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

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

CASE NO. 16229

APPLICATION OF MANZANO, LLC FOR APPROVAL OF THE WEST CROSSROADS SAN ANDRES STATE EXPLORATORY UNIT, LEA COUNTY, NEW MEXICO.

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

June 28, 2018

Santa Fe, New Mexico

BEFORE: PHILLIP GOETZE, CHIEF EXAMINER DAVID K. BROOKS, LEGAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Phillip Goetze, Chief Examiner, and David K. Brooks, Legal Examiner, on Thursday, June 28, 2018, at the New Mexico Energy, Minerals and Natural Resources Department, Wendell Chino Building, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

REPORTED BY: Mary C. Hankins, CCR, RPR New Mexico CCR #20 Paul Baca Professional Court Reporters 500 4th Street, Northwest, Suite 105 Albuquerque, New Mexico 87102 (505) 843-9241

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1	APPEARANCES	
2	FOR APPLICANT MANZANO, LLC:	
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Page 3 (9:43 a.m.) 1 2 EXAMINER GOETZE: Let's go back on the 3 record. Case Number 16229, application of Manzano, 4 5 LLC for approval of the West Crossroads San Andres State Exploratory Unit, Lea County, New Mexico. 6 7 Call for appearances. 8 MS. LARSON: Good morning, Mr. Examiner. 9 Gary Larson and Jared Hembree of Hinkle Shanor for the 10 Applicant, Manzano, LLC. 11 EXAMINER GOETZE: Any other appearances? 12 MS. LARSON: And we have two witnesses. 13 EXAMINER GOETZE: Would the witnesses please stand, identify yourself for the court reporter 14 and be sworn in, please? 15 16 MR. WORRALL: John Worrall, geologist with 17 Manzano. 18 MR. McCLELLAND: Nick McClelland, land 19 manager, Manzano. 20 (Mr. Worrall and Mr. McClelland sworn.) MR. LARSON: I'd call Nick McClelland. 21 22 NICK McCLELLAND, 23 after having been first duly sworn under oath, was 24 questioned and testified as follows: 25

	Page 4
1	DIRECT EXAMINATION
2	BY MR. LARSON:
3	Q. Good morning, Mr. McClelland.
4	A. Good morning.
5	Q. Would you state your full name for the record?
6	A. Nick McClelland.
7	Q. And where do you reside?
8	A. Roswell, New Mexico.
9	Q. By whom are you employed and in what capacity?
10	A. Manzano, LLC as a land manager.
11	Q. And what is the focus of your responsibilities
12	as a land manager for Manzano?
13	A. I manage Manzano's land assets in southeastern
14	New Mexico.
15	Q. And are you familiar with the land matters that
16	pertain to Manzano's application?
17	A. Yes.
18	Q. Have you previously testified at a Division
19	hearing?
20	A. No.
21	Q. And given that, would you summarize for the
22	Examiner your educational background and professional
23	experience in the oil and gas business?
24	A. Sure. I have I graduated in 2010 with a
25	bachelor's degree from New Mexico State with in

Page 5 business, and I've worked continuously in the land 1 profession since then. I've worked for Yates Petroleum 2 Corporation, EOG Resources and, most recently, Manzano, 3 LLC. And I also have my MBA from the University of 4 5 Oklahoma. MS. LARSON: Mr. Examiner, I tender 6 7 Mr. McClelland as an expert in petroleum land matters. 8 EXAMINER GOETZE: He is so qualified. 9 (BY MR. LARSON) Would you identify the document 0. 10 marked as Exhibit 1? 11 Yes. This is the unexecuted unit agreement for Α. 12 the West Crossroads San Andres Unit. 13 And is Exhibit 1 a true and correct copy of the 0. 14 unit agreement? 15 Α. Yes. 16 And is the unit comprised entirely of state Q. 17 lands? 18 Α. Yes. 19 What percentage of the working interest in the Q. 20 unit area does Manzano own? 21 Α. 100 percent. 22 0. And does the State Land Office hold 100 percent 23 of the royalty interest? 24 Α. Yes. 25 I direct your attention to Exhibit B to the 0.

Page 6 unit agreement, which is page 9 of Exhibit 1 and ask you 1 2 to identify it. Yes. This is the schedule of ownership within 3 Α. the West Crossroads San Andres Unit. 4 5 And does Exhibit B identify all of the lessees Q. 6 of record --7 Α. Yes. 8 -- and all of the overriding royalty interest Q. 9 owners? 10 Α. Yes. 11 0. Does it indicate that Manzano holds 100 percent 12 of the working interest in the unit area? 13 Α. Yes. 14 Q. Is Manzano prepared to execute the unit 15 agreement? 16 Α. Yes. 17 Q. I would next direct your attention to Exhibit A 18 to the unit agreement, which appears on page 8 of Exhibit 1. I'd ask you for identify it. 19 20 Yes. This is a map of the unit area. Α. 21 Did you prepare this map? Q. 22 Yes. Α. 23 And does the dotted line indicate the 0. 24 boundaries of the proposed unit? 25 Α. Yes.

Page 7 And does it also identify each of the state 1 0. 2 leases that are included in it? 3 Α. Yes. 4 And in total, how many state leases are in the Q. 5 unit? 6 Α. 13. 7 And finally I'll direct your attention to Q. 8 Exhibit C of the unit agreement, which appears on pages 11 and 12 of Exhibit 1. And what is Exhibit C to the 9 unit agreement? 10 11 It is the schedule of tract participation Α. 12 within the West Crossroads San Andres Unit. 13 And what is the total acreage of the proposed 0. 14 unit? 15 Α. Total acreage is 4,153.72 acres. 16 And what formation is Manzano seeking to Q. unitize? 17 18 Α. San Andres. 19 EXAMINER BROOKS: I'm sorry. I didn't hear 20 you. 21 THE WITNESS: San Andres. 22 EXAMINER BROOKS: Thank you. 23 (BY MR. LARSON) Can you tell us what the upper 0. 24 and lower depths of the unitized interval would be? 25 The upper unitized interval would be located at Α.

Page 8 4,075 feet, and the lower interval will be located at 1 5,503 feet. 2 3 Q. And have Manzano's representatives met with the 4 State Land Office regarding the proposed exploratory 5 unit? Yes, on two different occasions. 6 Α. 7 Would you next identify the document marked as Q. 8 Exhibit Number 2? 9 This is the June 6th letter from Commissioner Α. Aubrey Dunn. 10 11 0. Is Exhibit 2 a true and correct copy of 12 Commissioner Dunn's letter? 13 Α. Yes. 14 Does this letter indicate Commissioner Dunn's 0. 15 preliminary approval of the proposed exploratory unit? 16 Α. Yes. 17 Q. Did Manzano notify the State Land Office of today's hearing? 18 19 Α. Yes. 20 And did Manzano also notify the owners of the Q. 21 overriding royalty interests identified in Exhibit B to 22 the unit agreement? 23 Α. Yes. 24 Would you identify the document marked as 0. 25 Exhibit 3?

Page 9 This is -- these are the notice letters 1 Α. Yes. 2 for the State Land Office and the overriding royalty interest owners and the associated green cards. 3 4 ο. And were these notice letters prepared and sent 5 under your direction and supervision? 6 Α. Yes. 7 And does Exhibit 3 include true and correct ο. 8 copies of the notice letter? 9 Α. Yes. And were green cards received for all of the 10 Q. 11 notices? 12 Α. Yes. 13 In your opinion, does the proposed exploratory 0. 14 unit cover an area that can be reasonably developed 15 under a unit plan? 16 Α. Yes. 17 Q. And in your opinion, will the granting of 18 Manzano's application serve the interest of 19 conservation, protection of correlative rights and 20 prevention of waste? 21 Α. Yes. 22 MS. LARSON: Mr. Examiner, I'd move the 23 admission of Exhibits 1 through 3. 24 EXAMINER GOETZE: Exhibits 1 through 3 are 25 so entered.

Page 10 (Manzano, LLC Exhibit Numbers 1 through 3 1 2 are offered and admitted into evidence.) 3 MS. LARSON: And I will pass the witness. EXAMINER BROOKS: No questions. 4 5 CROSS-EXAMINATION BY EXAMINER GOETZE: 6 7 Just for a matter of interest, does Section 0. 31 -- is that a U.S. lease? 8 9 Α. That is a U.S. lease. 10 And who is there? Who operates that? 0. 11 It's operated by Reliance Operating. Α. Other than that, I have no questions. 12 Thank Q. 13 you very much. 14 Α. Thank you. JOHN WORRALL, 15 after having been previously sworn under oath, was 16 17 questioned and testified as follows: 18 DIRECT EXAMINATION 19 BY MR. LARSON: 20 Good morning, Mr. Worrall. 0. 21 Good morning. Α. 22 0. Would you state your full name for the record? 23 John Worrall. Α. And where do you reside? 24 Q. 25 Roswell, New Mexico. Α.

Page 11 1 And what is your position at Manzano? Q. 2 Α. I'm a co-owner and do geology and business. 3 Q. And are you familiar with the geologic aspects 4 of Manzano's application? 5 Α. Yes. 6 Have you previously testified at a Division Q. 7 hearing? 8 Α. Yes, I have. And at those hearings, were you qualified as an 9 Q. expert petroleum geologist? 10 11 Α. Yes. 12 MS. LARSON: Mr. Examiner, I tender 13 Mr. Worrall as an expert in petroleum geology. EXAMINER GOETZE: He is so qualified. 14 15 (BY MR. LARSON) Is the San Andres Formation in ο. 16 the proposed area part of the Northwest Shelf? Yes, it is. 17 Α. 18 What is Manzano's primary objection in the Q. 19 unitized unit? 20 The San Andres P1 dolomite. Α. 21 Could you generally describe the geology? Q. 22 The P1 dolomite is about 120 feet thick, Α. 23 porosity developed in a dolomite interval, crystalline 24 porosity -- anhydrite, underlain by tighter limestone. 25 Would you identify the document marked as Q.

Page 12 1 Exhibit 4? 2 Α. That's a structure map of the P1 dolomite. 3 Q. And did you prepare this structure map? Yes, I did. 4 Α. 5 And what offset wells are identified on your Q. 6 structure map? 7 A key well is there in Section 31, southeast Α. 8 quarter. It's marked with a purple circle. It'll be a type log -- I'll show you later -- on the cross section. 9 In general, structure dips from 750 feet on the north 10 11 end down to about 900 feet on the south side. Those are 12 subsea depths. And another key well is the well in the red circle. That's the Apache Pacifico State #1H. I'll 13 be showing that later on on the cross section. 14 15 And is the Apache well the only horizontal well ο. 16 drilled in the vicinity of the proposed unit? 17 Α. Yes. 18 And what does the structure map tell you about Q. 19 the prospects for San Andres horizontal wells in the 20 unit area? The unit area is all updip structurally to the 21 Α. 22 Apache well, so it should have as good or better of an oil cut. 23 24 Have you analyzed the issue of faulting in the 0. 25 unitized area?

Page 13 There is no faulting. This is all draped over 1 Α. 2 deeper structure unfaulted. 3 Q. So is it fair to conclude there are no geologic 4 impediments? 5 Α. Yes. Would you next identify Exhibit 5? 6 Q. 7 Exhibit 5 is an isopach of the porosity within Α. the 120-foot P1 dolomite. 8 9 And did you prepare this map as well? Q. I did. 10 Α. 11 0. And what is your isopach map intended to 12 depict? 13 It shows the amount of porosity within that Α. interval that's greater than 5 percent. We have 14 porosity up to 100 feet out of 120 feet in the dark 15 16 green area in the center of the unit, and then from there, it thins to about 70 feet on the south end of the 17 unit. Note that before that, it goes to 20 feet. So we 18 19 are, in this unit, targeting the thickest part of the P1 20 dolomite. 21 Q. Would you next identify the exhibit marked as 22 Number 6? 23 Number 6 is a stratigraphic cross section Α. 24 depicting the P1 dolomite. 25 And did you prepare this exhibit? 0.

Page 14 I did. 1 Α. 2 And how does the -- does the cross section 0. 3 identify the unitized interval? Yes, it does. The yellow is the P1 dolomite, 4 Α. and the blue is the underlying limestone. 5 6 ο. And what wells are included in the cross 7 section? 8 Α. The well on the left is the blue-circled well, 9 our type well, showing that the P1 dolomite has 101 feet of porosity, 13 PhiH. The Pacifico well on the 10 southeast end of the unit, it only had 49 feet of 11 porosity, 5.56 PhiH. And it was drilled to the south 12 where there was only 20 feet of porosity. So our unit 13 should target about three times the thickness of that 14 LLC [sic] that the Apache will encounter. 15 16 ο. Does Manzano have an initial development plan for the unit? 17 18 Α. We do. 19 Would you identify the document marked as Q. 20 Exhibit 7? Exhibit 7 is the development plan for the unit. 21 Α. 22 Q. And did you also prepare this exhibit? I did. 23 Α. 24 Would you generally describe Manzano's Q. 25 development plan?

Page 15 Our first well will be drilled -- it's marked 1 Α. with the red language there, the first well, drilling 2 from Section 5, northwest-northwest with the first take 3 point in the southwest-southwest of Section 32, and it 4 will be drilled as a one-mile lateral along the west 5 б half west-west half of Section 32. 7 ο. And is there a second well in the works? 8 Α. Our second well would be a one-and-a-half-mile lateral drilled in Section 1 and 36. And then we've 9 10 also shown on here that in general we're thinking about 11 this as a six-well-per-section spacing unit. 12 Q. Would you identify the final exhibit, which is marked as Exhibit 8? 13 I don't have that with me. Oh, yes. Exhibit 8 14 Α. is a C-102 for our initial well. 15 16 ο. And would it be accurate to characterize it as a preliminary C-102 for the test well? 17 18 Yes, it is. It hasn't been officially Α. surveyed, but we've got it prepared --19 20 And the well would be drilled south to north; Q. 21 is that correct? 22 South to north, yes. Α. 23 And is south to north the preferred orientation 0. 24 throughout the unitized interval? 25 Yes, it is. It's drilling from downdip to Α.

	Page 16
1	updip.
2	Q. And in your opinion, is the San Andres
3	prospective for the recovery of oil and gas throughout
4	the unit area?
5	A. Yes, I do [sic].
6	Q. In your opinion, is the pay relatively
7	equivalent throughout the unit there.
8	A. Yes, 100 feet thick.
9	Q. In your opinion, will the unit development
10	result in the efficient recovery of oil and gas?
11	A. Yes, sir.
12	Q. And in your opinion, will the granting of
13	Manzano's application serve the interest of
14	conservation, the protection of correlative rights and
15	the prevention of waste?
16	A. Yes.
17	MS. LARSON: Mr. Examiner, I'd move the
18	admission of Exhibits 4 through 8.
19	EXAMINER GOETZE: Exhibits 4 through 8 are
20	so entered.
21	(Manzano, LLC Exhibit Numbers 4 through 8
22	are offered and admitted into evidence.)
23	MS. LARSON: And I pass the witness.
24	EXAMINER GOETZE: Mr. Brooks?
25	EXAMINER BROOKS: No questions.

Page 17 1 CROSS-EXAMINATION 2 BY EXAMINER GOETZE: 3 Q. Good morning. Good morning. 4 Α. 5 So first off, this has been classified by the Q. district as wildcat status? 6 7 Α. Yes. 8 Q. Okay. So you don't really have a pool name per se. You're going to have one of Paul Kautz' special 9 10 labels. 11 You have proposed mile, mile and a half. 12 Is a two-mile something that was considered in 13 developing this, or is that outside --We've considered it. We think the economics 14 Α. and the rate of return are better with one-miles in this 15 16 formation. 17 Q. And let's see. And the concept of how these 18 are going to be completed, roughly, as far as 19 fracturing? 20 We've run about 500 pounds per lateral foot, Α. about 25 stages in a one-mile lateral. 21 22 Q. So the water, you're going to be able to find 23 somewhere to get rid of it? 24 Yes. We've got an arrangement with -- let's Α. 25 see -- it's Merchant [sic], a disposal well about two

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Page 18
1
    miles away.
 2
              Okay. Good. Other than that, I have no
         0.
     questions. Thank you very much. Thank you for all the
 3
4
     geology you've done, too. Appreciate it.
5
                   Did you want to say something?
б
                   THE WITNESS: It was Pliny the Elder that
7
    died.
8
                   (Laughter.)
                   MS. LARSON: With Mr. Worrall's
9
     clarification of Roman history, I have nothing to say.
10
11
     I have nothing further and ask that this case be taken
    under advisement.
12
13
                   EXAMINER GOETZE: Case Number 16229 will be
     taken under advisement.
14
                   EXAMINER BROOKS: Then it must have been
15
16
     Pliny the Younger that wrote the account.
17
                   Thank you.
18
                   (Case Number 16229 concludes, 10:00 a.m.)
19
20
21
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23
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Page 19 1 STATE OF NEW MEXICO 2 COUNTY OF BERNALILLO 3 CERTIFICATE OF COURT REPORTER 4 5 I, MARY C. HANKINS, Certified Court Reporter, New Mexico Certified Court Reporter No. 20, 6 7 and Registered Professional Reporter, do hereby certify 8 that I reported the foregoing proceedings in 9 stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings that 10 were reduced to printed form by me to the best of my 11 12 ability. 13 I FURTHER CERTIFY that the Reporter's Record of the proceedings truly and accurately reflects 14 the exhibits, if any, offered by the respective parties. 15 16 I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or 17 18 attorneys in this case and that I have no interest in 19 the final disposition of this case. 20 DATED THIS 26th day of July, 2018. 21 22 MARY C. HANKINS, CCR, RPR 23 Certified Court Reporter New Mexico CCR No. 20 Date of CCR Expiration: 12/31/2018 24 Paul Baca Professional Court Reporters 25