

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

**APPLICATION OF TAP ROCK OPERATING, LLC
FOR A STANDARD HORIZONTAL SPACING
AND PRORATION UNIT AND COMPULSORY POOLING,
EDDY COUNTY, NEW MEXICO**

Case No. 20320

Tap Rock Operating, LLC

(Delirium State Com #131H)

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Tab 1: Application

RECEIVED 2013-02-15

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

**APPLICATION OF TAP ROCK OPERATING, LLC
FOR A STANDARD HORIZONTAL SPACING
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EDDY COUNTY, NEW MEXICO**

Case No. _____

APPLICATION

Tap Rock Operating, LLC ("Tap Rock"), through its undersigned attorneys, hereby files this application with the Oil Conservation Division pursuant to the provisions of NMSA 1978, § 70-2-17, for an order (1) creating a standard 160-acre, more or less, horizontal spacing and proration unit comprised of the W/2W/2 of Section 13, Township 25 South, Range 27 East, NMPM, Eddy County, New Mexico, and (2) pooling all uncommitted interests in the Bone Spring formation (Hay Hollow Bone Spring North Pool; Pool code [30216]) underlying the standard unit. In support of its application, Tap Rock states:

1. Tap Rock is a working interest owner in the proposed standard horizontal spacing unit ("HSU") and has the right to drill thereon.
2. Tap Rock proposes to dedicate the above-referenced standard horizontal spacing and proration unit for its proposed **Delirium State Com #131H well**, to be horizontally drilled from an approximate surface location 334' FSL and 876' FWL of Section 13 to a bottom hole location 5' FNL and 990' FWL of Section 13. This is the "defining well" for this unit.
3. The completed intervals and first and last take points for the **Delirium State Com #131H well** are within the setbacks required by the statewide pool rules.
4. Tap Rock has in good faith sought and been unable to obtain voluntary agreement for the development of these lands from all of the mineral interest owners in the subject HSU.

5. Approval of the standard HSU and the pooling of all mineral interest owners in the Bone Spring formation underlying the HSU will avoid the drilling of unnecessary wells, will prevent waste, and will protect correlative rights.

6. In order to permit Tap Rock to obtain its just and fair share of the oil and gas underlying the subject lands, all uncommitted interests in this HSU should be pooled and Tap Rock should be designated the operator of the proposed HSU.

WHEREFORE, Tap Rock requests that this application be set for hearing before an Examiner of the Oil Conservation Division on April 4, 2019, and, after notice and hearing as required by law, the Division enter an order:

A. Creating a 160-acre, more or less, horizontal spacing and proration unit comprised of the W/2W/2 of Section 13, Township 25 South, Range 27 East, NMPM, Eddy County, New Mexico;

B. Pooling all uncommitted interests in the standard HSU;

C. Designating the **Delirium State Com #131H well** as the defining well for the standard HSU;

D. Designating Tap Rock as operator of this standard HSU and the wells to be drilled thereon;

E. Authorizing Tap Rock to recover its costs of drilling, equipping and completing the wells;

F. Approving the actual operating charges and costs of supervision while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures; and

G. Imposing a 200% penalty for the risk assumed by Tap Rock in drilling and completing the well against any interest owner who does not voluntarily participate in the drilling of the wells.

Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

/s/ Kaitlyn A. Luck

Seth C. McMillan

Kaitlyn A. Luck

Post Office Box 2307

Santa Fe, NM 87504-2307

(505) 982-3873

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kluck@montand.com

Attorneys for Tap Rock Operating, LLC

Case No. : ***Application of Tap Rock Operating, LLC for a Standard Horizontal Spacing and Proration Unit and Compulsory Pooling, Eddy County, New Mexico.*** Applicant in the above-styled cause seeks an order from the Division: (1) creating a standard 160-acre, more or less, horizontal spacing and proration unit comprised of the W/2W/2 of Section 13, Township 25 South, Range 27 East, NMPM, Eddy County, New Mexico, and (2) pooling all uncommitted interests in the Bone Spring formation (Hay Hollow Bone Spring North Pool; Pool code 30216) underlying the standard unit. Said horizontal spacing unit is to be assigned to the proposed initial **Delirium State Com #131H well**, to be horizontally drilled from an approximate surface location 334' FSL and 876' FWL of Section 13 to a bottom hole location 5' FNL and 990' FWL of Section 13. This is the "defining well" for this unit. The completed intervals and first and last take points for these wells are within the statewide rule for setbacks. Also to be considered will be the cost of drilling and completing the wells and the allocation of the cost, the designation of Applicant as Operator of the well, and a 200% charge for the risk involved in drilling and completing the wells. The wells and lands are located approximately 7 miles Southwest of Malaga, New Mexico.

Tab 2: Prehearing Statement

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

**APPLICATION OF TAP ROCK OPERATING, LLC
FOR A STANDARD HORIZONTAL SPACING
AND PRORATION UNIT AND COMPULSORY POOLING,
EDDY COUNTY, NEW MEXICO**

Case No. 20320

PRE-HEARING STATEMENT

Tap Rock Operating, LLC provides this Pre-Hearing Statement as required by the rules of the Division.

APPEARANCES

APPLICANT

Tap Rock Operating, LLC

APPLICANT'S ATTORNEYS

Sharon T. Shaheen
Seth C. McMillan
Montgomery & Andrews, P.A.
P.O. Box 2307
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Dana Arnold
Tap Rock Resources, LLC
602 Park Point Drive, Suite 200
Golden, CO 80401
darnold@taprk.com

OPPONENT

None

OPPONENT'S ATTORNEYS

n/a

STATEMENT OF THE CASE

In this case, Applicant seeks an order from the Division (1) creating a standard 160-acre, more or less, horizontal spacing and proration unit ("HSU") comprised of the W/2 W/2 of Section 13, Township 25 South, Range 27 East, NMPM, Eddy County, New Mexico, and (2) pooling all

uncommitted interests in the Bone Spring formation (Hay Hollow Bone Spring North Pool; Pool code [30216]) underlying the standard unit. The HSU is to be dedicated to the proposed **Delirium State Com #131H well**, to be horizontally drilled from an approximate surface location 334' FSL and 876' FWL of Section 13 to a bottom hole location 5' FNL and 990' FWL of Section 13. This is the "defining well" for this unit.

The completed intervals and first and last take points for this well are within the setbacks required by the statewide rules. The wells and lands are located approximately 7 miles Southwest of Malaga, New Mexico.

Also to be considered will be the costs of drilling and completing the wells and the allocation of the costs, the designation of Applicant as Operator of the well, and a 200% charge for the risk involved in drilling and completing the wells.

PROPOSED EVIDENCE

<u>APPLICANT'S WITNESSES</u>	<u>EST. TIME</u>	<u>EXHIBITS</u>
Matt Phillips, Land	20 min.	6
Adam Smith, Geologist	20 min.	4

PROCEDURAL MATTERS

This matter may be consolidated with Case No. 20321 for purposes of hearing. Assuming no opposition by time of hearing, Tap Rock will present these matters by affidavit.

Respectfully submitted,

MONTGOMERY & ANDREWS, P.A.

/s/ Sharon T. Shaheen

Seth C. McMillan

Sharon T. Shaheen

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Attorneys for Tap Rock Operating, LLC

Tab 3: Landman Affidavit

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

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FOR A STANDARD HORIZONTAL SPACING
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EDDY COUNTY, NEW MEXICO**

Case No. 20320

AFFIDAVIT OF MATT PHILLIPS

I, being duly sworn on oath, state the following:

1. I am over the age of eighteen years and have the capacity to execute this Affidavit, which is based on my personal knowledge.
2. I am employed as a Senior Landman with Tap Rock Operating, LLC ("Tap Rock"), and I am familiar with the subject application and the lands involved.
3. This affidavit is submitted in connection with the filing by Tap Rock of the above-referenced compulsory pooling application pursuant to 19.15.4.12.A(1) NMAC.
4. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum land matters. My credentials as a petroleum landman have been accepted by the Division and made a matter of record.
5. The purpose of this application is to force pool working interest owners into the horizontal spacing unit ("HSU") described below, and in the wells to be drilled in the unit.
6. No opposition is expected. Devon Energy Corporation ("Devon") and COG Operating, LLC ("COG") were contacted regarding the proposed well. Tap Rock has since determined that COG has no interest in this proposed unit. Devon has failed or refused to voluntarily commit its interests in the well. Devon has, however, otherwise represented to me that it does not oppose this pooling application.

7. Tap Rock seeks an order pooling all mineral interests in the Bone Spring (Hay Hollow Bone Spring North Pool; Pool code [30216]) HSU underlying the W/2 W/2 of Section 13, Township 25 South, Range 27 East, NMPM, Eddy County, New Mexico. The proposed 160-acre spacing unit will be dedicated to the **Delirium State Com #131H well**, as the defining well for the unit.

8. A proposed C-102 is attached as **Exhibit 1**. The well will develop the Hay Hollow Bone Spring North Pool; Pool code [30216], which is an oil pool.

9.

10. A plat outlining the unit is attached hereto as **Exhibit 2** and shows that the HSU will be comprised of one State lease.

11. The parties being pooled and the nature of their interest are found in **Exhibit 3** attached hereto. **Exhibit 3** includes information regarding working interest owners and overriding royalty interest owners.

12. There are no depth severances in the Bone Spring formation.

13. The proposed surface hole location of the **Delirium State Com #131H well** is approximately 334' FSL and 876' FWL of Section 13. The proposed bottom hole location is approximately 5' FNL and 990' FWL of Section 13. The proposed total vertical depth is 8,948'. The first take point will be located at approximately 100' FSL and 990' FWL of Section 13 and the last take point will be located at approximately 100' FNL and 990' FWL of Section 13.

14. I have conducted a diligent search of the public records in Eddy County, New Mexico, where the well will be located, and conducted phone directory and computer searches to obtain contact information for parties entitled to notification. I mailed all parties well proposals, including an Authorization for Expenditure ("AFE").

15. Tap Rock has made a good faith effort to obtain voluntary joinder of the working interest owners in the proposed well.

16. **Exhibit 4** is a sample proposal letter and the AFE for the proposed well. The estimated cost of the wells set forth in the AFE is fair, reasonable, and comparable to the costs of other wells of similar depths and lengths drilled in this area of New Mexico.

17. Tap Rock requests overhead and administrative rates of \$7000/month for drilling a well and \$700/month for a producing well. These rates are fair and comparable to the rates charged by other operators for wells of this type in this area of southeastern New Mexico. Tap Rock requests that these rates be adjusted periodically as provided in the COPAS Accounting Procedure.

18. Tap Rock requests the maximum cost, plus 200% risk charge be assessed against non-consenting working interest owners.


19. Tap Rock requests that it be designated operator of the wells.

20. The Exhibits to this Affidavit were prepared by me, or compiled from Tap Rock's company business records.

21. The granting of this Application is in the interests of conservation, the prevention of waste, and the protection of correlative rights.

22. The foregoing is correct and complete to the best of my knowledge and belief.

FURTHER AFFIANT SAYETH NAUGHT



Matt Phillips

STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

Subscribed to and sworn before me this 3rd day of April, 2019.



Notary Public

My Commission expires 10-4-2022.

EMILY KASA Notary Public State of Colorado Notary ID # 20184039277 My Commission Expires 10-04-2022

Tab 4: Geologist Affidavit

**STATE OF NEW MEXICO
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OIL CONSERVATION DIVISION**

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EDDY COUNTY, NEW MEXICO**

Case No. 20320

AFFIDAVIT OF ADAM SMITH

I, being duly sworn on oath, state the following:

1. I am over the age of 18, and I have personal knowledge of the matters stated herein.
2. I am employed as a petroleum geologist for Tap Rock Operating, LLC (“Tap Rock”), and I am familiar with the subject application and the geology involved.
3. This affidavit is submitted in connection with the filing by Tap Rock of the above-referenced compulsory pooling application pursuant to 19.15.4.12.A(1) NMAC.
4. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum geology matters. My credentials as a petroleum geologist have been accepted by the Division and made a matter of record.
 - a. I hold a Bachelor’s degree in Geology from Northern Illinois University, and a Master’s of Science in Geology from Northern Illinois University. I completed my education in 2009.
 - b. I have been employed as a petroleum geologist since 2009. I have worked in New Mexico since 2016.
5. **Exhibit 6** is a Project Locator Map depicting the location of the HSU within the Delaware Basin.

6. **Exhibit 7** is a Bone Spring structure map. The proposed standard horizontal spacing and proration unit (“HSU”) is depicted by a red rectangle. The map is the top of the 3rd Bone Spring W Sand Structure in sub-sea vertical depth. The contour intervals are 25 ft each. There is a monoclinial dip down to the east. The orientation of the Delirium State Com 131H will be approximately along strike. There are no horizontal wells in the nearby vicinity that have targeted the 3rd Bone Spring W Sand. The horizontals on the map have targeted other zones in the Bone Spring and Wolfcamp. The vertical wells controlling the structure map have the sub-sea vertical depth posted. The subsequent cross-section from A-A’ is also identified to locate our closest control on the reservoir properties for the Delirium State Com 131H. I do not observe any faulting, pinch-outs, or other geologic impediments or hazards to developing this targeted interval with a horizontal well.

7. **Exhibit 8** is a Bone Spring stratigraphic cross-section. Each well is a triple combo log. Track 1 is gamma ray log with interpreted color fill for lithology and scaled from 0 to 200 api units. The blue colors indicate carbonate, yellow to orange are sandstone/siltstones, and the darker browns are shale facies. In track 2 is the deep resistivity log from 0.2 ohmm to 2000 ohmm. The shading cutoff is less than 50 ohmm to help identify the more siliciclastic rocks. Track 3 is the porosity track with neutron porosity identified by the red curve scaled from 30% to -10%. The pink shading on this curve is anything greater than 15% to identify zones with increased clay content. The density porosity curve is the blue curve from 30% to -10%. The green shading is a cutoff of anything greater than 10% porosity. This cutoff indicates the best rock properties for reservoir evaluation. The cross-section identifies the key tops used to evaluate reservoirs and landing targets for the Delirium State Com 131H. A simplified well-bore for the Delirium State com 131H is on the cross-section showing the landing target interval in the green shaded box and

the horizontal well schematic within the green box. The landing target is juxtaposed directly on top of the Wolfcamp interval. With the proximity to the Wolfcamp and the hypothesis of the stimulated rock volume created when completing horizontal wells, Tap Rock believes that the 3rd Bone Spring W sand must be developed with the Upper Wolfcamp A sand intervals. The reservoir in the 3rd Bone Spring W sand has constant thickness and reservoir facies through the Delirium Horizontal Spacing Unit.

8. **Exhibit 9** is a Gross Isopach map of the 3rd Bone Spring W Sand interval. This map shows the location of the Delirium State Com 131H spacing unit outlined by the red box and the surface/bottom hole location of the Delirium State Com 131H well. The anticipated gross thickness of the interval is 80 ft through the entire Horizontal Spacing Unit. The relative thickness is constant across the area as shown on this map to range from 70 – 90 ft. There are no horizontal wells that have targeted this interval in the vicinity and all the horizontals shown on the map are landed in other zones in the Bone Spring and Wolfcamp Formations. The location of the previous cross-section from A-A' is also shown on this map.

9. Based on my geologic study of the area, I conclude the following:

- a. The horizontal spacing and proration unit is justified from a geologic standpoint.
- b. There are no structural impediments or faulting that will interfere with horizontal development.
- c. Each quarter-quarter section in the unit will contribute more or less equally to production.
- d. The preferred well orientation in this area is south-north. This is because the inferred orientation of the maximum horizontal stress is roughly northwest-southeast.

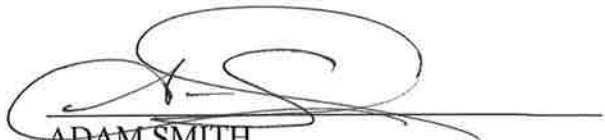
10. **Exhibit 10** is a Simplified Wellbore Diagram that shows that the first and last take points for the 131H well will be standard.

11. The Exhibits to this Affidavit were prepared by me, or compiled from Tap Rock's company business records.

12. The granting of this Application is in the interests of conservation and the prevention of waste.

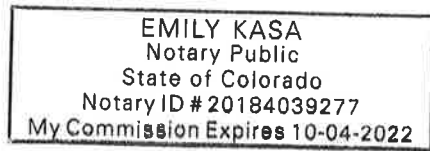
13. The foregoing is correct and complete to the best of my knowledge and belief.

FURTHER AFFIANT SAYETH NAUGHT


ADAM SMITH

STATE OF COLORADO)
)ss
COUNTY OF Jefferson)

Subscribed to and sworn before me this 3rd day of April, 2019.





Notary Public

My Commission expires 10-4-2022.

Tab 5: Exhibits



Delirium State Com #131H

Case No. 20320

April 4, 2019

Table of Contents

1. C-102
2. Tract Map
3. Unit Interest
4. Well Proposal and AFE
5. Affidavit of Notice
6. Locator Map
7. Subsea Structure Map #131H
8. Stratigraphic Cross Section #131H
9. Isopach Map #131H
10. Simplified Wellbore Diagram #131H

Tract Map

Section 13, Township 25 South, Range 27 East, Eddy County, New Mexico			
Tract One State Lease VB-1795			
Tract Two State Lease VB-1795			



-  State Lease
-  Delirium Horizontal Spacing Unit

EXHIBIT No. 2
Tap Rock Resources Delirium
State Com #131H
Case Nos. 20320
April 4, 2019 Hearing

Bone Spring Unit Interest*

Entity	Interest Type	Approximate Percentage
Tap Rock Resources, LLC	Working Interest	50.00%
Devon Energy Production Company	Uncommitted Working Interest	50.00%

Entity	Interest Type
Tap Rock Minerals, LP	Overriding Royalty Interest

EXHIBIT No. 3
Tap Rock Resources Delirium
State Com #131H
Case Nos. 20320
April 4, 2019 Hearing

*final interest subject to division order title verification



January 31, 2019

Devon Energy Production Company, LP
Attn: Land Department
333 W. Sheridan Ave.
Oklahoma City, OK 73102-5015

**RE: Delirium State Com #131H, #201H & #215H Well Proposals
W/2 Section 13, Township 25 South, Range 27 East
Eddy County, New Mexico (the "Wells")**

Via Certified Mail

Ladies and Gentlemen:

Tap Rock Operating, LLC (TRO), as Operator, previously proposed the Delirium 25S27E1313 #201H and #211H by letter dated September 21, 2018. As our development strategy for this unit has changed, TRO hereby withdraws the previously sent AFEs and replaces them with the following:

- Delirium State Com #131H to be drilled from a surface hole location (SHL) of 334' FSL and 876' FWL of Section 13-T25S-R27E to a bottom hole location (BHL) of 5' FNL and 990' FWL of Section 13-T25S-R27E. The proposed well will be drilled to an approximate true vertical depth (TVD) of 8,948' subsurface in the Bone Spring Formation. The proposed well will have a measured depth (MD) of approximately 14,250'.
- Delirium State Com #201H to be drilled from a surface hole location (SHL) of 334' FSL and 826' FWL of Section 13-T25S-R27E to a bottom hole location (BHL) of 200' FNL and 330' FWL of Section 13-T25S-R27E. The proposed well will be drilled to an approximate true vertical depth (TVD) of 9,061' subsurface in the Wolfcamp Formation. The proposed well will have a measured depth (MD) of approximately 14,350'.
- Delirium State Com #215H to be drilled from a surface hole location (SHL) of 334' FSL and 851' FWL of Section 13-T25S-R27E to a bottom hole location (BHL) of 200' FNL and 990' FWL of Section 13-T25S-R27E. The proposed well will be drilled to an approximate true vertical depth (TVD) of 9,248' subsurface in the Wolfcamp Formation. The proposed well will have a measured depth (MD) of approximately 14,530'.

The proposed locations and drilling plans described above are subject to change depending on surface or subsurface issues that may be encountered. TRO will advise you of any such modifications.

In the event you elect to participate in the proposed Wells, please execute the enclosed AFEs and return to me within 30 days. TRO is proposing to drill these wells under the terms of the

**EXHIBIT No. 4
Tap Rock Resources
Delirium State Com #131H Case
Nos. 20320
April 4, 2019 Hearing**



previously sent AAPL Form 610-1989 Operating Agreement covering the W/2 of Section 13, Township 25 South, Range 27 East, Eddy County, New Mexico.

If you do not wish to participate in the Operation, TRO would like to offer the following terms:

- 3 year primary term, Term Assignment
- Royalty equal to the difference between existing burdens and 20%
- \$1,500 per net acre bonus consideration

The Term Assignment offer is subject to the approval of TRO's board and verification of title.

Additionally, TRO is open to discuss possible trades or other deal structures related to your interest in the proposed wells. If an agreement cannot be reached within 30 days of the date of this letter, TRO will apply to the New Mexico Oil Conservation Division for compulsory pooling of your interest into a spacing unit for the proposed wells if uncommitted at such time to allow TRO to move forward with planning and drilling the subject wells.

Should you have any questions regarding the above, please contact the undersigned.

Sincerely,

TAP ROCK OPERATING, LLC

Matt Phillips

Matt Phillips

Senior Landman
Office: 720-459-3724
mphillips@taprk.com



Devon Energy Production Company, LP hereby elects to:

_____ participate in the drilling of the Delirium State Com #131H

_____ non-consent the drilling of the Delirium State Com #131H

_____ participate in the drilling of the Delirium State Com #201H

_____ non-consent the drilling of the Delirium State Com #201H

_____ participate in the drilling of the Delirium State Com #215H

_____ non-consent the drilling of the Delirium State Com #215H

By: _____

Name: _____

Title: _____

Date: _____

Authorization For Expenditure

State: New Mexico

Geologic Target: 3rd Bone Spring W

Well Description: Drill and complete a horizontal 3rd Bone Spring W well with a one mile lateral.

INTANGIBLE DRILLING COSTS			
COST CODES		DESCRIPTION	AMOUNT
1	1	Land - Legal	10,000
1	2	Land - Regulatory	7,500
1	3	Land - Surface Damages	20,000
1	4	Land - Survey	5,000
1	5	Location/Pit Construction	90,000
1	6	Remedial Dirtwork	0
1	7	Reserve/Frac Pit Closing	0
1	8	Drilling - Contractor	446,341
1	9	Mob/Rig Up - Contractor/Trucking	73,950
1	10	Cementing Services	185,000
1	11	Cementing Equipment	35,000
1	12	Bits/Drill Out Assemblies	61,875
1	13	Fluid Circulation Equipment/Services	76,989
1	14	Fluids/Chemicals	97,904
1	15	WBM Cuttings/Wastewater Disposal	90,000
1	16	OBM Cuttings/Chemical Disposal	90,000
1	17	Fuel/Power	104,522
1	18	Water	22,500
1	19	Directional Drilling	187,995
1	20	Mud Logging	16,776
1	21	Open/Cased/Production Hole Logs	0
1	22	Coring	0
1	23	Geologic Supervision	0
1	24	Engineering Supervision	0
1	25	Consultant Supervision	94,069
1	26	Freight/Transportation	25,000
1	27	Labor	0
1	28	Supplies - Surface	0
1	29	Supplies - Living Quarters	0
1	30	Rentals - Surface	62,665
1	31	Rentals - Living Quarters	24,040
1	32	Rentals - Downhole	3,500
1	33	Rentals - Pipe & Handling Tools	30,000
1	34	Rentals - Frac Stack	
1	35	Rentals - Frac Tanks	
1	36	Coil Tubing Unit/Workover Rig	
1	37	Wireline/Slickline/Perforating	
1	38	Temporary Packers/Plugs	
1	39	High Pressure Pump Truck	
1	40	Stimulation	
1	41	Rentals - Pressure Control	
1	42	Flowback Services	
1	43	Water Transfer Services	
1	44	Flowback Water Trucking & Disposal	
1	45	Permanent Equipment Installation	
1	46	Pipeline Tapping Services	
1	47	Plugging & Abandonment	0
1	53	Overhead	0
1	54	Insurance	0
1	55	Contingency	93,031

TOTAL INTANGIBLE DRILLING COSTS: \$1,953,658

INTANGIBLE COMPLETION COSTS			
COST CODES		DESCRIPTION	AMOUNT
2	1	Land - Legal	
2	2	Land - Regulatory	
2	3	Land - Surface Damages	
2	4	Land - Survey	
2	5	Location/Pit Construction	
2	6	Remedial Dirtwork	
2	7	Reserve/Frac Pit Closing	
2	8	Drilling - Contractor	
2	9	Mob/Rig Up - Contractor/Trucking	
2	10	Cementing Services	
2	11	Cementing Equipment	
2	12	Bits/Drill Out Assemblies	32,730
2	13	Fluid Circulation Equipment/Services	
2	14	Fluids/Chemicals	26,522
2	15	WBM Cuttings/Wastewater Disposal	
2	16	OBM Cuttings/Chemical Disposal	
2	17	Fuel/Power	312,500
2	18	Water	484,344
2	19	Directional Drilling	
2	20	Mud Logging	
2	21	Open/Cased/Production Hole Logs	10,550
2	22	Coring	
2	23	Geologic Supervision	
2	24	Engineering Supervision	
2	25	Consultant Supervision	70,545
2	26	Freight/Transportation	4,110
2	27	Labor	18,440
2	28	Supplies - Surface	4,110
2	29	Supplies - Living Quarters	4,110
2	30	Rentals - Surface	34,460
2	31	Rentals - Living Quarters	24,100
2	32	Rentals - Downhole	0
2	33	Rentals - Pipe & Handling Tools	0
2	34	Rentals - Frac Stack	42,200
2	35	Rentals - Frac Tanks	10,730
2	36	Coil Tubing Unit/Workover Rig	83,345
2	37	Wireline/Slickline/Perforating	218,550
2	38	Temporary Packers/Plugs	36,000
2	39	High Pressure Pump Truck	121,760
2	40	Stimulation	1,698,688
2	41	Rentals - Pressure Control	27,165
2	42	Flowback Services	105,250
2	43	Water Transfer Services	101,100
2	44	Flowback Water Trucking & Disposal	12,660
2	45	Permanent Equipment Installation	
2	46	Pipeline Tapping Services	
2	47	Plugging & Abandonment	
2	53	Overhead	24,880
2	54	Insurance	
2	55	Contingency	265,951

TOTAL INTANGIBLE COMPLETION COSTS: \$3,774,800

INTANGIBLE PRODUCTION COSTS			
COST CODES		DESCRIPTION	AMOUNT
3	1	Land - Legal	
3	2	Land - Regulatory	
3	3	Land - Surface Damages	
3	4	Land - Survey	
3	5	Location/Pit Construction	5,000
3	6	Remedial Dirtwork	
3	7	Reserve/Frac Pit Closing	
3	8	Drilling - Contractor	
3	9	Mob/Rig Up - Contractor/Trucking	
3	10	Cementing Services	
3	11	Cementing Equipment	
3	12	Bits/Drill Out Assemblies	
3	13	Fluid Circulation Equipment/Services	
3	14	Fluids/Chemicals	
3	15	WBM Cuttings/Wastewater Disposal	
3	16	OBM Cuttings/Chemical Disposal	
3	17	Fuel/Power	
3	18	Water	
3	19	Directional Drilling	
3	20	Mud Logging	
3	21	Open/Cased/Production Hole Logs	
3	22	Coring	
3	23	Geologic Supervision	
3	24	Engineering Supervision	
3	25	Consultant Supervision	3,600
3	26	Freight/Transportation	10,000
3	27	Labor	25,000
3	28	Supplies - Surface	
3	29	Supplies - Living Quarters	
3	30	Rentals - Surface	
3	31	Rentals - Living Quarters	
3	32	Rentals - Downhole	
3	33	Rentals - Pipe & Handling Tools	
3	34	Rentals - Frac Stack	
3	35	Rentals - Frac Tanks	
3	36	Coil Tubing Unit/Workover Rig	17,127
3	37	Wireline/Slickline/Perforating	
3	38	Temporary Packers/Plugs	
3	39	High Pressure Pump Truck	
3	40	Stimulation	
3	41	Rentals - Pressure Control	
3	42	Flowback Services	
3	43	Water Transfer Services	
3	44	Flowback Water Trucking & Disposal	
3	45	Permanent Equipment Installation	
3	46	Pipeline Tapping Services	
3	47	Plugging & Abandonment	
3	53	Overhead	5,000
3	54	Insurance	
3	55	Contingency	6,572

TOTAL INTANGIBLE PRODUCTION COSTS: \$72,300

TANGIBLE DRILLING COSTS			
COST CODES		DESCRIPTION	AMOUNT
4	60	Conductor Casing	0
4	61	Surface Casing	15,585
4	62	1st Intermediate Casing	106,750
4	63	2nd Intermediate Casing	282,545
4	64	Production Casing	263,963
4	65	Tubing	
4	66	Wellhead	75,000
4	67	Permanent Packers/Hangers/Plugs	
4	68	Tanks	
4	69	Production Vessels	
4	70	Compressors	
4	71	Surface Flowlines	
4	72	Gathering Lines	
4	73	Valves & Controllers	
4	74	Artificial Lift Equipment	
4	75	Instrumentation & Measurement	
4	76	Electrical Grounding/Safety Equipment	
4	77	Permanent Equipment Installation	
4	80	Other - Surface	
4	81	Other - Downhole	

TOTAL TANGIBLE DRILLING COSTS: \$743,843

TANGIBLE COMPLETION COSTS		
COST CODES	DESCRIPTION	AMOUNT
5 60	Conductor Casing	
5 61	Surface Casing	
5 62	1st Intermediate Casing	
5 63	2nd Intermediate Casing	
5 64	Production Casing	
5 65	Tubing	
5 66	Wellhead	
5 67	Permanent Packers/Hangers/Plugs	
5 68	Tanks	
5 69	Production Vessels	
5 70	Compressors	
5 71	Surface Flowlines	
5 72	Gathering Lines	
5 73	Valves & Controllers	
5 74	Artificial Lift Equipment	
5 75	Instrumentation & Measurement	
5 76	Electrical Grounding/Safety Equipment	
5 77	Permanent Equipment Installation	
5 80	Other - Surface	
5 81	Other - Downhole	

TOTAL TANGIBLE COMPLETION COSTS: \$0

TANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT
6 60	Conductor Casing	
6 61	Surface Casing	
6 62	1st Intermediate Casing	
6 63	2nd Intermediate Casing	
6 64	Production Casing	
6 65	Tubing	50,000
6 66	Wellhead	27,000
6 67	Permanent Packers/Hangers/Plugs	4,500
6 68	Tanks	
6 69	Production Vessels	81,200
6 70	Compressors	
6 71	Surface Flowlines	25,000
6 72	Gathering Lines	5,000
6 73	Valves & Controllers	
6 74	Artificial Lift Equipment	235,000
6 75	Instrumentation & Measurement	
6 76	Electrical Grounding/Safety Equipment	
6 77	Permanent Equipment Installation	
6 80	Other - Surface	
6 81	Other - Downhole	

TOTAL TANGIBLE PRODUCTION COSTS: \$427,700

TAP ROCK RESOURCES COMPANY APPROVAL:

CEO _____ VP - EXPLORATION _____

CFO _____ VP - OPERATIONS _____

VP - LAND & LEGAL SENIOR GEOLOGIST

NON OPERATING PARTNER APPROVAL

SIGNED BY: _____ TITLE: _____

WORKING INTEREST (%): _____ DATE: _____

TAX ID: _____ APPROVAL: _____

AFE is an estimate only. By signing this AFE, you agree to pay your proportionate share of the actual costs.

EXHIBIT A

Devon Energy Production Company, LP
333 West Sheridan Avenue
Oklahoma City, OK 73102-5015

COG Operating, LLC
600 West Illinois Avenue
Midland, Texas 79701

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
\$ 3.45

Extra Services & Fees (check box, add fee as appropriate)

☒ Return Receipt (hardcopy) \$ 2.75

☐ Return Receipt (electronic) \$

☐ Certified Mail Restricted Delivery \$

☐ Adult Signature Required \$

☐ Adult Signature Restricted Delivery \$

Postage
\$ 1.42


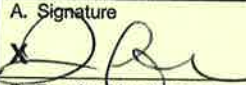
Total Postage and Fees
\$ 7.62

Sent To
Street and Ap
City, State, Zi

COG Operating, LLC
600 W. Illinois Ave.
Midland, TX 79701

Postmark
Here
SANTA FE NM
MAR 13 2019
USPO 87504

PS Form 38

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p> <p>1. Article Addressed to:</p> <p>COG Operating, LLC 600 W. Illinois Ave. Midland, TX 79701</p> <p> 9590 9403 0913 5223 4536 80</p> <p>2. Article Number (Transfer from service label) 7015 1730 0000 9813 4061</p>		<p>A. Signature </p> <p><input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) Jennifer Wohlewy</p> <p>C. Date of Delivery 3/18/19</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery</p> <p><input checked="" type="checkbox"/> Certified Mail®</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery</p> <p><input type="checkbox"/> Collect on Delivery</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery</p> <p><input type="checkbox"/> Insured Mail</p> <p><input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</p>		<p><input type="checkbox"/> Priority Mail Express®</p> <p><input type="checkbox"/> Registered Mail™</p> <p><input type="checkbox"/> Registered Mail Restricted Delivery</p> <p><input checked="" type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Signature Confirmation™</p> <p><input type="checkbox"/> Signature Confirmation Restricted Delivery</p>	

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt

7015 1730 0000 9813 4078

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	\$ 3.45
Extra Services & Fees (check box, add fee as appropriate)	
<input checked="" type="checkbox"/> Return Receipt (hardcopy)	\$ 2.75
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postage	\$ 1.42
Total Postage and Fees	\$ 7.62

Postmark
Here

SANTA FE NM
 MAR 13 2019
 USPO 87504

Sent To

Street and Apt. N

City, State, ZIP+4

PS Form 3800

Devon Energy Production Company, LP
 333 West Sheridan Ave.
 Oklahoma City, OK 73102-5015

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Devon Energy Production Company, LP
 333 West Sheridan Ave.
 Oklahoma City, OK 73102-5015



9590 9403 0913 5223 4536 97

2. Article Number (Transfer from service label)

7015 1730 0000 9813 4078

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent

☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
 If YES, enter delivery address below: ☐ No



3. Service Type

☐ Adult Signature

☐ Adult Signature Restricted Delivery

☒ Certified Mail®

☐ Certified Mail Restricted Delivery

☐ Collect on Delivery

☐ Collect on Delivery Restricted Delivery

☐ Insured Mail

☐ Insured Mail Restricted Delivery (over \$500)

☐ Priority Mail Express®

☐ Registered Mail™

☐ Registered Mail Restricted Delivery

☒ Return Receipt for Merchandise

☐ Signature Confirmation™

☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

Project Locator Map

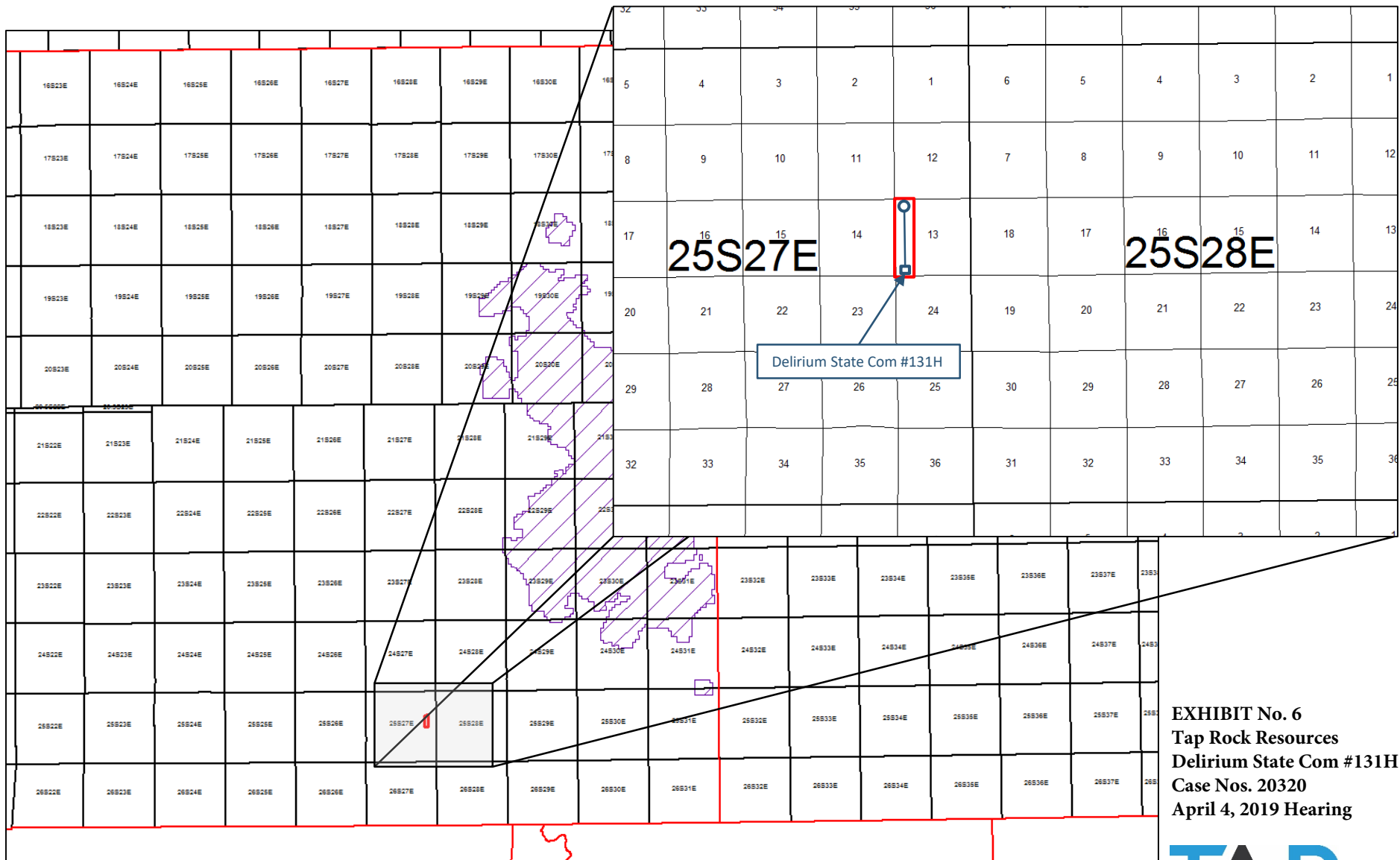


EXHIBIT No. 6
Tap Rock Resources
Delirium State Com #131H
Case Nos. 20320
April 4, 2019 Hearing



Subsea Structure Map (Top 3rd Bone Spring W Sand)

Map Legend

SHL □ Tap Rock –
Horizontal Locator

BHL ○

Spacing Unit

C.I. = 25'

● 3rd Bone Spring Sand Target

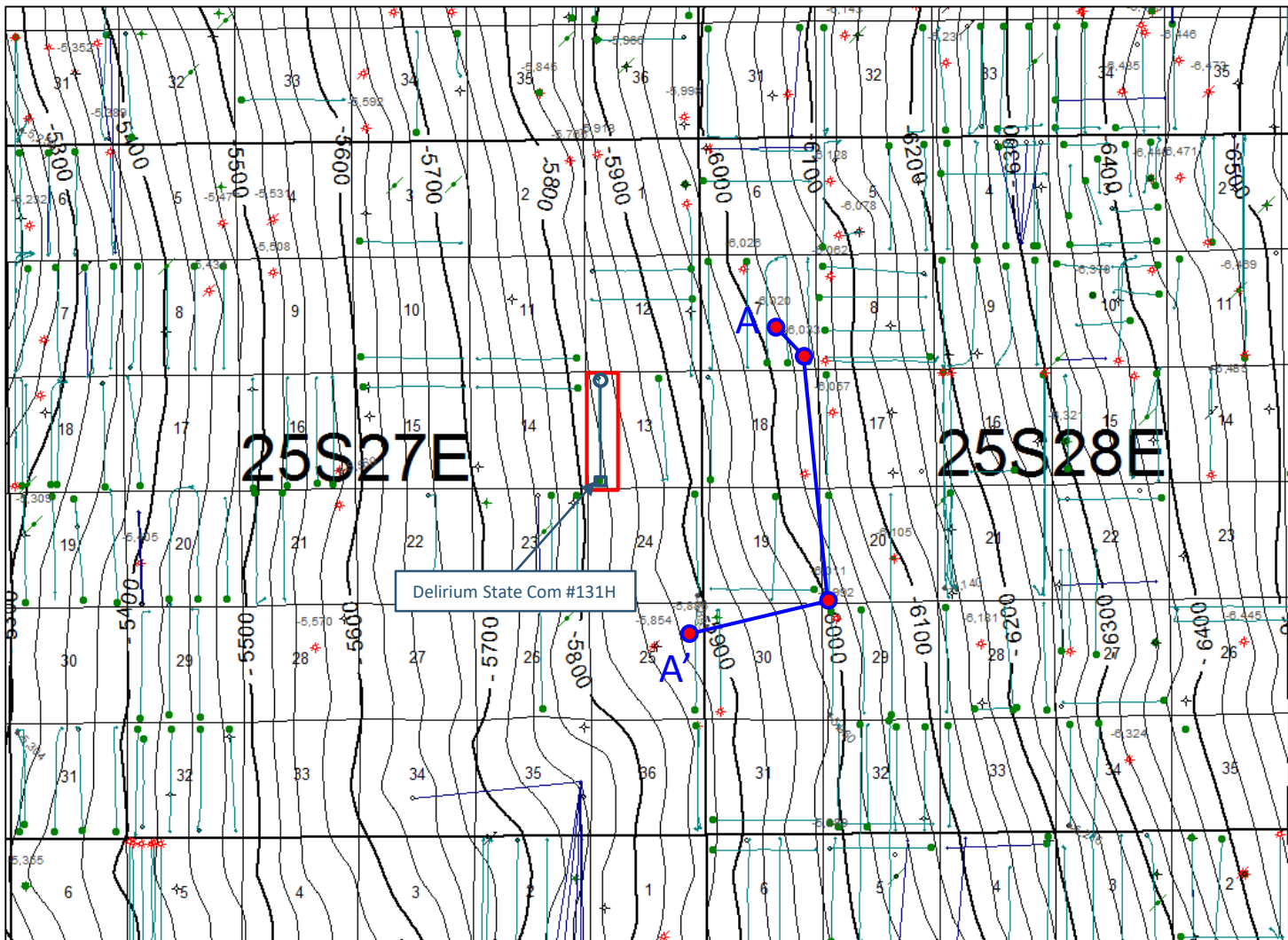
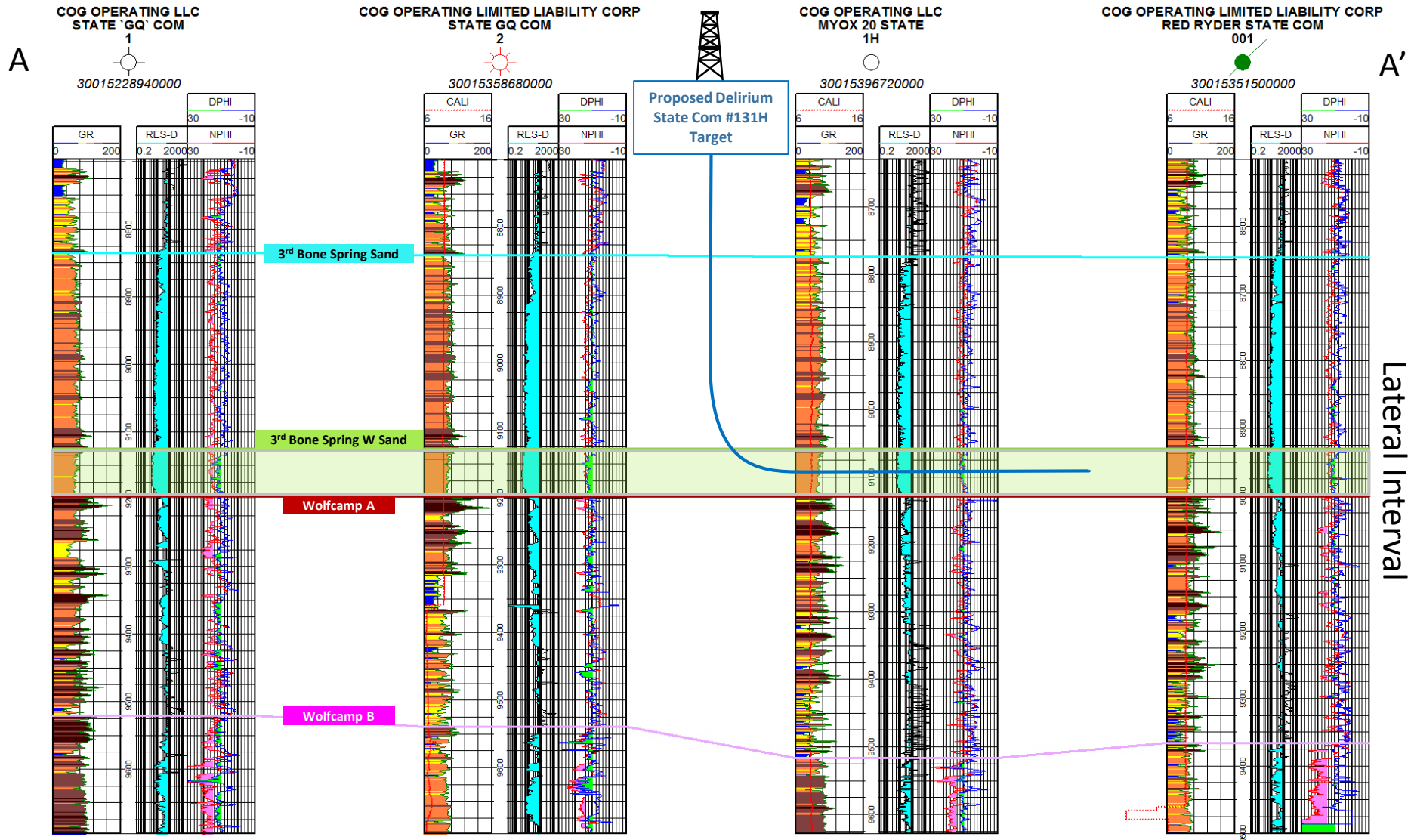


EXHIBIT No. 7
Tap Rock Resources Delirium
State Com #131H
Case Nos. 20320
April 4, 2019 Hearing

Stratigraphic Cross-Section - A-A'



1" = 25'

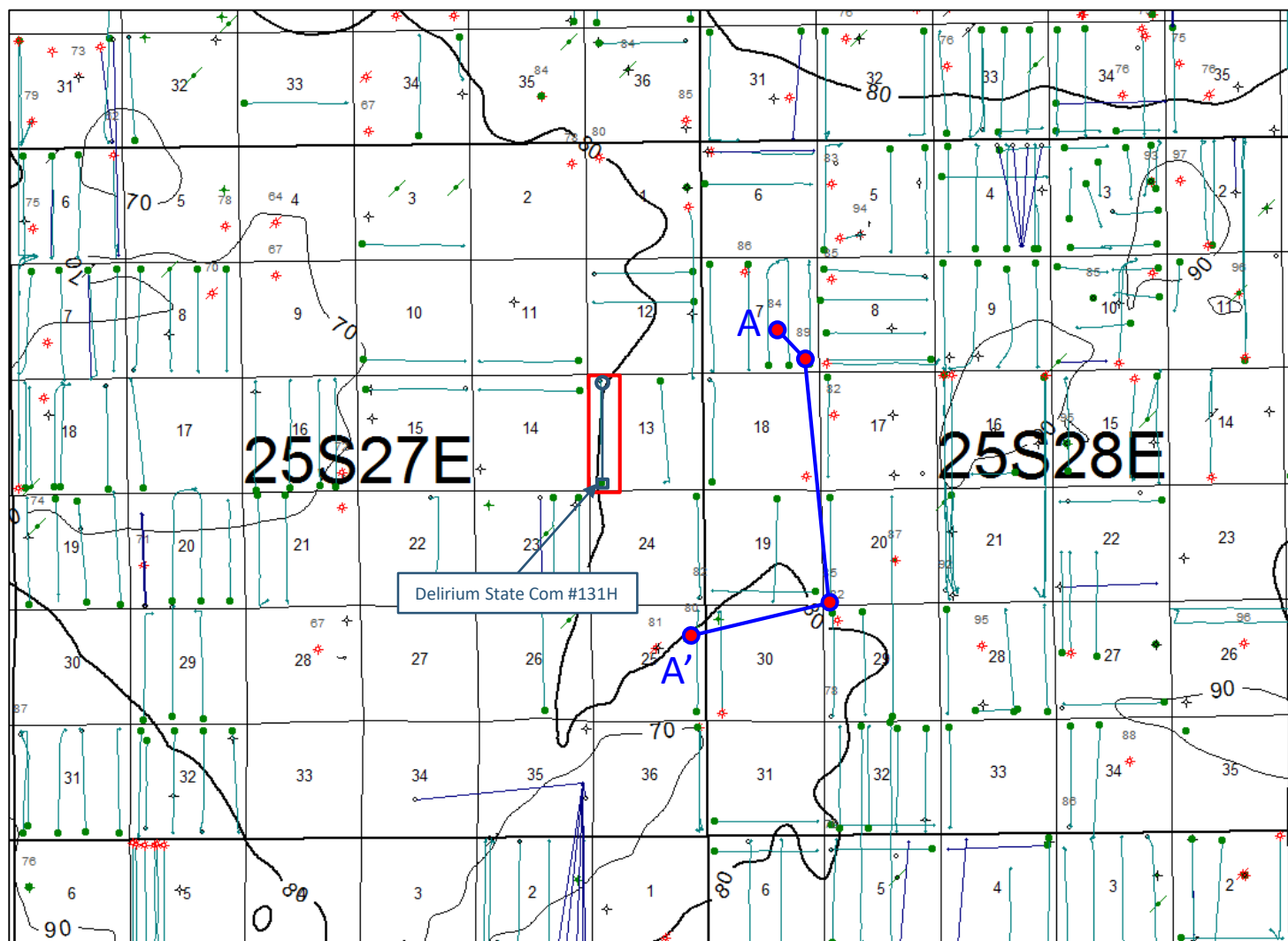
Delirium State Com #131H

Case No. 20320

EXHIBIT No. 8
Tap Rock Resources Delirium
State Com #131H
Case Nos. 20320
April 4, 2019 Hearing



Isopach Map (3rd Bone Spring W Sand to Wolfcamp A)



Map Legend

SHL □ Tap Rock –
Horizontal Locator

BHL ○

Spacing Unit

C.I. = 10'

● 3rd Bone Spring Sand Target

EXHIBIT No. 9
Tap Rock Resources
Delirium State Com #131H
Case Nos. 20320
April 4, 2019 Hearing

Delirium State Com #131H (1 mile S-N Lateral)

Delirium State Com #131H
Surface Hole: 334' FSL & 876' FWL of sec 13-25S-27E
Bottom Hole: 5' FNL & 990' FWL of sec 13-25S-27E

**Diagram not to scale*

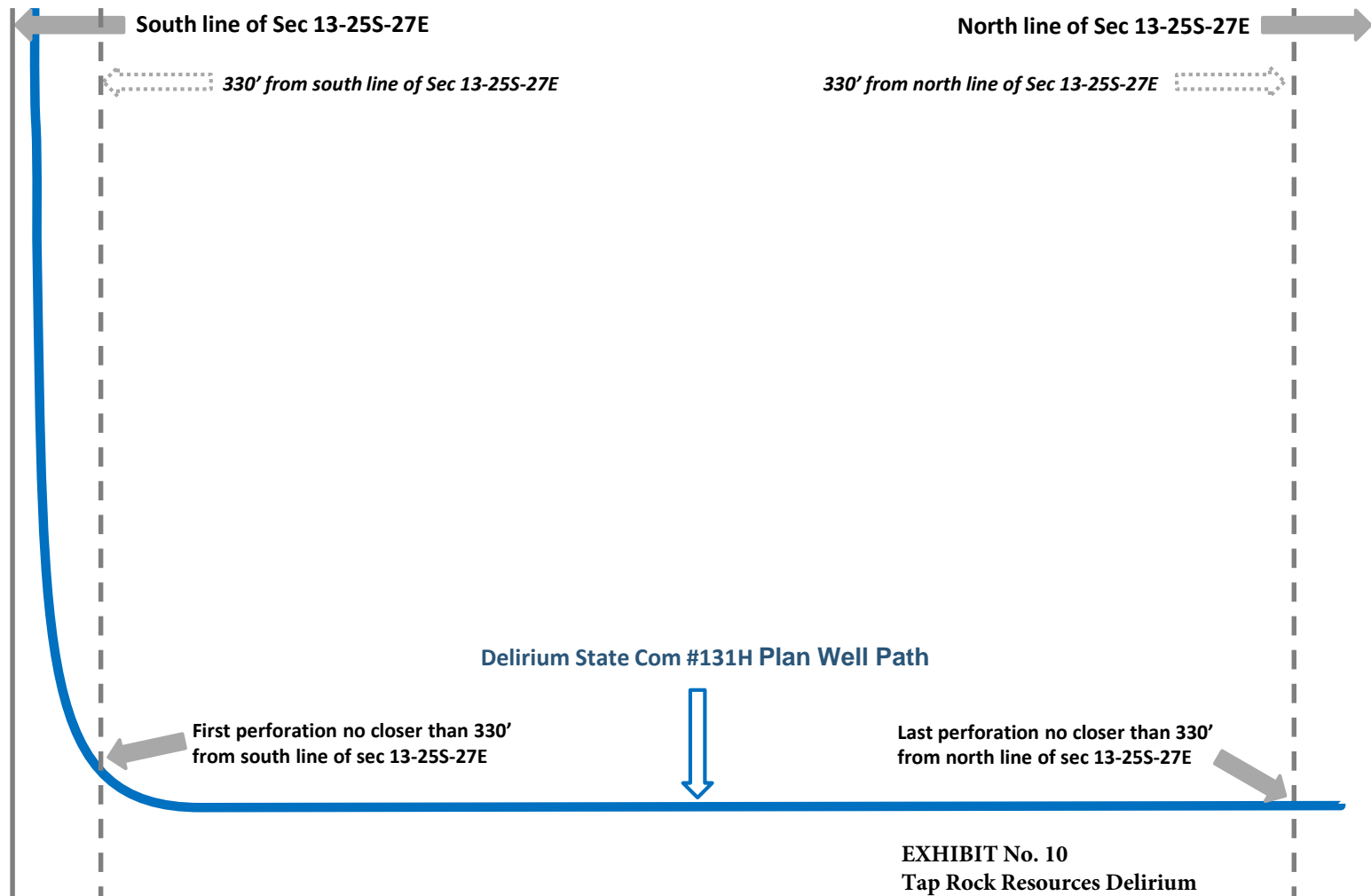


EXHIBIT No. 10
Tap Rock Resources Delirium
State Com #131H
Case Nos. 20320
April 4, 2019 Hearing