Page 1 3 IN THE MATTER OF THE HEARING CALLED IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR ORIGINAL THE PURPOSE OF CONSIDERING: 4 APPLICATION OF SUNDOWN ENERGY, L.P. CASE NO. 15048 5 FOR AUTHORIZATION TO INJECT FOR 6 WATERFLOOD PROJECT OPERATIONS, LEA COUNTY, NEW MEXICO. 7 8 9 REPORTER'S TRANSCRIPT OF PROCEEDINGS 10 EXAMINER HEARING October 3, 2013 11 12 Santa Fe, New Mexico 13 2013 OCT 22 P 1: 1 BEFORE: DAVID K. BROOKS, CHIEF EXAMINER 14 PHILLIP GOETZE, TECHNICAL EXAMINER 15 16 17 18 This matter came on for hearing before the New Mexico Oil Conservation Division, David K. Brooks, 19 Chief Examiner, and Phillip Goetze, Technical Examiner, on Thursday, October 3, 2013, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South 20 St. Francis Drive, Porter Hall, Room 102, Santa Fe, 21 New Mexico. 22 23 -REPORTED BY: Mary C. Hankins, CCR, RPR New Mexico CCR #20 24 Paul Baca Professional Court Reporters 500 4th Street, Northwest, Suite 105 25 Albuquerque, New Mexico 87102

Page 2 1 APPEARANCES 2 FOR APPLICANT SUNDOWN ENERGY, L.P.: 3 J. SCOTT HALL, ESQ. MONTGOMERY & ANDREWS LAW FIRM 325 Paseo de Peralta 4 Santa Fe, New Mexico 87501 (505) 982-3873 5 shall@montand.com 6 7 8 INDEX PAGE 9 Case Number 15048 Called 3 Sundown Energy, L.P.'s Case-in-Chief: 10 11 Witnesses: 12 Ross Pearson: Direct Examination by Mr. Hall 13 3 Cross-Examination by Examiner Brooks 19 Cross-Examination by Examiner Goetze 14 24 Proceedings Conclude 15 25 Certificate of Court Reporter 16 26 17 18 19 EXHIBITS OFFERED AND ADMITTED 20 Sundown Energy, L.P. Exhibit Numbers 1 through 5 19 21 22 23 24 25

Page 3 1 (8:23 a.m.) EXAMINER BROOKS: Then we will begin with 2 3 Case 15048. Call for appearances. 4 5 MR. HALL: Mr. Examiner, Scott Hall, 6 Montgomery & Andrews Law Firm of Santa Fe, appearing for 7 Applicant Sundown Energy, L.P. We have one witness this morning. 8 9 EXAMINER BROOKS: Okay. Would you have your witness stand and identify himself? 10 11 MR. PEARSON: I'm Ross Pearson, and I'm the area production manager for Sundown Energy. 12 EXAMINER BROOKS: Okay. Would you please 13 swear the witness? 14 15 ROSS PEARSON, after having been first duly sworn under oath, was 16 17 questioned and testified as follows: MR. HALL: Go ahead, take the stand. 18 19 DIRECT EXAMINATION BY MR. HALL: 20 Ο. For the record, please state your name. 21 22 Α. Ross Pearson. Mr. Pearson, where do you live, and by whom are 23 Q. you employed? 24 25 I live in Dallas, Texas, and I'm employed by Α.

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Page 4 1 Sundown Energy, L.P., Incorporated. In what capacity? 2 Ο. I'm the area production manager. Α. 3 Are you a petroleum engineer? 4 0. Yes, I am. 5 Α. Have you previously testified before the 6 ο. 7 Division and had your credentials as an expert petroleum engineer accepted as a matter of record? 8 9 Α. Yes, I have. Are you familiar with the application and the 10 Ο. lands that are subject of the application in this case? 11 12 Α. Yes, I am. 13 MR. HALL: Mr. Examiner, we re-offer Mr. Pearson as an expert petroleum engineer. 14 EXAMINER BROOKS: Very good. He is so 15 qualified. 16 (BY MR. HALL) Mr. Pearson, let's explain to the 17 Ο. Examiner what it is Sundown is seeking in this case, and 18 if you would refer to the first exhibit we have marked 19 as Exhibit 1, the unit Plan of Operations. 20 Sundown Energy has been acquiring a lot 21 Α. Yes. of these shallow Queen wells, and we've identified a 22 23 single structure out there in Lea County. It's about 20 miles west of the city of Hobbs. It's the Reeves Queen 24 as far as NMOCD classification. It's approximately 17 25

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Page 5 1 wells completed in this Reeves Queen. However, some of them are single-well or two-well type developments, 2 porosity developments, and we've gone through most of 3 the -- all the logs and identified one that actually 4 5 has, you know, fairly decent areal [sic], like stand-up 6 maybe, a section, and it has 12 wells that have 7 penetrated the Reeves Queen, and five have taken completions in the Reeves Queen. And at this point, we 8 9 would like to try to put it underwater flood. 10 The field that we've identified has 11 cumulative production of around 234,000 barrels and about 750 million feet of gas, and it's strictly on 12 13 primary. 14 Ο. And are these lands located in Township 18 South, Range 35 East, Sections 22, 27 and 28? 15 16 Α. That is correct. 17 If we refer to Exhibit Tab Number 2, the top Q. exhibit under that tab --18 19 MR. HALL: Can the Examiner refer to that? 20 Ο. (BY MR. HALL) And is that a locator map for the 21 Reeves Queen Unit? 22 Α. Yes, it is. And has Sundown filed a C-108, authorization to 23 ο. inject, application with the Division? 24 25 Α. Yes, we have, for the Arco State 28-1 and the

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1 Arco State 28-2.

Q. Would you briefly explain to the Examiner how
this interval of the Queen was selected for the
injection project?

Basically -- typically, the wells have Α. 5 6 primary -- I mean, primary recovery has been between 35 and 55,000 barrels, very little water production. 7 And we've also attached a couple of cross sections, and we 8 find that there is fairly decent areal [sic] extent 9 between the wells. It's -- the section of pay is 10 between 6 and 22 feet thick, and we feel that it's a 11 12 great opportunity to put it underwater flood. 13 And you're seeking to convert two wells --Ο.

14 A. Yes.

15 Q. -- two injectors?

16 A. Yes.

17 Q. Would you identify those?

18 A. It's the Arco State 28-1 and the Arco State
19 28-2, originally drilled by Tamarack Petroleum.

Q. If we look at Exhibit 4, the C-108 application and if we go to page 7 of that, what does that particular schematic show us?

A. That is showing the current configuration of the wellbore. The Arco State 28-1 has been plugged and abandoned, and, basically, Sundown Energy is proposing

Page 7 to drill out the surface plug, the plug set across the 1 surface pipe at 341 feet and basically tie back to the 2 3 four-and-a-half casing that's been cut off at 1,375. In the process, we plan on running 4 four-and-a-half casing and tying it back, and then 5 cementing it to surface from where the casing was cut 6 off at 1,375 feet. 7 We think that this wellbore has a lot of 8 advantages in that the well has -- the intermediate that 9 was set at 3,910 was circulated to surface, so we should 10 11 not -- we are not going to have any issues as far as top of cement. And then also we'll actually have two 12 strands of pipe as far as for an injector. 13 The second well we're looking at 14 re-entering is the Arco State 28-2, and this well is a 15 much more simpler application. All we have to do is 16 17 drill out the surface plug and the plugs set at 1,620 feet -- that's on page 3 [sic] -- and ultimately drill 18 19 out the bridge plug. At that point, we're just going to 20 go ahead and run two-and-three-eighths plastic coated tubing and the packer and complete it at the injection 21 22 well. 23 Make sure I heard you correctly. Did you refer Q. to page 13? 24 25 Α. I'm sorry. Yeah, 13.

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	Page 8
1	Q. Is that the current configuration?
2	A. That's the current configuration, and then we
3	have the file configuration on page 15.
. 4	Q. All right. So then Number 2.
5	A. And, once again, this is another this well
6	is a long string. It had cement circulated to surface,
7	so we should not have any issues with casing leaks.
8	Q. And with respect to the Number 1, we'll go back
9	to that well, again. If we want to see the proposed
10	final configuration, is that on page 10?
11	A. That's on page 10, yes, reflecting the casing
12	bowl/patch tie-in [sic] four-and-a-half-inch casing back
13	to surface, cementing from there up, and then ultimately
14	running the two-and-three-eighths plastic cover tubing
15	and setting the packer at 4,422 feet.
16	Q. And both these wells are neither of these
17	are uphole completions?
18	A. No. They're strictly true perforations.
19	Q. Sundown plans to inject under pressure?
20	A. Yes. We plan on injecting we're planning on
21	500 barrels a day per injector, at 842 pounds to
22	maintain the 22 psi per foot, 894 psi's to maintain the
23	.2 psi for the gradient, and if we find we can't get the
24	volumes, then we'll ultimately do a step-rate test to
25	increase the injection pressures.

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	Page 9
1	Q. What is the maximum injection rate?
2	A. 1,000 barrels of water per day.
3	Q. If you seek an increase pursuant to your
4	step-rate test, will that maximum volume increase?
5	A. I don't anticipate. My concern is that at that
6	pressure, we may not be able to get that volume of water
7	in the ground.
8	Q. Would are the sources of the fluids for the
9	injection project?
10	A. We have worked with Paladin Energy in the area,
11	and they have numerous Devonian wells with plenty of
12	water. So we've worked an agreement out that we can use
13	their water as makeup water for the waterflood.
14	Q. Are you satisfied that that water is compatible
15	with the fluids in the Queen?
16	A. Let's see here. It's in the C-108.
17	Q. If we refer to pages 39 through 42, can the
18	Examiner see the results of the chemical analysis for
19	the injection well?
20	A. Yes. We received a we got a sample from the
21	South Vacuum #5, which is a Devonian producer, and then
22	we pulled a sample from the Lea 403 State #2, which is
23	the Queen producer, and then we Cardinal Labs
24	combined to see what kind of scaling tendencies they
25	had. So there was pretty much no problems. There is a

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Page 10 slight scaling issue with calcium carbonate. However, 1 that's something that can be dealt with down the road 2 with just acidizing the perforations with hydrochloric 3 4 acid. We feel this is a real opportunity because we're not going to be using any -- this water's already being 5 disposed of as far as its, you know, produced water. 6 7 We're not looking for any fresh water to put the flood in place. 8 In your opinion, Mr. Pearson, is it prudent and 9 ο. feasible to apply enhanced recovery techniques to 10 maximize the crude oil from this unit area? 11 I feel this is a very good -- because of Α. Yes. 12 the lower GOR and the variable water production. 13 The second thing is, the field is 14 relatively -- it's just a porosity development. There 15 is very little structure in the field, and that it's 16 pretty much sealed all the way around. 17 We also have -- in our research, we found 18 19 that there were two fields in the area that have been pretty successful, the Corbin Central Queen; it's about 20 nine miles west to northwest of this, and then the 21 [phonetic] Queen Unit, which is 12 miles to Ouederch 22 Both of these fields have exhibited secondary the west. 23 to primary ratios of two to one, which is better than 24 what we anticipated when we put this together of 25

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1 one-to-one.

Do you anticipate this project will enable 2 Q. Sundown to recover incremental volumes of oil that would 3 otherwise have gone unrecovered? 4 5 Α. Absolutely. Q. 6 And will the costs of the enhanced recovery operations exceed the value of the additional oil? 7 Α. No. 8 9 Ο. And the lands that are being designated as the 10 project area, are they shown on that area locator map, which is at the top of Exhibit 2? 11 Yes, they are. 12 Α. 13 Q. Are these lands being unitized by Sundown? That's the ultimate plan, yes. We're basically 14 Α. getting injection wells in place for state permits. 15 All right. Let's turn back to Exhibit 2 and go 16 Q. to the second page, and we'll look at your geologic 17 exhibits. Can you tell us what geologic criteria 18 Sundown used to evaluate the formation? 19 20 Α. The first exhibit that we've got here in the exhibit is a -- that's a net pay isopach, and that was 21 constructed with a ten-percent porosity cutoff. 22 23 MR. HALL: We provided blowups of these exhibits. 24 25 Α. Actually, you can see that we've got some

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Page 12 pretty good well control to the west, the east and a 1 little bit towards the south. And we've also attached 2 two cross sections, A to A prime and B to B prime. 3 And it's pretty distinctive. You can see exactly where the 4 5 pay is. And typically the porosity runs from 10 to 20 percent in that interval, and then above and below, it's 6 7 zero percent. We believe it's a dolomitic sandstone, and 8 9 we think that it's a secondary porosity. We have no 10 proof of that, but that's what the thinking -- that's how these things -- how the porosity was formed. 11 The second exhibit that we've shown here is 12 13 a structure map, and as you can see, there's pretty much very little structure in this field. So it's definitely 14 a porosity pinch-out type reservoir. 15 And the third exhibit is our actual cross 16 section, two cross sections, A to A prime and B to B 17 prime, and I think it's pretty self-explanatory where 18 19 the -- where the actual pay zone is in the well -- in the field. Excuse me. And most of these wells were 20 drilled back in the '50s and '60s, so we've only got the 21 straight neutron. However, we did use the Reeves --22 Reeves State 21-1 as our model well for the unitizing, 23 when we put it underwater flooding. That example, you 24 25 can see, we almost got 20-percent porosity.

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Page 13 You have an excerpt from that log, from that 1 Ο. well, that is included in that exhibit? 2 As far as discussing permeability, we don't 3 Α. have any -- there is no core data, so typically the 4 wells would come in between 80 and 90 barrels a day; so 5 probably around the 10 to 30 millidarcy permeability in 6 the reservoir. 7 If we look at the excerpt from the wellbore for 8 0. the Reeves State 21-1, is the Unitized Formation 9 identified on that? 10 It is -- the unitized interval is the Yes. 11 Α. actual -- the actual Queen interval, you can see, is 12 13 where you're picking up some gamma ray from 4,430 to 4,490, and we are unitizing 100 feet above and 100 feet 14 below the interval. 15 From your evaluation of the project, are you 16 Ο. satisfied that injection fluids will remain contained 17 within the Unitized Formation? 18 I feel very confident that the wellbores in the 19 Α. area -- all of them are in really good condition as far 20 as the amount of cement that was used. I mean. 21 basically, the offset data is indicating that it's a 22 porosity pinch-out, so the fluids will stay in the 23 24 reservoir. 25 Are you satisfied that this particular interval Ο.

Page 14 of the Queen is productive of oil and gas in this area? 1 Α. Yes. 2 All right. Let's look, again, at the C-108, at 3 Ο. pages 16 and 17. If the Examiner refers to these pages, 4 can he see the two-mile radii and then the area of 5 6 review for your geologic analysis? The first one is an indication of all the 7 Α. Yes. wells surrounding the two injectors, two-mile radius, 8 9 reflecting the well completions in that area. And then, of course, the other one is the half-mile radius 10 11 indicating the wellbores that will cross that area. 12 Q. Within the half-mile area, is there any non-Queen production? 13 14 Α. Yes, there is. There is a horizontal that's a Bone Spring completion, and then the only other one --15 there is a potential that there may be some Devonian 16 17 production. It's not in the half-mile radius, but there may be an attempt to take completion in there down the 18 road. 19 So the Devonian and Bone Spring production, 20 0. that's below the Oueen? 21 22 Α. The Devonian and the Bone Spring is below the 23 Queen. Is there any production above the Queen? 24 0. No, there is not. 25 Α.

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Page 15 1 ο. If we refer to page 18, is that a list of the wells within the half-mile AOR? 2 Yes. it is. 3 Α. If we look to Exhibit Tab 3, what is that? 4 0. Is 5 that a compilation? 6 That is a compilation of all the wellbores Α. within the half-mile radius, and we've also attached a 7 couple of existing producers in the Reeves Queen field. 8 9 ο. So if we look at these schematics, is this a 10 compilation of all the wellbore schematics of the project wells? 11 Yes, it is. 12 Α. If we return to the C-108, beginning on pages 13 Ο. 14 19 through 31, is that where the Examiner can find the wellbore schematic for all the P&A'd wells? 15 16 Α. That is correct. 17 Q. In performing your analysis, was the data available to you sufficient to permit you to determine 18 19 casing depths and to accurately calculate the cement 20 tops and bottoms in the area? Most of the data we retrieved from the 21 Α. Yes. New Mexico Oil Conservation Division, and the majority 22 of the wells in this area, the -- whether in the 23 intermediate or -- the intermediate from a deeper well 24 test or the actual long-string production casing, most 25

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Page 16 1 of the time, the cement was circulated to surface. 2 Q. Did you see my evidence of casing leaks in the well? 3 I checked all the well files and all those 4 Α. 5 wellbore -- there is no indication of a casing squeeze 6 job on any of the wells. 7 Are you satisfied that the condition of all the Ο. wells within the area of review are such that none of 8 them will act as a conduit for fluids from the injection 9 intervals to the freshwater aquifers? 10 Yes, I'm confident. 11 Α. . Now, let's talk about all the freshwater 12 Ο. aquifers within the AOR. Can you identify those and 13 tell us if they occur? 14 They start here on pages 32 and 33, 35. 15 Α. Yes. 16 Those were all pulled off the GO-TECH from New Mexico State Office for the water-column depth. 17 The typical 18 fresh water out there is the Ogallala. And it starts at between 73 and 76 feet, and the base is 154 feet. 19 We then went to the GO-TECH Web site and 20 pulled the actual data of the freshwater wells out there 21 and the data submitted with the chloride and fresh 22 water, and typically using fresh water between 16 and 60 23 24 parts per million --25 0. So the freshwater samples, say, begin at pages

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Page 17 1 35 in the C-108? 2 Α. Yes, that is correct. 3 Ο. Are the dates of those samples reflected on the information? 4 Α. 5 Yes, they are. 6 Ο. Let's turn to page 53 of the C-108. Is that a 7 map identifying all of the offset operators to the project? 8 Α. That's a reflection of the mineral owners 9 Yes. or working interest owners of the area of review. 10 11 Ο. And if we turn to the next page, is that a list of the offset operators and leasehold owners who were 12 13 notified by Sundown? We notified all these. 14 Α. Yes. And did Sundown receive any objections? 15 Ο. 16 We received no objection from anybody as far Α. 17 as --In your opinion, Mr. Pearson, can this project 18 Q. be operated so that the injection fluids remain 19 20 contained within the Unitized Formation? 21 Α. Yes, they do. And will injection operations pose any threat 22 Q. 23 of impairment to correlative rights or waste to carbon resources? 24 25 Α. No.

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Page 18 1 Q. Can the project be operated so the public health and safety and the environment will be protected? 2 3 Α. Yes, it can. Were Exhibits 1 through 4 prepared by you or at Ο. 4 Sundown's direction? 5 6 Α. Yes, they were. 7 In your opinion, will granting Sundown's Ο. application promote the interest of conservation and 8 result in the prevention of waste and the protection of 9 correlative rights? 10 11 Α. Yes. MR. HALL: At this point, Mr. Examiner, we 12 13 move the admission of Exhibits 1 through 4, and also Exhibit Number 5, which is our Notice of Affidavit, and 14 point out to you that we have sent notice to BP at three 15 different addresses. None of them have been picked up 16 yet. So we'll watch that, and as soon as we get that 17 receipt confirmation, we'll get that over to you. But, 18 otherwise, that concludes our case. 19 20 EXAMINER BROOKS: Very good. And did you 21 offer your exhibits? MR. HALL: Yes, sir. 1 through 5 are 22 offered. 23 24 EXAMINER BROOKS: 1 through 5. And that's all your exhibits? 25

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Page 19 MR. HALL: Yes. 1 EXAMINER BROOKS: 1 through 5 are admitted. 2 (Sundown Energy Exhibit Numbers 1 through 5 3 were offered and admitted into evidence.) 4 CROSS-EXAMINATION 5 BY EXAMINER BROOKS: 6 You said that you plan to unitize this area. 7 ο. And I gather you have not done so yet, correct? 8 MR. HALL: Mr. Examiner, there is an 9 application pending. It's on the docket for the 31st. 10 EXAMINER BROOKS: Is this all state lands? 11 MR. HALL: Yes. 12 13 EXAMINER BROOKS: So you're proceeding through the State Land Office to have it unitized? 14 MR. HALL: Right. Yes. Ratifications have 15 been received as of this week. 16 EXAMINER BROOKS: The State Land Office has 17 given their preliminary approval? 18 19 MR. HALL: Yes. 20 EXAMINER BROOKS: Okay. Now, I was trying to locate the injectors, and I believe I finally found 21 that on one of the maps that you showed in the C-105 --22 23 what page -- C-108. 24 MR. HALL: We have a large blowup. 25 EXAMINER BROOKS: That's shown on page 53

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Page 20 of the C-108, it looks like. 1 (BY EXAMINER BROOKS) And the Arco State #1 --2 Q. Α. And the Arco State #2. 3 4 Ο. Okay. The Arco State #1 is in Unit A, northeast-northeast of Section 28? 5 6 Α. Yes. 7 Q. And the Arco B -- the Arco State #2 -- I'm The Arco State #2 is in Unit B --8 sorry. 9 Α. Yes. -- northwest-northeast of Section 28? 0. 10 Now, would you give me, again, the page 11 numbers in which the diagram -- wellbore diagrams are 12 located for those wells? 13 The final construction of the Arco State 14 Α. 28-1 is on page 10. 15 Okay. Page 7 is the present configuration? 16 Ο. Page 7 is the present condition, and then there 17 Α. is the data showing from the -- where the information 18 was -- how the well was plugged and ultimately how we 19 plan on configuring the well. 20 Page 10 is your intended construction 21 Q. configuration? 22 Α. 23 Correct. 24 And then the same process starts with 25 the -- on page 13 is the Arco State 28 #2, current

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Page 21 1 condition. 2 Q. Page 13? 3 Α. Yes, and then the data. And then the final configuration or 4 proposed configuration is on page 15. 5 6 Q. Page 15. Okay. Both of those wells are currently plugged 7 and abandoned? 8 9 Α. Yes, they are. You're going to drill out plugs, and you're 10 Ο. 11 going to install the tubing. You're not changing the 12 casing. Α. The Arco State 28-2 is a pretty simple 13 Yes. application. It's drilling the plugs out and running a 14 packer. And the 28 -- the 28-1, we're going to go ahead 15 and tie back the production casing that was cut off in 16 17 the plugging operation. Ο. Okay. Yeah, I see. You're going to -- I'm 18 sorry. Go ahead. 19 20 Α. Yeah. We're just going to drill out the plugs, dress off the casing stub at 1,375 feet, go ahead and 21 22 run four-and-a-half ten pound -- tie it back. And at that point, we're going to go ahead and cement it to 23 surface, because it's only 1,300 feet. And, you know, 24 that way we'll actually have quite -- there's actually 25

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Page 22 quite a bit of protection, with almost two strings of 1 casing and cement almost cross surface on both the 2 intermediate string and the production string. 3 Now, where was your list -- I saw you had the 4 0. list of the area-of-review wells. What page was that 5 6 on? 7 Α. 18. ο. And the list on page 18 is a list of all the 8 9 wellbores that penetrate this Queen Formation? Within the -- within that half-mile radius. 10 Α. Within the area of review of each of the two 11 0. injector wells? 12 13 Α. Two injectors, correct. Now, how many of these are plugged and 14 Ο. abandoned? 15 The Lea 405 Com 1 is plugged; the Hondo Oil & 16 Α. Gas Reeves State #1 is plugged; and the OXY State EA #1 17 is plugged. In fact, that was just a dry hole. And the 18 Atlantic State #1, drilled by Leatherwood Drilling, was 19 also a dry hole. 20 And you had satisfied yourself from Division 21 Q. records that all of these plugged-and-abandoned wells 22 23 are properly plugged and abandoned? 24 Α. Yes. They've all got isolation across the 25 Queen and got isolation at the base of the salts [sic].

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Page 23 So this is drilled and abandoned. 1 Ο. Okay. Now, what is the -- what is the geologic 2 formation above the Queen in this area? 3 Α. Yates Seven Rivers. 4 5 Q. Right. And does that -- does that form a capping structure that prevents upward movement? 6 7 Α. The capping structure is actually in the Queen itself. It literally -- there is no porosity. 8 9 0. In the upper part? In the upper part of the Queen. 10 Α. Yeah. I heard you say this is pinch-out, but I 11 0. didn't know. 12 13 Α. Yeah. You mean it's a vertical pinch-out, as well as 14 Ο. a lateral? 15 Α. If you take a look at that example, the Reeves 16 21-1, which is the best modern log that we could find in 17 the area, you can see it. There is no porosity above or 18 19 below where the pay zone is. Okay. And have you examined all the geological 20 0. information and satisfied yourself that there are no 21 faults or geologic structures that would provide a 22 conduit for upward movement of the injected fluids? 23 We're really confident because of the cross 24 Α. sections that have gone east and west and north and 25

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Page 24 south of it. They just tie in straight across. 1 There is very little -- there is only, I think, 17 feet of 2 change in structure out there, so if there was any kind 3 of fault, we would have seen it disjointed between the 4 wells. 5 Q. Okay. Very good. 6 EXAMINER BROOKS: Mr. Goetze? 7 CROSS-EXAMINATION 8 9 BY EXAMINER GOETZE: What is the current pressure of the Queen at 10 Ο. this time? 11 We think it's probably around 100 to 200 psi. 12 Α. It's pretty well depleted on primary. 13 And then I notice we have a third well Ο. 14 identified for use in waterflow potentially, the 15 Tamarack? 16 Α. Yes, the Tamarack Reeves 27-1. 17 And is there any particular reason why you 18 0. haven't petitioned at this time to include it as part of 19 this C-108? Are you looking down the road or --20 We're looking down the road to see how fast the 21 Α. response is going to occur. We want to start -- because 22 we've got more active producers starting on the west 23 side of the field --24 25 Q. Okay.

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Page 25 -- and on the south side. If we get a pretty 1 Α. 2 good response, we'll move quickly on re-entering the 3 Arco State 27-1 and converting it to injection. 4 Q. Very good. 5 And then in your analytical -- let's see --Cardinal made a composite, on page -- page 51. 6 So I'm 7 looking at the -- the H2S was analyzed for the combination, and you came up with a nondetect? 8 9 Α. Yes. 10 Ο. And do we have -- a nondetect is less than --I'm afraid I'd have to ask them what their 11 Α. cutoff is. 12 13 Q. Okay. Let's get a number for what is the detection limit, if you would please. 14 15 Α. All right. That's all the questions I have at this time. 16 Ο. 17 Thank you. 18 MR. HALL: Nothing further in the case. 19 Ask that it be taken under advisement. 20 EXAMINER BROOKS: Very good. Case Number 21 15048 will be taken under advisement. 22 (Case Number 15048 concludes, 8:55 a.m.) i do hereby certify that the foregoing is 23 a complete record of the proceedings in the Examiner hearing of Case No. 1504% 24 heard by me on 25 Examiner Cul.

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1 STATE OF NEW MEXICO

2 COUNTY OF BERNALILLO

3 CERTIFICATE OF COURT REPORTER 4 5 I, MARY C. HANKINS, New Mexico Certified 6 Court Reporter No. 20, and Registered Professional Reporter, do hereby certify that I reported the 7 foregoing proceedings in stenographic shorthand and that 8 9 the foregoing pages are a true and correct transcript of 10 those proceedings that were reduced to printed form by 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 14 the exhibits, if any, offered by the respective parties. 15 I FURTHER CERTIFY that I am neither 16 employed by nor related to any of the parties or attorneys in this case and that I have no interest in 17 the final disposition of this case. 18 19 noun ( Hankens 20 MARY C. HANKINS, CCR, RPR 21 Paul Baca Court Reporters, Inc. New Mexico CCR No. 20 22 Date of CCR Expiration: 12/31/2013 23 24 25

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