the questions I have.
4	CHAIRPERSON BAILEY: Do you have any
5	redirect?
6	MR. RANKIN: Madam Chair, just a few
7	questions just a couple questions. It won't take but
8	a moment.
9	REDIRECT EXAMINATION
10	BY MR. RANKIN:
11	Q. Mr. Gutierrez, I wanted to just talk to you a
12	little bit about your testimony about the fiberglass
13	liner system.
14	A. Yes.
15	Q. That system you described, I believe you
16	testified that it's a you buy it from the
17	manufacturer, and it comes with the liner already
18	inserted into the tubing; is that correct?
19	A. Yes, as yes.
20	Q. And the manufacturer constructs that product
21	for the purpose of injecting acid gas for disposal; is
22	that correct?
23	A. Or acid gas for EUR projects, yes.
24	Q. So it's being you'd be using this for the
25	purpose for which it is manufactured?

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Page 128 Oh, absolutely. Yeah. That's specifically 1 Α. what it's made for. 2 3 And you'd be using it by the specs provided for 0. by the manufacturer? 4 5 Α. Yes. 6 Ο. And when you install the tubing with the 7 fiberglass piping, the installation would be done 8 according to the specs provided by the manufacturer, 9 correct? 10Α. And with the manufacturer's representative sitting on the rig floor while it's being done. 11 12 Thanks, Mr. Gutierrez. 0. 13 And then I just wanted to ask you a 14 question to follow on Madam Chair's questions about the 15 periodic review. If the Division at any time had a 16 question about the modeling based on actual data, could 17 they call DCP or call Geolex and have you or a DCP 18representative run through the data that's already been 19 provided? 20 Α. Well, certainly they can call DCP, and they can 21 call me if I happen to be working for DCP on that or if 22 they choose to use me for that particular project, yes. 23 0. And when they called you to ask you about what 24 the data presented shows, what would you do at that 25 point?

Page 129 1 Α. Basically, we would take the volume that had 2 been injected to date -- the actual volume, which in 3 some cases is usually less than the maximum, and then redo the same kind of calculations and analyses that we 4 5 And we'd also look at the pressures. But those are do. also information that are being provided on these 6 7 quarterly reports. 8 Q. And the step you would be taking would be just 9 to plug it into the model equation that you've been 10 using; is that correct? 11 Α. That's correct. 12 MR. RANKIN: No further questions. 13 CHAIRPERSON BAILEY: Anything else? 14MR. WADE: (Indicating.) 15 CHAIRPERSON BAILEY: Then you may be 16 excused. 17 THE WITNESS: Thank you. 18CHAIRPERSON BAILEY: Do you have any other 19 witnesses? 20 MR. RANKIN: No further witnesses. I'd 21 like to make a few closing remarks, if I might, before 22 you take this under consideration. 23 CHAIRPERSON BAILEY: Well, let's give the 24 OCD an opportunity to make a statement if they care to. 25 MR. WADE: We'll pass on making a

Page 130 1 statement, but we will call our one witness, Phil 2 Goetze. 3 CHAIRPERSON BAILEY: Stand and be sworn. Δ PHILLIP RODNEY GOETZE, 5 after having been first duly sworn under oath, was questioned and testified as follows: 6 7 DIRECT EXAMINATION 8 BY MR. WADE: 9 Q. Mr. Goetze, can you give us your name and your 10occupation? My name is Phillip Rodney Goetze, and I'm an 11 Α. employee of the OCD as a member of the Engineering and 12 13 Geologic Services Bureau. 14 What's your past work and education? Ο. 15 I graduated in 1977 from the New Mexico Α. 16 Institute of Mining and Technology. I am currently a 17 registered professional geologist in the states of Texas, Arizona, licensed in Alaska. The current history 18 with OCD is that I have been reviewing injection well 19 permits associated with saltwater disposal, enhanced oil 20 21 recovery, as well as reviewing submittals by DCP on 22 their other acid-gas wells. 23 Prior to that, my experience in oil and gas 24 is with the United States Geological Survey and the 25 United States Bureau of Land Management as a fluid

Page 131 1 minerals geologist, is what they call it, as well as a 2 geologist -- joint geologist for review of leases, as 3 well as development of agreement -- unit agreements and 4 review of seismic. 5 Q. Thank you. б So part of your duties at the OCD is 7 reviewing applications made under Rule 26? 8 Correct. Α. 9 0. And did you review the DCP C-108 application 10 before the Commission today? 11 I reviewed it with input from the district Α. 12 geologist in Hobbs. That would be Mr. Paul Kautz, as 13 well as the director -- not the director -- the chief of 14 the bureau, which is Richard Ezeanyim. 15 Ο. And after review, did the OCD propose 16 conditions to the application as proposed? 17 Α. We submitted in our statement some terms that 18 have been used on previous wells. And to carry on a consistency, since this is a process done through the 19 20 Commission, we tried to incorporate as many of the terms 21 that were identified previously. 22 And were those conditions discussed here today? Q. 23 Α. Yes, they were. 24 Did DCP propose modifications to those Q. 25 conditions?

Page 132 They have brought forth several items, which we 1 . A. 2 looked at and found no problems with. 3 0. And you were present for Mr. Gutierrez' testimony regarding the application, the OCD conditions 4 5 and the modification to those conditions, correct? Α. Correct. 6 7 0. And was Mr. Gutierrez' testimony an accurate 8 reflection as to what was discussed between OCD and DCP? 9 Α. Yes, it was. 100. Are DCP's proposed modifications to the OCD's 11 recommended conditions of approval acceptable to the 12 OCD? 13 Α. They are at this point. 14 And just to get into some of those Q. 15 conditions -- or some of the reasoning behind the 16 conditions for the Commission's benefit, why did you use 17 a half-mile area of review? 18 Α. Well, the half-mile area of review is 19 stipulated in our agreement with the EPA, so it is a 20 minimum distance that we are required to look at. Additionally, we have had -- in the past, looking at 21 22 wells at the one-mile radius, my experience of reviewing 23 previous C-108s, a concern was raised for the one-half 24 mile. And at that consideration, when identifying the 25 wells that we did, the four wells that we felt had

corrective actions required, we primarily stayed within
 that area.

Going to one of those wells in particular --3 0. 4 this would be -- I hope I've got the correct one 5 identified. This would be the plugged well, the Lusk 6 Deep Well #8. You heard Mr. Gutierrez testify that there would be a search for additional records regarding 7 8 that well, and those would be given to the OCD. What 9 additional records would the OCD need to see to make any further determination? 10

11 Α. There would have to be substantial 12 documentation as to the placement of cement. Basic 13 calculations are provided only in summary on the sundry 14 notices. So there would have to be something viable, 15 such as a temperature survey or a CBL or trip tickets 16 with daily logs, things that could be verified. But a 17 simple one sheet with the word "top of cement calculated" is not sufficient information. 18

Q. Regarding Madam Chair's question to Mr. Gutierrez as to a 10- or 15-year review period for DCP to provide a review document to the OCD, what do you see as the benefit to such a document? A. The benefit would be a system of continuity.

We're looking at a project that is going to be almost a third of a century in life that we're going to have

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Page 134 1 change in personnel, that the consistency of having at 2 least some documentation by the operator to us -- in 3 essence, making sure we do our portion o'f the homework 4 also -- that we come with the same conclusions as the 5 operator does. We do not have as much expertise, and 6 certainly we do not have the modeling capability which 7 has been presented here.

Q. Just a couple more questions. Based on your preview of DCP's C-108 application as modified with the conditions, does the OCD find the application protective of fresh water, human health and safety and correlative rights?

A. As presented and modified, yes, we do.
Q. And would you recommend the application be
approved with the conditions and modifications?

A. The application can be approved. We still have one item left to do and that's verify the -- we have received the return receipts, and then we'll just go ahead and confirm the mailing list.

Q. And that would also be contingent on the -- I'm spacing on the name -- on the plans -- contingency plans?
A. Well, again, with the approval of the well, will be incorporated into the surface facility, so those

25 goes hand in hand.

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Page 135 MR. WADE: I don't have any further 1 2 questions. CHAIRPERSON BAILEY: Any cross-examination? 3 CROSS-EXAMINATION 4 5 BY MR. RANKIN: 6 0. Just so I'm clear, Mr. Goetze, you are 7 satisfied with the agreement that DCP -- that there is 8 an agreement between DCP and the OCD of how to address 9 these four wells that were identified by the Division as 10 having concerns? 11 Α. We have a working agreement. There are always 12 situations in the field. We will have to deal with 13 those as we go along. I do have concerns with the 14100-foot above and below, as presented in this document, 15 your Exhibit Number 4, for, I believe -- if I may -- for your Gulf Federal #3. Again, that will depend what is 16 found in the hole, and so we may look at having just the 17 entire interval cemented as opposed to just caps on 1819 either end. 20 Do you recall Mr. Gutierrez' testimony that DCP Q. 21 would agree to reasonable and prudent --22 Α. Oh, yes. 23 -- recommendations by the Division in terms of Q. 24 how it would facilitate sealing off the zone? 25 And if DCP follows through with that, is

1 that acceptable to the Division?

A. This is going to be a working relationship as far as these, and, again, there are downhole situations we're going to find as we go along. So good faith has been shown by DCP on this, and they have responded to these four wells we have identified. So we're satisfied with that.

Q. With regard to your comments -- your testimony
about the seeing the return receipts for the
notification purposes, what is your recollection or
understanding of the rule for providing notice for an
injection well application? In other words --

A. Oh, I just want to verify the names coming in with what you've submitted in your C-108. I have not had time to look at.

Q. I guess what I want to be clear about is that under the rule -- correct me if I'm wrong. My understanding of the rule is that notice is required to be issued to the affected parties identified within the area of review, but they don't actually necessarily -in other words, are you saying you want to see that they actually received notice?

A. Well, I just want to verify what you gave me, that the 108 and the package, the supplemental, that that's correct.

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Page 137 1 Okay. I understand. Thank you very much. Q. MR. RANKIN: No further questions. 2 CHAIRPERSON BAILEY: Commissioner Warnell? 3 COMMISSIONER WARNELL: No questions. Δ 5 CHAIRPERSON BAILEY: Mr. Balch? CROSS-EXAMINATION 6 7 BY COMMISSIONER BALCH: 8 Q. So you're the lucky guy that gets to look at 9 these every quarter? 10 Α. Well, this is -- again, this has been a learning process. 11 12 Q. So I think there has been maybe a little bit of 13 a disconnect on the idea of a review. A formal review, I think, to the company makes them think that the plug 14 15 could get pulled on the basis of that. But for someone 16 that's looking at just kind of monitoring the status of 17 the project and then you're going to have quarterly 18 reports --19 Α. Correct. 20 Q. I'll be done in a second here. 21 -- quarterly reports, but would a periodic summary report, with updated model, give you the data 22 you needed to make that continuing acceptance of the 23 24 operation? 25 In the past, DCP has submitted Α. Okay.

Page 138 information on a shorter period, I think. What has been 1 evident by that experience is that this is a slow-moving 2 process. And so the dynamics of it, having reports come 3 in over a shorter period of time with a summary in it of 4 5 the overall project, doesn't seem to be very beneficial. 6 Ο. Not on a three-month basis, quarterly. I'm talking about every four years, five years; just give 7 8 you a summary of what's happened to that point, probably 9 based on their quarterly reports, for the most part, and updated models thrown in. I think there's probably 1011 going to be a lot more of these, and manpower's limited, perhaps, at the OCD at times. So I don't know if that 12 13 would be sufficient to allow you to make a -- for you to 14 periodically have it refreshed in your mind what the 15 state of the project is.

16 Α. It's something to consider. I don't know the frequency that would be best. It has been thrown around 17 their idea of long periods, short periods. Again, we 18 19 would have to rely on what industry generates as far as 20 how wide of an area did you get gas expanding into. So 21 it might be worth considering something on a shorter 22 period than 10 years or 15 years.

Q. I'm envisioning something more like a summary report than --

25 A. Oh, yeah.

Page 139 Q. : -- bring them into the Commission or the . 1 Division and have them give a presentation, unless you 2 want them to. 3 No. I will let you choose that, though. But I 4 Α. think we're working with a very limited skill set, and I 5 don't see where it would be too apprehensive to bring 6 forth that your model has been successful, or there are 7 8 issues that have been identified. Our intention is not 9 to shut it down. Our intention is to make sure that if 10we have issues coming over the horizon, that we can address them and make it successful. 11 Thank you, Mr. Goetze. 12 0. CHAIRPERSON BAILEY: 13 Followup? MR. WADE: That would conclude the OCD's 14 presentation of witnesses. 15 16 CHAIRPERSON BAILEY: Any closing 17 statements? 18 CLOSING STATEMENT 19 MR. RANKIN: Madam Chair, if I might, I 20 have a few statements to make for the benefit -- I appreciate your patience this morning, if I might. 21 22 First, I want to make a couple of summary highlights about today's presentation. I think today 23 24 we've heard from more than one witness that the AGI is 25 the current and best available technology for handling

the disposal and the long-term disposal of acid gas from these gas processing plants.

3 DCP, as you've heard, is committed with 4 approval of these two acid-gas injection wells to commit up to nearly half a billion dollars to construct what's 5 6 been described as a super system in the southeast part 7 of the state, which will provide multiple benefits both 8 in terms of the producers in the field, reducing the 9 emissions, increasing the reliability of production and 10 gas process, meeting increasing demand. We see it as a 11 win-win for the state and the general public and for the 12 producers in the field.

As you've heard, the application is protective of groundwater sources. It will protect human health and the environment by reducing emissions, and the application will prevent waste and protect correlative rights.

18 Now, with respect to DCP's commitment to go forward with this project, you heard testimony from 19 20 Mr. Stone that it's based in premise on a 30-year projection. And he didn't have occasion to testify to 21 22 this fact, but what he did say was that any significant 23 impairment to that projection -- or to that basis, that 24 premise could cause an issue with respect to their 25 ability to commit to the investment of these resources.

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Page 141 I think it's important to consider that and what that 1 2 means going forward. That, in turn, would risk impairing southeast New Mexico's gas processing capacity 3 in the immediate future. 4 As I think was testified to, the Division 5 is getting these guarterly -- will be getting these 6 7 quarterly reports, data that's taken on a continuing 8 basis. And it's the data that is necessary essentially 9 to check it that DCP is actually injecting and operating its facility in a way that it proposed that it would. 10 And if the Division wants to follow up on any of the 11 data and the meaning of that data, DCP is available to 12 13 answer those questions. 14 Secondly, I think it's important to consider that if the Commission is considering an 15 16 evaluation period or any kind of a reporting requirement, we're sitting here today without having had 17 any real notice of that or a formal proposition for what 18 19 that would look like or language for how that would be imposed or what exactly the Division would like to say. 20 So we haven't had time to really evaluate that. 21 22 So I think our recommendation, Madam Chair, 23 is that if the Commission is interested in that, that 24 they might think about it in terms of a rulemaking or 25 think about it in terms of a working group that's

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Page 142 1 currently meeting on a semi-regular basis to discuss 2 these issues. At this point in time, I think, with 3 respect to this project, we haven't had the time to 4 evaluate any concrete formal proposal for what kind of 5 data evaluation would be imposed. And I think I will 6 leave it at that. 7 But if the Commission is serious about 8 considering that kind of a imposition or provision in 9 the order, rather than close this hearing, we might ask 10that you keep it open, so we can bring back Mr. Stone to 11 address that specific issue, if that's something the 12 Commission is seriously considering today. 13 With that, I have no further comments. 14 CHAIRPERSON BAILEY: That concludes this 15 case. 16 We would like to go into -- or do I hear a 17 motion to go into closed session in accordance with 18 New Mexico Statute 10-15-1 and the OCC resolution on 19 open meetings? 20 COMMISSIONER BALCH: I'll make that motion. 21 COMMISSIONER WARNELL: Second that motion. 22 CHAIRPERSON BAILEY: All those in favor? 23 (Ayes are unanimous.) 24(Closed Session, 2:18 p.m. to 2:42 p.m.) 25 CHAIRPERSON BAILEY: Do I hear a motion to

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Page 143 1 go back on to the record? 2 COMMISSIONER BALCH: I'll make that motion. 3 COMMISSIONER WARNELL: I'll second that 4 motion. 5 CHAIRPERSON BAILEY: All those in favor? 6 (Ayes are unanimous.) 7 CHAIRPERSON BAILEY: The only thing that 8 was discussed was Case Number 15073. 9 Counsel Bill Brancard, would you please 10 relay the results of our decision? 11 MR. BRANCARD: Okay. The Commission 12 proposes to approve the application of the DCP 13 Midstream, LP for this facility as provided in its C-108 14 as amended, along with the conditions agreed to by DCP 15 and OCD, which includes but is not limited to an annual 16 mechanical integrity test, daily monitoring, quarterly 17 reporting, notification parameters and a process to 18 identify and review them, a hydrogen sulfite plan prior 19 to the commencement of the operation, and further that 20 DCP and OCD will enter into an agreement on the four 21 wells within the zone and the actions that need to be 22 taken at these wells that meet with the requirements of OCD. 23 24 In addition, the Commission requires that 25 every ten years, DCP shall submit a report to the OCD

Page 144 which characterizes -- with all the information 1 available at that time and using the best available 2 3 modeling technology under current industry standards, a 4 characterization of the plume at that point and any information about plume migration, along with a summary 5 6 of all the injection results to date. 7 Did I catch everything? 8 CHAIRPERSON BAILEY: I believe so. And if you would please submit a draft 9 And if you can do that in time, then we would be 10 order. 11 able to sign it at our next meeting, which is March 12 13th. 13 COMMISSIONER BALCH: Four weeks from today. 14 MR. RANKIN: Madam Chair, I'll work with 15 the Division to get a draft that's acceptable to submit, if I can, before the next Commission hearing. 16 17 CHAIRPERSON BAILEY: Well, we have to have it before then, so we can --18 19 MR. RANKIN: Review it. 20 CHAIRPERSON BAILEY: -- review it. 21 MR. BRANCARD: So at least a week before 22 that meeting. 23 COMMISSIONER WARNELL: Three weeks. 24 CHAIRPERSON BAILEY: Is there any other 25 business before the Commission today?

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1 Then do I hear a motion to adjourn?	
2 COMMISSIONER WARNELL: Motion to adjourn.	
3 COMMISSIONER BALCH: I will second.	
4 CHAIRPERSON BAILEY: All those in favor.	
5 (Ayes are unanimous.)	
6 (Case Number 15073 concludes, 2:45 p.m.)	
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Page 146 STATE OF NEW MEXICO 1 COUNTY OF BERNALILLO 2 3 CERTIFICATE OF COURT REPORTER 4 I, MARY C. HANKINS, New Mexico Certified 5 Court Reporter No. 20, and Registered Professional 6 7 Reporter, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that 8 9 the foregoing pages are a true and correct transcript of those proceedings that were reduced to printed form by 10 me to the best of my ability. 11 I FURTHER CERTIFY that the Reporter's 12 Record of the proceedings truly and accurately reflects 13 the exhibits, if any, offered by the respective parties. 14 15 I FURTHER CERTIFY that I am neither 16 employed by nor related to any of the parties or 17 attorneys in this case and that I have no interest in 18 the final disposition of this case. 19 May C. Hant 20 MARY C. HANKINS, CCR, RPR 21 Paul Baca Court Reporters, Inc. New Mexico CCR No. 20 22 Date of CCR Expiration: 12/31/2014 23 24 25

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