

**CASE NO. 21107**

**APPLICATION OF TAP ROCK RESOURCES, LLC TO ALLOW IT TO DRILL INFILL  
WELLS UNDER DIVISION ORDER NO. R-20583, LEA COUNTY, NEW MEXICO**

**EXHIBITS**

- A. Existing Pooling Order
- B. Rule Regarding Well Proposal by Working Interest Owner
- C. Application and Proposed Ad
- D. Landman's Affidavit
- E. Geologist's Affidavit
- F. Affidavit of Notice (Affidavit of Publication Not Needed)
- G. Pooling Checklist

**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 TO  
CONSIDER:**

**CASE NO. 20224  
ORDER NO. R-20538**

**APPLICATION OF COG OPERATING LLC FOR COMPULSORY POOLING, LEA  
COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on February 7, 2019, at Santa Fe, New Mexico, before Examiner Scott A. Dawson.

NOW, on this 15<sup>th</sup> day of May, 2019, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

**FINDS THAT**

(1) Due public notice has been given and the Division has jurisdiction of this case and the subject matter.

(2) COG Operating LLC (the "Applicant or COG") seeks approval of a standard 320-acre horizontal spacing unit (the "Unit") in the Bone Spring formation, Red Hills; Bone Spring, North (Pool code 96434), comprising the W/2 E/2 and E/2 W/2 of Section 11, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico. Applicant further seeks an order pooling all uncommitted interests in the Unit for the Bone Spring formation.

(3) The Unit will be dedicated to the Van Gogh Fee Well No. 101H ("Proposed Well": API No. 30-025-45255), a horizontal well to be drilled from a surface location, 210 feet from the North line and 2630 feet from the East line (Unit B), to a terminus 50 feet from the South line and 2630 feet from the East line (Unit O) of Section 11, Township 24 South, Range 34 East. The completed interval for the proposed well within the Unit will be standard.

(4) The Proposed Well will be drilled horizontally and completed in the Bone Spring formation [Red Hills; Bone Spring, North]. Said pool is subject to Division Rule 19.15.15.9(A) NMAC, which provides for standard 40-acre spacing and proration units each comprising a governmental quarter-quarter section.

EXHIBIT **A**



(5) Devon appeared at the hearing through counsel but did not oppose this application. No other party entered an appearance in this case or otherwise opposed this application.

(6) Applicant appeared through counsel and presented the following land and technical evidence:

- (a) The Bone Spring formation in this area is suitable for development by horizontal drilling.
- (b) The proposed orientation of the horizontal well or wells from north to south is appropriate for the Unit.
- (c) Applicant requests that participating tracts be incorporated into the Unit, creating a 320-acre Unit.
- (d) The first take point for the Proposed Well is expected to be 100 feet from the North line and 2630 feet from the East line (Unit B), and the final take point is located 100 feet from the South line and 2630 feet from the East line (Unit O) of Section 11, Township 24 South, Range 34 East.
- (e) Incorporating the proximity tracts, the completed interval of the Proposed Well will be orthodox.
- (f) All quarter-quarter sections to be included in the Unit are expected to be substantially productive in the Bone Spring formation, so that the Unit as requested will not impair correlative rights.
- (g) The target interval is the Bone Spring.
- (h) Applicant seeks to compulsory pool working interest owners and unleased mineral interest owners.
- (i) Those potentially affected parties whose whereabouts could not be ascertained were noticed by publication as provided in Rule 19.15.4.12.B NMAC.

The Division Concludes That

(7) The application in this case was filed, and the Well[s] were permitted, on or after the June 26, 2018 date on which amendments to 19.15.16.7 and 19.15.16.15 NMAC (prescribing new spacing rules for horizontal wells) became effective (see Order No. R-14689). Hence the Well[s] must be spaced, permitted and drilled pursuant to 19.15.16.15 NMAC, as amended effective June 26, 2018.

(8) If the location of any of the proposed wells is unorthodox when any of the wells are completed under the spacing rules then in effect and applicable to the well, the operator must obtain a non-standard location approval prior to producing the well

(9) Two or more separately owned tracts are embraced within the Unit, and/or there are royalty interests and/or undivided interests in oil and gas minerals in one or more tracts included in the Unit that are separately owned.

(10) Applicant is owner of an oil and gas working interest within the Unit. Applicant has the right to drill and proposes to drill the proposed well to a common source of supply within the Unit at the described location.

(11) There are interest owners in the Unit that have not agreed to pool their interests.

(12) Applicant is asking for inclusion of offsetting quarter-quarter section equivalents (proximity tracts) located to the west (E/2 W/2) of section 11, resulting in 320-acre horizontal oil spacing unit, pursuant to Subparagraph (b) of Paragraph (1) of Subsection B of 19.15.16.15 NMAC. Based on the completed interval of the Proposed Well, the proposed Unit should be allowed.

(13) Applicant should be allowed a one-year period after commencing drilling of the Well(s), provided Applicant shall provide a Sundry notice no later than 10 days after the Proposed Well has been drilled that each tract comprising the Unit has been penetrated by one or more wells capable of producing oil or gas. If the Applicant does not meet this requirement, then this Order should be null and void

(14) To avoid the drilling of unnecessary wells, protect correlative rights, prevent waste and afford to the owner of each interest in the Unit the opportunity to recover or receive without unnecessary expense a just and fair share of hydrocarbons, this application should be approved by pooling all uncommitted interests, whatever they may be, in the oil and gas within the Unit.

(15) COG Operating LLC (OGRID 229137) should be designated the operator of the proposed well and the Unit.

(16) Infill wells within the Unit should be subject to Division Rules 19.15.13.9 NMAC through 19.15.13.10 NMAC, and to the terms and conditions of this order.

(17) Any pooled working interest owner who does not pay its share of estimated well costs of any well should have withheld from production from such well its share of reasonable well costs plus an additional 200% thereof as a reasonable charge for the risk involved in drilling the proposed well.

(18) Reasonable charges for supervision (combined fixed rates) should be fixed at \$7000 per month, per well, while drilling and \$700 per month, per well, while producing, provided that



these rates should be adjusted annually pursuant to the overhead adjustment provision of the COPAS form titled "*Accounting Procedure-Joint Operations*."

**IT IS THEREFORE ORDERED THAT**

(1) All uncommitted interests, whatever they may be, in the oil and gas within the following described spacing unit ("the Unit") are hereby pooled:

A Horizontal Spacing Unit comprising 320 acres within the Red Hills; Bone Spring, North (Pool code 96434) and all other pools hereafter defined within the Bone Spring formation in the W/2 E/2 and E/2 W/2 of Section 11, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico.

(2) The Unit will be dedicated to the Van Gogh Fee Well No. 101H ("Proposed Well": API No. 30-025-45255), a horizontal well to be drilled from a surface location, 210 feet from the North line and 2630 feet from the East line (Unit B), to a terminus 50 feet from the South line and 2630 feet from the East line (Unit O) of Section 11, Township 24 South, Range 34 East. The completed interval for the proposed well within the Unit will be standard.

(3) If any of the Well[s] is completed at an unorthodox location under applicable rules in effect at the time such well is completed, the operator shall provide notice and apply administratively for a location exception prior to producing the well.

(4) The operator of the Unit shall commence drilling the proposed well on or before April 30, 2020 and shall thereafter continue drilling the proposed well with due diligence to test the Bone Spring formation.

(5) In the event the operator does not commence drilling the proposed well on or before the date provided in the foregoing paragraph, the compulsory pooling provision of this order shall be of no effect, unless the operator obtains a written time extension from the Division Director pursuant to a written request stating its reasons for such extension and attaching satisfactory evidence.

(6) If any of the Well[s] is not completed within one-year of commencement of drilling operations pursuant to this order, then the compulsory pooling provisions of this order shall be of no further effect as to such well unless operator obtains a written time extension from the Division Director pursuant to a written request stating its reasons for such extension and attaching satisfactory evidence.

(7) The operator shall provide a copy of any request for extension of time to drill or complete any well filed with the Director pursuant to this order to each pooled working interest owner who has elected to participate in the drilling of any well that is the subject of the request. Such copy shall be sent at the same time the request is sent to the Director.



(8) Upon final plugging and abandonment of the proposed wells and any other well drilled on the Unit pursuant to Division Rule 19.15.13.9 NMAC, the pooled Unit shall terminate, unless this Order has been amended to authorize further operations.

(9) Infill wells within the Unit shall be subject to Division Rule 19.15.13.9 NMAC and to the terms and conditions of this order.

(10) COG Operating LLC (OGRID 229137) is hereby designated the operator of the proposed wells and the Unit.

(11) After pooling, uncommitted working interest owners are referred to as pooled working interest owners. ("Pooled working interest owners" are owners of working interests in the Unit, including unleased mineral interests, who are not parties to an operating agreement governing the Unit.) After the effective date of this order, the operator shall furnish the Division and each known pooled working interest owner in the Unit a separate itemized schedule of estimated costs of drilling, completing and equipping the proposed well ("well costs").

(12) Within 30 days from its receipt of the schedule of estimated well costs for any well, any pooled working interest owner shall have the right to pay its share of estimated well costs of such well to the operator in lieu of paying its share of reasonable well costs out of production as hereinafter provided, and any such owner who pays its share of estimated well costs as provided above for any well shall remain liable for operating costs but shall not be liable for risk charges for such well. Pooled working interest owners who elect not to pay their share of estimated well costs as provided in this paragraph shall thereafter be referred to as "non-consenting working interest owners."

(13) The operator shall furnish the Division and each known pooled working interest owner (including non-consenting working interest owners) an itemized schedule of actual well costs of each well within 90 days following completion of the proposed well. If no objection to the actual well costs is received by the Division, and the Division has not objected, within 45 days following receipt of the schedule, the actual well costs shall be deemed to be the reasonable well costs. If there is an objection to actual well costs within the 45-day period, the Division will determine reasonable well costs after public notice and hearing.

(14) Within 60 days following determination of reasonable well costs for any well, any pooled working interest owner who has paid its share of estimated costs of such well or wells in advance as provided above shall pay to the operator its share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator the amount, if any, that the estimated well costs it has paid exceed its share of reasonable well costs.

(15) The operator is hereby authorized to withhold the following costs and charges from each non-consenting working interest owner's share of production from each well:

- (a) The proportionate share of reasonable well costs attributable to such interest; and



- (b) As a charge for the risk involved in drilling the well, 200% of the above costs.

(16) The operator shall distribute the costs and charges withheld from production, proportionately, to the parties who advanced the well costs.

(17) Reasonable charges for supervision (combined fixed rates) are hereby fixed at \$7000 per month, per well, while drilling and \$700 per month, per well, while producing, provided that these rates may, at the election of the operator, be adjusted annually pursuant to the overhead adjustment provisions of the COPAS form titled "*Accounting Procedure-Joint Operations*." The operator is authorized to withhold from each pooled working interest owner's share of production from each well the proportionate share of both the supervision charges and the actual expenditures required for operating such well, not more than what are reasonable.

(18) During the cost recovery period, the operator shall furnish to the Division and to each known non-consenting pooled working interest owner, annually, and within 90 days after payout occurs, a schedule of all revenues attributable to each proposed well, and all charges for supervision and operating costs charged against such revenues. Operating costs shall include all reasonable costs incurred for the maintenance and operation of the well, except for "well costs" reported pursuant to requirements herein, that are properly chargeable to the joint account pursuant to COPAS procedures. If no objection to the operating costs is received by the Division, and the Division has not objected, within 45 days following receipt of any schedule, the costs shall be deemed to be the reasonable operating costs. If there is an objection to the accuracy or reasonableness of operating costs reported within the 45-day period, the Division will determine reasonable operating costs after public notice and hearing.

(19) The operator shall distribute the costs and charges withheld from production, proportionately, to the parties who advanced the well costs for such well.

(20) Except as provided above, all proceeds of production from the proposed well that are not disbursed for any reason shall be held for the account of the person or persons entitled thereto pursuant to the Oil and Gas Proceeds Payment Act (NMSA 1978 Sections 70-10-1 through 70-10-6, as amended). If not disbursed, such proceeds shall be turned over to the appropriate authority as and when required by the Uniform Unclaimed Property Act (NMSA 1978 Sections 7-8A-1 through 7-8A-31, as amended).

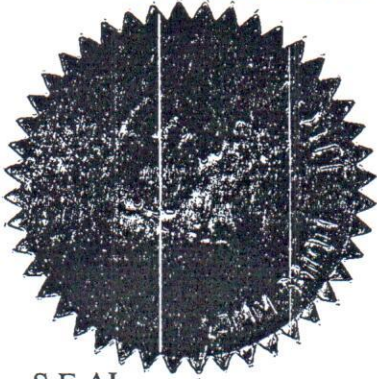
(21) Any unleased mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for allocating costs and charges under this Order. Any costs that are to be paid out of production shall be withheld only from the working interests' share of production, and no costs shall be withheld from production attributable to royalty interests.

(22) Should all the parties to this compulsory pooling order reach voluntary agreement after entry of this order, this order shall thereafter be of no further effect.

(23) The operator of the well and the Unit shall notify the Division in writing of the subsequent voluntary agreement of any party subject to the compulsory pooling provisions of this order.

(24) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



S E A L

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read 'Adrienne Sandoval', written over the printed name.

ADRIENNE SANDOVAL  
Director



with 19.15.4.13 NMAC, and shall have the burden to prove the justification for the risk charge sought by relevant geologic or technical evidence. The hearing examiner may allow a responding party who has not filed a pre-hearing statement, but who appears in person or by attorney at the hearing, to offer evidence in support of a different risk charge than that Subsection A of 19.15.13.8 NMAC provides, but in such cases the hearing examiner shall allow a continuance of the hearing, if requested, to enable the applicant to present rebuttal evidence.

[19.15.13.8 NMAC - Rp, 19.15.1.35 NMAC, 12/1/08]

**19.15.13.9 INFILL WELLS:** Whenever 19.15.15 NMAC or an applicable pool order authorizes one or more infill wells within a proration or spacing unit pooled by division or commission order pursuant to NMSA 1978, Section 70-2-17, either the operator or an owner of a pooled working interest may, at any time after completion of the initial well provided in the pooling order, propose drilling of an infill well.

[19.15.13.9 NMAC - Rp, 19.15.1.36 NMAC, 12/1/08]

**19.15.13.10 PROPOSAL BY THE OPERATOR:**

A. If the operator proposes an infill well, it shall notify each pooled working interest owner of the proposal by certified mail, return receipt requested, specifying the proposed well's location and depth and including a schedule of estimated well costs and a statement of each pooled working interest owner's gross working interest percentage.

B. Each pooled working interest owner may elect to participate in the proposed infill well by notice in writing to the operator within 30 days after the owner receives the proposal, provided that the election to participate shall not be effective unless the owner so electing pays to the operator the amount of the owner's share of estimated well costs within 30 days after the date of transmission of its notice of election to participate.

C. A pooled working interest owner not electing to participate in the proposed infill well shall be deemed to have elected to become a non-consenting owner with respect to the infill well. The operator shall withhold from the proceeds of the well's production accruing to the working interest of a non-consenting owner the non-consenting owner's share of costs, as defined in 19.15.13 NMAC, of the infill well, together with a risk charge computed at the same rate as provided in the pooling order with respect to the initial well. The operator shall distribute the amounts withheld from the non-consenting owner's share of production for well costs and risk charges proportionately to the persons who have advanced the infill well's cost.

D. Unless it withdraws the proposal the operator shall commence drilling of the proposed infill well no later than 120 days after the expiration of the initial notice period of 30 days. The director may extend the time for commencement of drilling once for not more than an additional 120 days, upon showing of good cause for the extension, without notice or hearing. If the operator has not commenced drilling within the time provided no election previously made shall be binding on a party. If the operator still desires to drill the infill well, it shall resubmit written notice proposing the well as if no prior proposal had been made.

[19.15.13.10 NMAC - Rp, 19.15.1.36 NMAC, 12/1/08]

**19.15.13.11 PROPOSAL BY POOLED WORKING INTEREST OWNER:**

A. If a pooled working interest owner proposes an infill well, it shall notify the operator of the proposal by certified mail, return receipt requested, specifying the proposed well's location and depth and including a schedule of estimated well costs. The proposing owner shall mail a copy of the proposal to each of the other pooled working interest owners, or their successors in title as identified by documents of record in the office of the clerk of the county where the proposed well will be located, at the same time that it mails the proposal to the operator.

B. The operator shall, within 60 days after receipt of such notice, either propose an infill well at the specified location and depth as an operator proposal pursuant to 19.15.13.10 NMAC, or notify the owner proposing the well that it declines to do so.

(1) If the operator proposes the well and fewer than all working interest owners elect to participate, the operator may withdraw the proposal unless the originally proposing owner, within 30 days of receipt of notice of such occurrence, advances the share of estimated well costs allocable to all non-consenting owners of pooled working interests.

(2) If the operator proposes the well and all owners consent to the well or the originally proposing owner advances the share of well costs allocable to an otherwise unsubscribed interest, the operator shall commence drilling the proposed infill well within 120 days after it receives notice that either condition has occurred. The director may extend the time for commencement of drilling once for not more than an additional 120 days, upon showing of good cause for the extension, without notice or hearing. Well costs applicable to a non-consenting owner of a pooled working interest, together with the risk charge provided in the original pooling order, shall be recoverable out of the non-consenting owner's share of production as in other cases.

C. If the operator declines to propose a well proposed to it by a pooled working interest owner or fails to commence the well within the time provided, the proposing owner may apply to the division for an order authorizing the drilling of the proposed infill well under the compulsory pooling order's terms. The owner filing the application shall give notice of the application as provided in 19.15.4.12 NMAC to the owners of working interests in the proration or spacing unit, including those whose interests in the proration or spacing unit are pooled by agreement, and, if the proration or spacing unit includes state, federal or tribal minerals, to the state land office or the BLM, as applicable.

[19.15.13.11 NMAC - Rp, 19.15.1.36 NMAC, 12/1/08]

**19.15.13.12 REFUND OF MONEY ADVANCED:** If the operator does not commence an infill well proposed pursuant to 19.15.13.10 NMAC within the time provided, including an extension the division allows, it shall refund amounts it received from a pooled party as advance payment of well costs for the well within 10 days after the expiration of the time provided for commencement of drilling, together with interest on the amount received calculated at the rate of bank of America prime plus three percentage points.

[19.15.13.12 NMAC - Rp, 19.15.1.36 NMAC, 12/1/08]

EXHIBIT

**B**



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

APPLICATION OF TAP ROCK RESOURCES, LLC  
TO ALLOW IT TO DRILL INFILL WELLS UNDER  
DIVISION ORDER NO. R-20538, LEA COUNTY,  
NEW MEXICO.

Case No. 21107

APPLICATION

Tap Rock Resources, LLC applies for an order allowing it to drill infill wells in the Bone Spring formation underlying a (proximity tract) horizontal spacing unit comprised of the E/2W/2 and the W/2E/2 of Section 11, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico, and in support thereof, states:

1. Applicant is a working interest owner in the E/2W/2 and the W/2E/2 of Section 11.
2. The Bone Spring formation underlying the E/2W/2 and the W/2E/2 of Section 11 is subject to compulsory pooling order No. R-20538 issued to COG Operating LLC.
3. Under NMAC 19.15.13.9 through 11, applicant proposes to drill the Mandelbaum Fee Well Nos. 122H, 123H, 142H, 143H, 192H, and 193H to a depth sufficient to test the Bone Spring formation, and dedicate the E/2W/2 and the W/2E/2 of Section 11 to the wells.
4. Applicant has in good faith sought to obtain voluntary joinder of all other mineral interest owners in the E/2W/2 and the W/2E/2 of Section 11.
5. Although applicant attempted to obtain to obtain voluntary agreements from all mineral interest owners to participate in the drilling of the wells or to otherwise commit their interests to the wells, certain interest owners have failed or refused to join in dedicating their interests. Therefore, applicant seeks an order allowing it to drill the above wells in the Bone

EXHIBIT

C



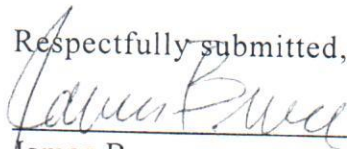
Spring formation underlying the E/2W/2 and the W/2E/2 of Section 11, pursuant to NMSA 1978 §70-2-17.

6. The drilling of the infill wells in the Bone formation underlying the E/2W/2 and the W/2E/2 of Section 11 will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

WHEREFORE, applicant requests that, after notice and hearing, the Division enter its order:

- A. Allowing it to drill infill wells Bone Spring formation underlying the E/2W/2 and the W/2E/2 of Section 11;
- B. Designating Tap Rock Operating, LLC as operator of the wells;
- C. Considering the cost of drilling and completing the wells, and allocating the costs thereof among the wells' working interest owners;
- D. Approving actual operating charges and costs charged for supervision, together with a provision adjusting the rates pursuant to the COPAS accounting procedure; and
- E. Setting a 200% charge for the risk assumed by applicant in drilling and completing the wells in the event a working interest owner elects not to participate in the wells.

Respectfully submitted,

  
James Bruce  
Post Office Box 1056  
Santa Fe, New Mexico 87504  
(505) 982-2043

*jamesbruc@aol.com*

Attorney for Tap Rock Resources, LLC

PROPOSED ADVERTISEMENT

Case No. \_\_\_\_\_:

*Application of Tap Rock Resources, LLC to allow it to drill infill wells under Division Order No. R-20583, Lea County, New Mexico.* Tap Rock Resources, LLC seeks an order allowing it to drill infill wells in the Bone Spring formation underlying a (proximity tract) horizontal spacing unit comprised of the E/2W/2 and the W/2E/2 of Section 11, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico. The well unit is subject to Division Order No. R-20538 issued to COG Operating LLC. The unit will be dedicated to the Mandelbaum Fee Well Nos. 122H, 123H, 142H, 143H, 192H, and 193H. Also to be considered will be the cost of drilling and completing the wells and the allocation of the cost thereof, as well as actual operating costs and charges for supervision, designation of Tap Rock Operating, LLC as operator of the wells, and a 200% charge for the risk involved in drilling and completing the wells. The unit is located approximately 17-1/2 miles northwest of Jal, New Mexico.



**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,  
LEA COUNTY, NEW MEXICO**

**Case Nos. 21107**

**AFFIDAVIT OF ERICA HIXSON**

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 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 applications 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. Marathon Oil Permian, LLC ("MRO") and COG Operating LLC ("COG") were contacted regarding the proposed well. Tap Rock continues to work toward a voluntary agreement with both COG and MRO.
7. Tap Rock seeks an order allowing it to drill infill wells in the Bone Spring formation underlying a HSU comprised of a 320 acre spacing unit in the E/2W/2 and the W/2E/2 of Section

11, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico. The HSU is subject to Division Order No. R-20538 issued to COG Operating LLC. The HSU will be dedicated to the Mandelbaum Fee Well Nos. 122H, 123H, 142H, 143H, 192H, and 193H, as the infill wells for the unit.

8. A proposed C-102 for each well is attached as **Exhibit 1 (A-F)**. The Wells will develop the Red Hills; Bone Spring North Pool (Pool Code 96434), which is an oil pool.

9. The proposed surface hole, bottom hole, and first take point for each well can be found in the attached **Exhibit 1**. The proposed total vertical depth for each well can be found in the attached **Exhibit 5**.

10. A tract map containing the composition of the HSU is attached hereto as **Exhibit 2** and shows that the HSU is comprised of one large fee tract. **Exhibit 3** is a tract list that shows the ownership composition of the one tract in the HSU.

11. The parties subject to the pooling and the nature of their interest are found in **Exhibit 4** attached hereto. **Exhibit 4** also includes information regarding working interest owners and the overriding royalty interest owner.

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

13. **Exhibit 5** is a sample well proposal letter and the Authority For Expenditure ("AFE") for each of the proposed Wells. The estimated cost of each 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.

14. I have conducted a diligent search of the public records in Lea County, New Mexico, where the Wells 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 AFE for each of the Wells.

15. Tap Rock has made a good faith effort to obtain voluntary joinder of the working interest owners in the proposed Wells. The well proposal letter details that the Wells were proposed under COG's existing pooling order for the HSU in this pool.

16. **Exhibit 6** is a summary of communication between Tap Rock and each of the parties subject to the pooling. Tap Rock plans to drill these Wells in order to satisfy its lease obligations. If voluntary joinder is reached between Tap Rock and any of the parties subject to pooling, it will notify the Division of such.

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 and operator of the HSU as it pertains to drilling infill wells under Division Order R-20538.

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.

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

Erica Hixson

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

4



# Exhibit 1A

Case No. 21107

1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources  
Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code	<sup>3</sup> Pool Name
	96434	Red Hills; Bone Spring North
<sup>4</sup> Property Code	<sup>5</sup> Property Name	<sup>6</sup> Well Number
	MANDELBAUM FEE	122H
<sup>7</sup> GRID No.	<sup>8</sup> Operator Name	<sup>9</sup> Elevation
	TAP ROCK OPERATING, LLC.	3502'

### <sup>10</sup>Surface Location

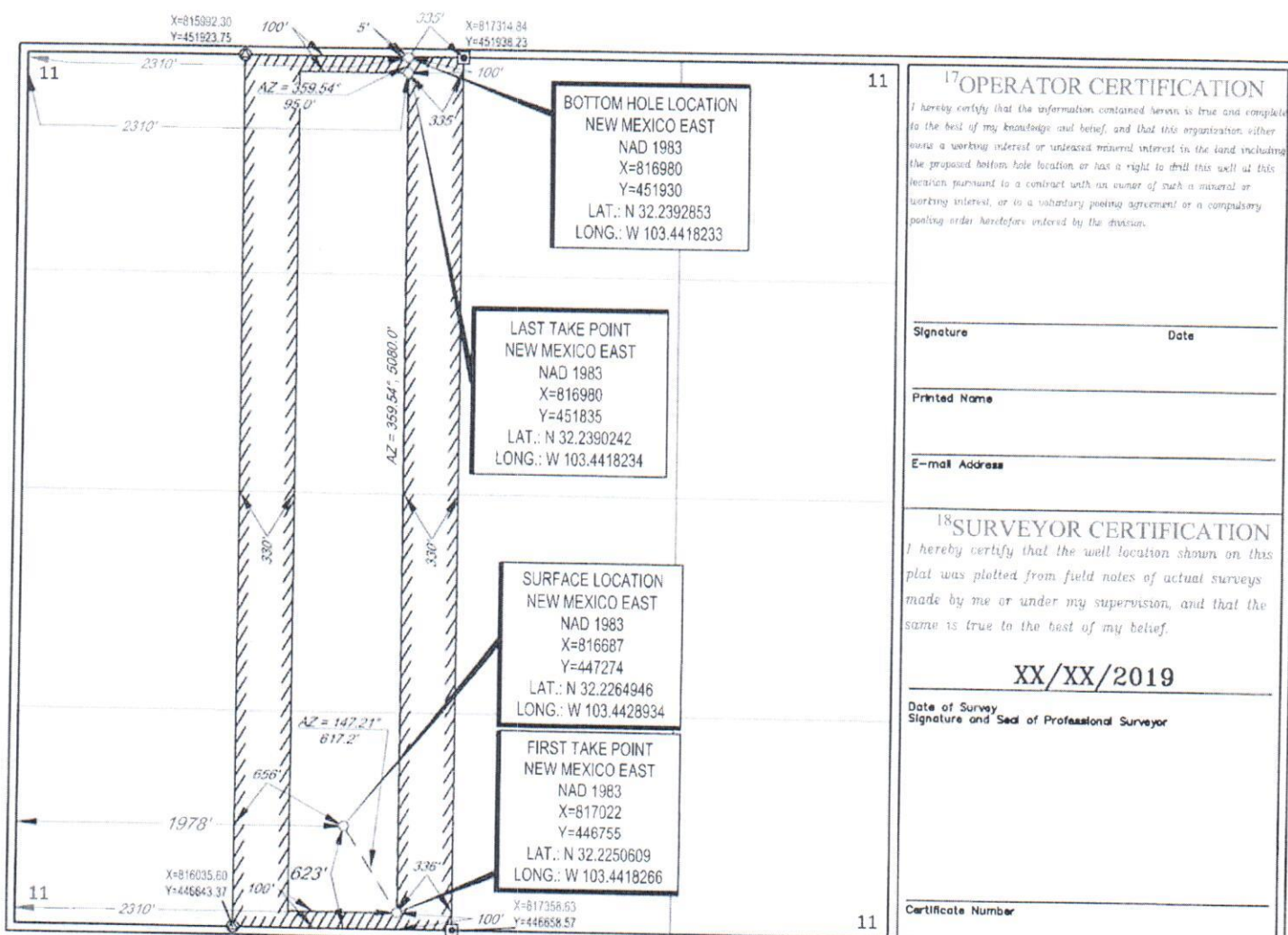
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	11	24-S	34-E	-	623'	SOUTH	1978'	WEST	LEA

### <sup>11</sup>Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	11	24-S	34-E	-	5'	NORTH	2310'	WEST	LEA

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



### <sup>17</sup>OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or in a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Printed Name \_\_\_\_\_

E-mail Address \_\_\_\_\_

### <sup>18</sup>SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true to the best of my belief.

XX/XX/2019

Date of Survey  
Signature and Seal of Professional Surveyor

Certificate Number



Case No. 21107

**District III**  
 000 Rio Brazos Road, Aztec, NM 87410  
 Phone: (505) 334-6178 Fax: (505) 334-6170

**District IV**  
 1220 S. St. Francis Dr., Santa Fe, NM 87505  
 Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources  
Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

Submit one copy to appropriate

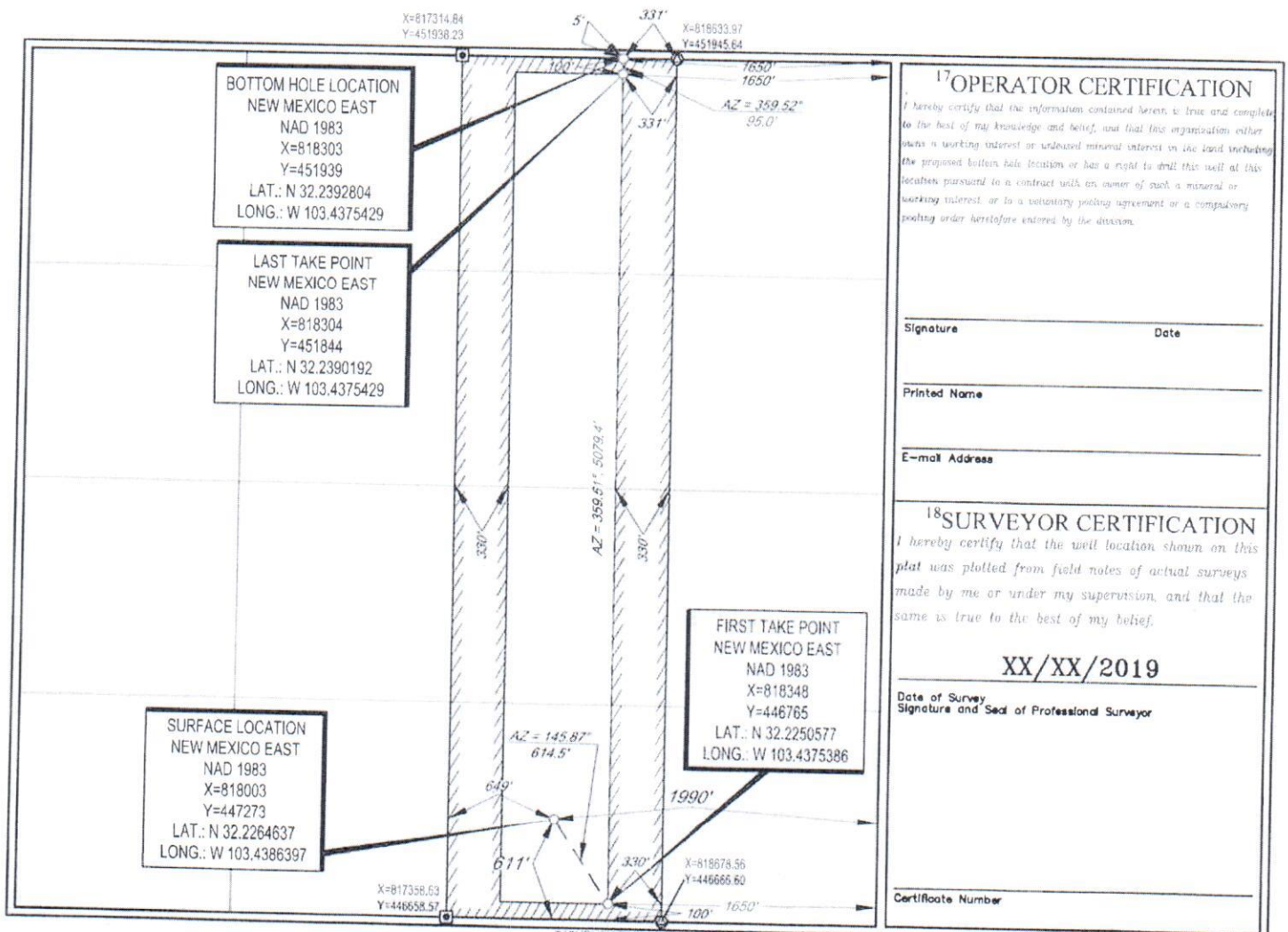
District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number		<sup>2</sup> Pool Code		<sup>3</sup> Pool Name					
		96434		Red Hills; Bone Spring North					
<sup>4</sup> Property Code		<sup>5</sup> Property Name							<sup>6</sup> Well Number
		MANDELBAUM FEE							123H
<sup>7</sup> OGRID No.		<sup>8</sup> Operator Name							<sup>9</sup> Elevation
		TAP ROCK OPERATING, LLC.							3481'
<sup>10</sup> Surface Location									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	11	24-S	34-E	-	611'	SOUTH	1990'	EAST	LEA
<sup>11</sup> Bottom Hole Location If Different From Surface									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	11	24-S	34-E	-	5'	NORTH	1650'	EAST	LEA
<sup>12</sup> Dedicated Acres		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.





# Exhibit 1C

Case No. 21107

Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code 96434	<sup>3</sup> Pool Name Red Hills; Bone Spring North
<sup>4</sup> Property Code	<sup>5</sup> Property Name <b>MANDELBAUM FEE</b>	<sup>6</sup> Well Number <b>142H</b>
<sup>7</sup> OGRID No.	<sup>8</sup> Operator Name <b>TAP ROCK OPERATING, LLC.</b>	<sup>9</sup> Elevation <b>3503'</b>

### <sup>10</sup>Surface Location

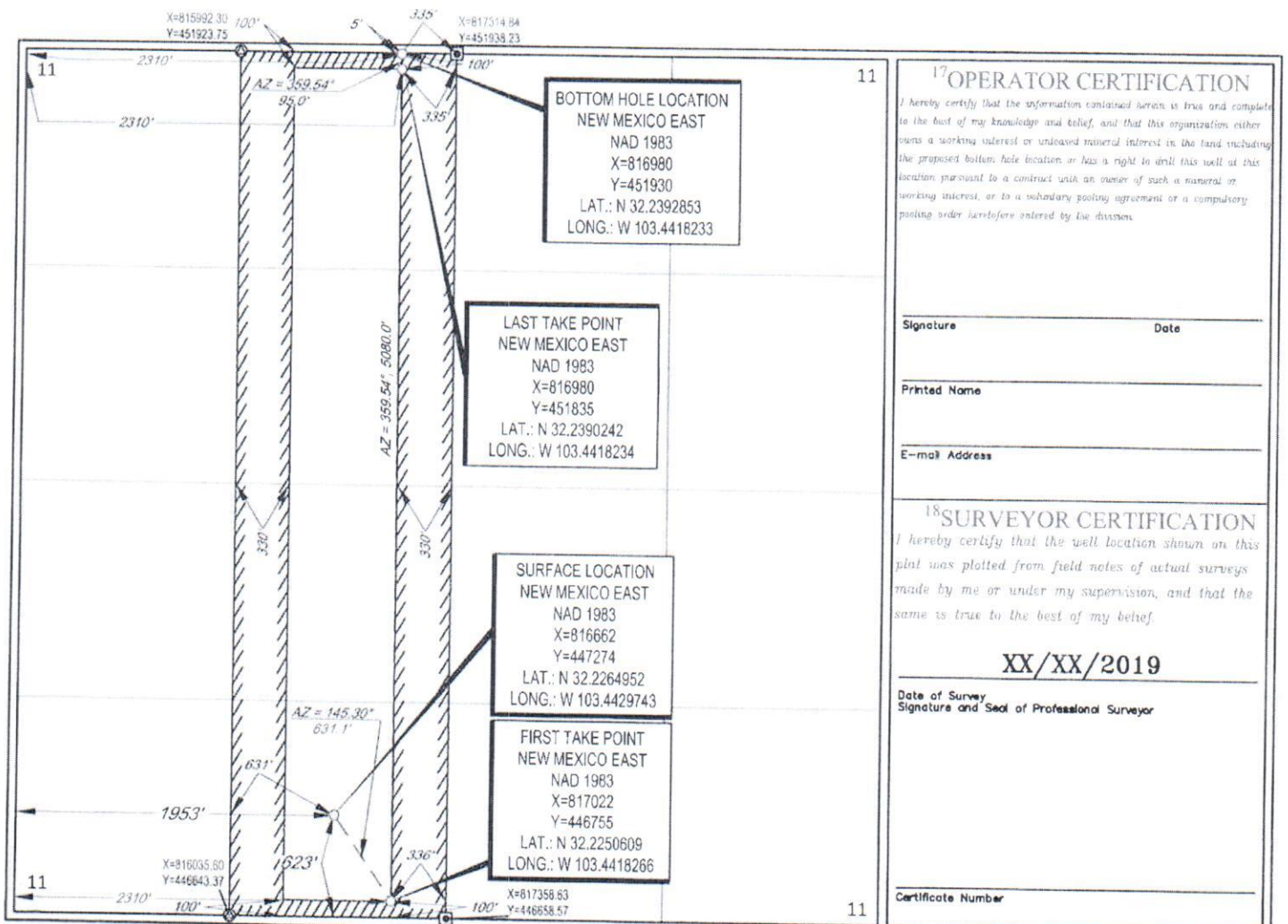
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	11	24-S	34-E	-	623'	SOUTH	1953'	WEST	LEA

### <sup>11</sup>Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	11	24-S	34-E	-	5'	NORTH	2310'	WEST	LEA

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
-------------------------------	-------------------------------	----------------------------------	-------------------------

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



## Case No. 21107

1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
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State of New Mexico  
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Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
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## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number		<sup>2</sup> Pool Code	<sup>3</sup> Pool Name
		96434	Red Hills; Bone Spring North
<sup>4</sup> Property Code	<sup>5</sup> Property Name		<sup>6</sup> Well Number
	MANDELBAUM FEE		143H
<sup>7</sup> OGRID No.	<sup>8</sup> Operator Name		<sup>9</sup> Elevation
	TAP ROCK OPERATING, LLC.		3481'

<sup>10</sup>Surface Location

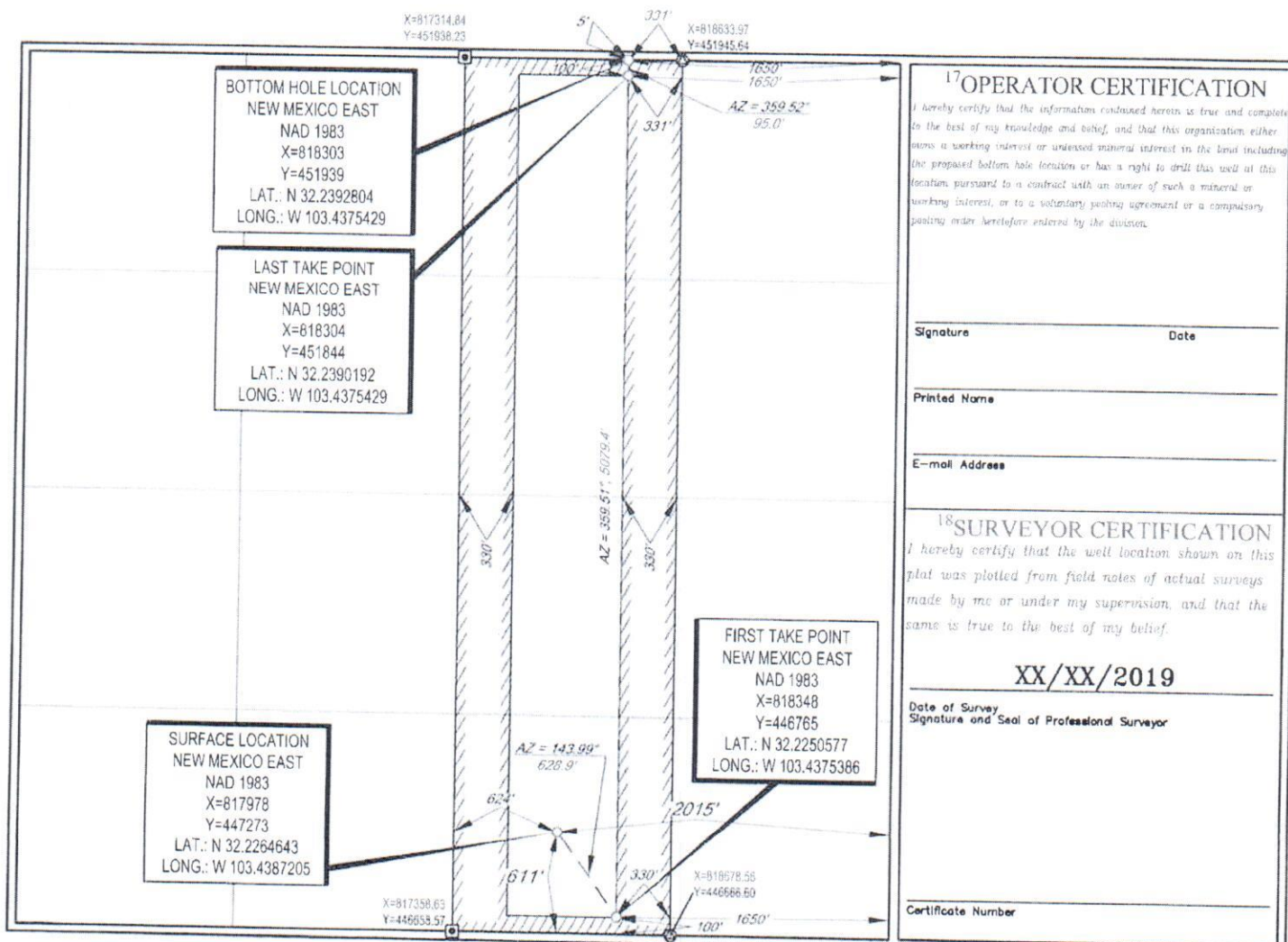
Surface Location									
UL, or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	11	24-S	34-E	-	611'	SOUTH	2015'	EAST	LEA

<sup>11</sup>Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot ldn	Feet from the	North/South line	Feet from the	East/West line	County
B	11	24-S	34-E	—	5'	NORTH	1650'	EAST	LEA

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
-------------------------------	-------------------------------	----------------------------------	-------------------------

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S:\SURVEY\TAPROCK\MANDELBAUM\_UNIT\FINAL\_PRODUCTS\LO\_MANDELBAUM\_FEE\_143H.DWG 11/15/2019 2:24:50 PM ehoriba



Case No. 21107

1000 Rio Brazos Road, Aztec, NM 87410  
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Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

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District Office

AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number		<sup>2</sup> Pool Code	<sup>3</sup> Pool Name
		96434	Red Hills; Bone Spring North
<sup>4</sup> Property Code	<sup>5</sup> Property Name		<sup>6</sup> Well Number
	MANDELBAUM FEE		192H
<sup>7</sup> OGRID No.	<sup>8</sup> Operator Name		<sup>9</sup> Elevation
	TAP ROCK OPERATING, LLC.		3503'

<sup>10</sup>Surface Location

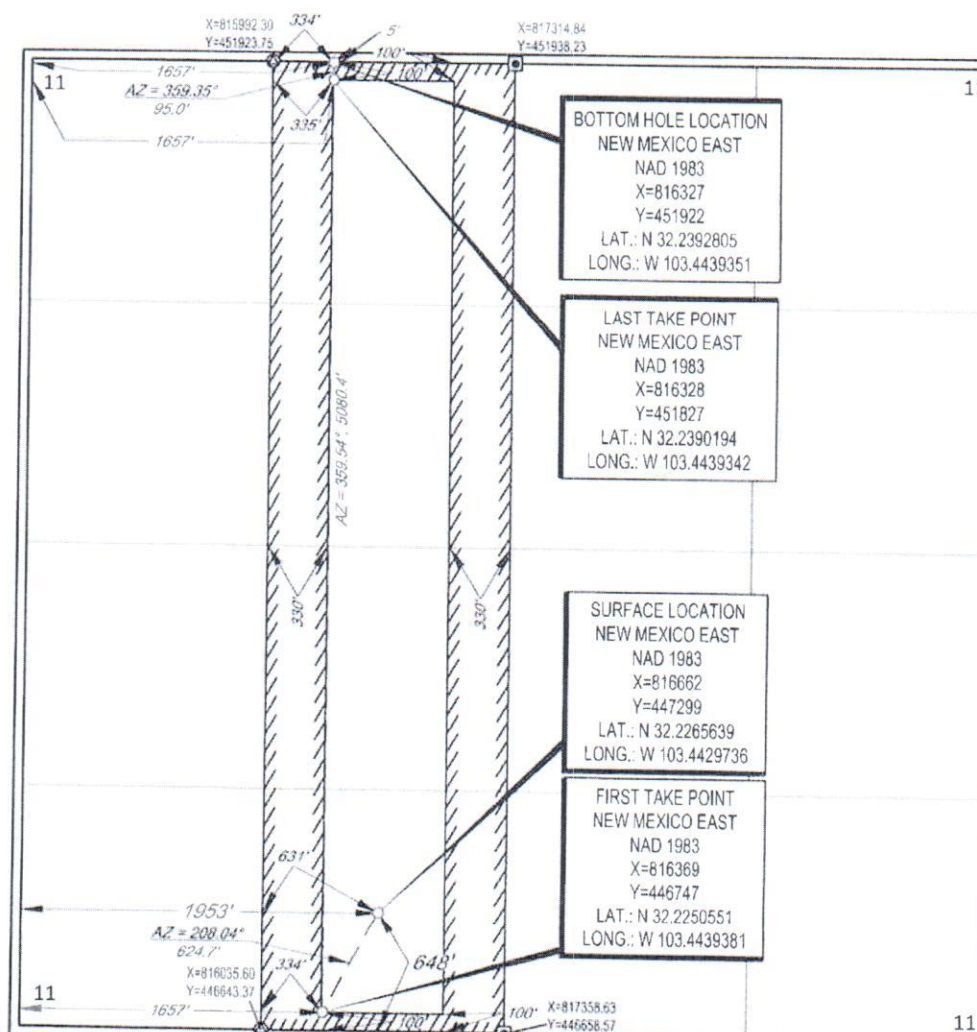
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	11	24-S	34-E	-	648'	SOUTH	1953'	WEST	LEA

<sup>11</sup>Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	11	24-S	34-E	-	5'	NORTH	1657'	WEST	LEA

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
-------------------------------	-------------------------------	----------------------------------	-------------------------

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



## 17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land underlying the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.

---

Signature \_\_\_\_\_ Date \_\_\_\_\_

Printed Name \_\_\_\_\_

E-mail Address \_\_\_\_\_

<sup>18</sup>SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true to the best of my belief.

XX/XX/2019

Date of Survey \_\_\_\_\_  
Signature and Seal of Professional Surveyor \_\_\_\_\_

Certificate Number

# Exhibit 1F

Case No. 21107

District III  
1000 Rio Brazos Road, Aztec, NM 87410  
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Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

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District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number	<sup>2</sup> Pool Code 96434	<sup>3</sup> Pool Name Red Hills; Bone Spring North
<sup>4</sup> Property Code	<sup>5</sup> Property Name MANDELBAUM FEE	<sup>6</sup> Well Number 193H
<sup>7</sup> GRID No.	<sup>8</sup> Operator Name TAP ROCK OPERATING, LLC.	<sup>9</sup> Elevation 3481'

### <sup>10</sup>Surface Location

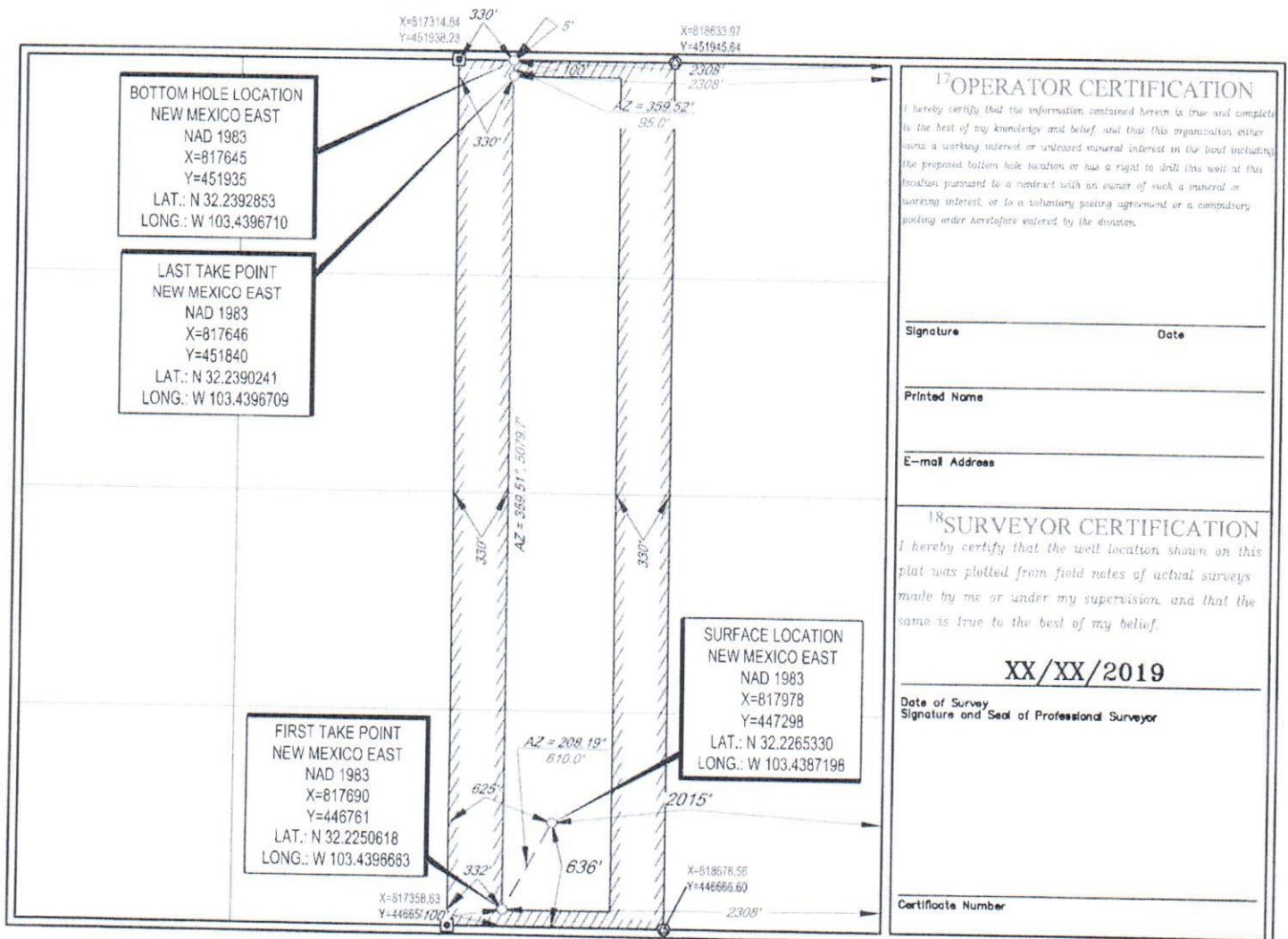
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	11	24-S	34-E	-	636'	SOUTH	2015'	EAST	LEA

### <sup>11</sup>Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	11	24-S	34-E	-	5'	NORTH	2308'	EAST	LEA

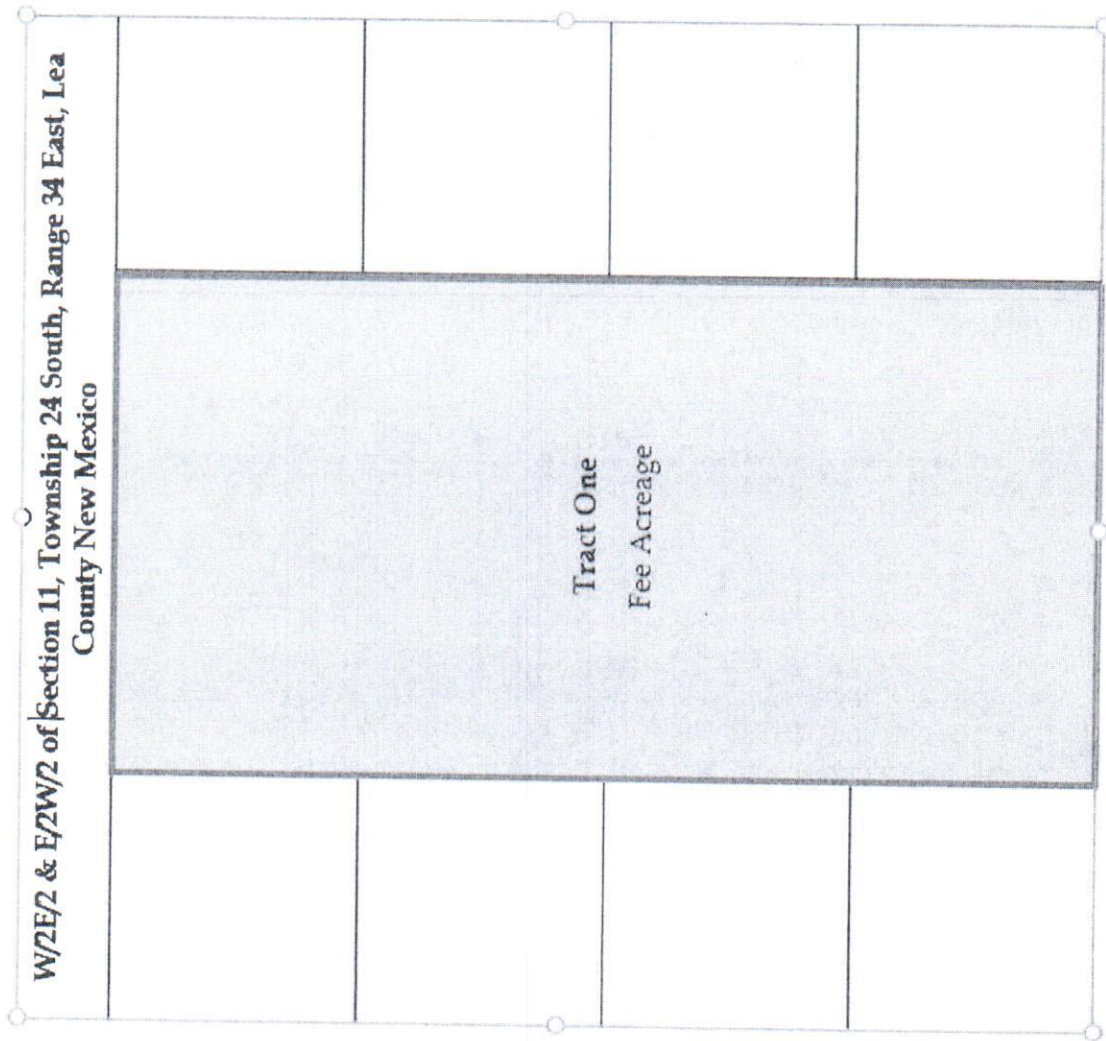
<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
-------------------------------	-------------------------------	----------------------------------	-------------------------

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# Tract Map



Fee Acreage



Mandelbaum  
Horizontal Spacing Unit

# Tract List



Tract #	Legal	Mineral Ownership Type	Lease Number	Owners
1	W/2E/2 and E/2W/2 of Section 11, T24S R34E	Fee	N/A	GAJH 1989 Limited Partnership c/o UMC Petroleum Corporation Energen Resources Corporation COG Operating LLC Franklin Mountain Energy II, LLC Marathon Oil Permian, LLC Crown Oil Partners VI, LLC; and, Crump Energy Partners III, LLC

\*final interest subject to division order title verification



# Unit Interest Breakdown\*



Entity	Interest Type	Approximate Percentage
Tap Rock Resources, LLC	Working Interest	10.156250%
COG Operating LLC	Uncommitted Working Interest	61.328125%
Marathon Oil Permian, LLC	Uncommitted Working Interest	17.394212%
Energen Resources Corporation	Unleased Mineral Interest	3.456038%
Crown Oil Partners VI, LLC; and, Crump Energy Partners III, LLC	Uncommitted Working Interest	3.128311%
GAJH 1989 Limited Partnership c/o UMC Petroleum Corporation	Unleased Mineral Interest	2.896439%
Franklin Mountain Energy II, LLC	Uncommitted Working Interest	1.640625%

## Overriding Royalty Interest

Stryker Energy, LLC

\*final interest subject to division order title verification



November 14, 2019

Via Certified Mail

Marathon Oil Permian, LLC  
Attn: Land Department  
5555 San Felipe Street  
Houston, TX 77056

**Re: Mandelbaum Well Proposals  
Township 24 South, Range 34 East, Section 11 E/2W/2 & W/2E/2  
Lea County, New Mexico**

Ladies and Gentlemen:

Tap Rock Operating, LLC (TRO), as Operator, previously proposed to drill the Mandelbaum #122H, #123H, #142, #143, #192, #193 (the "Bone Spring Wells") by letter dated October 4, 2019 (the "October 4<sup>th</sup> Proposal").

It has been brought to our attention that NMOCD Order #R-20538 (the "Order") designates COG Operating, LLC ("COG") as operator of a 320 acre horizontal spacing unit in the Bone Spring Formation, Red Hills; Bone Spring North (Pool Code 96434), comprising the W/2E/2 and E/2W/2 of Section 11, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico.

This letter serves as notice that TRO would like to rescind the October 4<sup>th</sup> Proposal only insofar as it pertains to the Bone Spring Wells and re-propose the Bone Spring Wells as a pooled working interest owner under the Order. Pursuant to the authority granted by NMAC 19.15.13.9-11, COG, within sixty (60) days of receipt of this letter, will either propose to drill the Bone Spring Wells as operator or decline to propose the Bone Spring Wells. Should COG choose the latter, TRO will apply to the OCD for an order granting TRO the authority to drill the Bone Spring Wells. TRO will provide notice of said application as provided in NMAC 19.15.4.12 to the owners of working interest in the spacing unit, including those whose interests are pooled by the Order.

Please note the following Mandelbaum #132H, #136H, #137H, #203H, #207H, #212H, #216H, and #217H wells (the "Wolfcamp Wells") were also contained in the October 4<sup>th</sup> Proposal. These Wolfcamp Wells are in the Antelope Ridge; Wolfcamp Pool (Pool Code 2220) and are therefore not subject to the Order. TRO will separately continue its development plans for these Wolfcamp Wells and is available to discuss your participation options in the Wolfcamp Wells.

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

Sincerely,

**TAP ROCK OPERATING, LLC**

*Erica Hixson*

**Erica Hixson**

Landman  
Office: 720-460-3316  
[ehixson@taprk.com](mailto:ehixson@taprk.com)

**Exhibit 5**

Case No. 21107



**TAP ROCK OPERATING, LLC**  
602 Park Point Dr, Golden, Colorado 80401  
Authorization For Expenditure

Name: Mandelbaum 122H  
AFE #: 0  
County: Lea  
State: NM

Date: September 30, 2019  
MD/TVD: 16410 / 11000  
Lateral Length: 4960  
Geologic Target: 2nd Bone Spring

**Well Description:**

Drill, complete, and equip a horizontal 2nd Bone Spring well with a 4960 foot lateral.

INTANGIBLE DRILLING COSTS			INTANGIBLE COMPLETION COSTS			INTANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
1 1	Land - Legal	10,000	2 1	Land - Legal		3 1	Land - Legal	
1 2	Land - Regulatory	5,000	2 2	Land - Regulatory		3 2	Land - Regulatory	
1 3	Land - Surface Damages	20,000	2 3	Land - Surface Damages		3 3	Land - Surface Damages	
1 4	Land - Survey	10,000	2 4	Land - Survey		3 4	Land - Survey	
1 5	Location/Pit Construction	140,000	2 5	Location/Pit Construction		3 5	Location/Pit Construction	5,000
1 6	Remedial Dirtwork	0	2 6	Remedial Dirtwork		3 6	Remedial Dirtwork	
1 7	Reserve/Frac Pit Closing	0	2 7	Reserve/Frac Pit Closing		3 7	Reserve/Frac Pit Closing	
1 8	Drilling - Contractor	493,192	2 8	Drilling - Contractor		3 8	Drilling - Contractor	
1 9	Mob/Rig Up - Contractor/Trucking	123,250	2 9	Mob/Rig Up - Contractor/Trucking		3 9	Mob/Rig Up - Contractor/Trucking	
1 10	Cementing Services	0	2 10	Cementing Services		3 10	Cementing Services	
1 11	Cementing Equipment	0	2 11	Cementing Equipment		3 11	Cementing Equipment	
1 12	Bits/Drill Out Assemblies	0	2 12	Bits/Drill Out Assemblies	55,536	3 12	Bits/Drill Out Assemblies	
1 13	Fluid Circulation Equipment/Services	85,885	2 13	Fluid Circulation Equipment/Services		3 13	Fluid Circulation Equipment/Services	
1 14	Fluids/Chemicals	50,000	2 14	Fluids/Chemicals	39,831	3 14	Fluids/Chemicals	
1 15	WBM Cuttings/Wastewater Disposal	133,928	2 15	WBM Cuttings/Wastewater Disposal		3 15	WBM Cuttings/Wastewater Disposal	
1 16	OBM Cuttings/Chemical Disposal	0	2 16	OBM Cuttings/Chemical Disposal		3 16	OBM Cuttings/Chemical Disposal	
1 17	Fuel/Power	124,683	2 17	Fuel/Power	825,000	3 17	Fuel/Power	
1 18	Water		2 18	Water	497,453	3 18	Water	
1 19	Directional Drilling	205,230	2 19	Directional Drilling		3 19	Directional Drilling	
1 20	Mud Logging	39,405	2 20	Mud Logging		3 20	Mud Logging	
1 21	Open/Cased/Production Hole Logs	0	2 21	Open/Cased/Production Hole Logs	10,550	3 21	Open/Cased/Production Hole Logs	
1 22	Coring	0	2 22	Coring		3 22	Coring	
1 23	Geologic Supervision	0	2 23	Geologic Supervision		3 23	Geologic Supervision	
1 24	Engineering Supervision	0	2 24	Engineering Supervision		3 24	Engineering Supervision	
1 25	Consultant Supervision	112,170	2 25	Consultant Supervision	100,000	3 25	Consultant Supervision	20,000
1 26	Freight/Transportation	20,000	2 26	Freight/Transportation	4,318	3 26	Freight/Transportation	10,000
1 27	Labor	0	2 27	Labor	15,940	3 27	Labor	85,000
1 28	Supplies - Surface	2,500	2 28	Supplies - Surface	4,318	3 28	Supplies - Surface	
1 29	Supplies - Living Quarters	1,700	2 29	Supplies - Living Quarters	4,318	3 29	Supplies - Living Quarters	
1 30	Rentals - Surface	53,802	2 30	Rentals - Surface	35,600	3 30	Rentals - Surface	
1 31	Rentals - Living Quarters	28,504	2 31	Rentals - Living Quarters	28,504	3 31	Rentals - Living Quarters	
1 32	Rentals - Downhole	0	2 32	Rentals - Downhole	0	3 32	Rentals - Downhole	
1 33	Rentals - Pipe & Handling Tools	0	2 33	Rentals - Pipe & Handling Tools	0	3 33	Rentals - Pipe & Handling Tools	
1 34	Rentals - Frac Stack		2 34	Rentals - Frac Stack	335,270	3 34	Rentals - Frac Stack	
1 35	Rentals - Frac Tanks		2 35	Rentals - Frac Tanks	89,500	3 35	Rentals - Frac Tanks	
1 36	Coil Tubing Unit/Workover Rig		2 36	Coil Tubing Unit/Workover Rig	107,852	3 36	Coil Tubing Unit/Workover Rig	70,000
1 37	Wireline/Slickline/Perforating		2 37	Wireline/Slickline/Perforating	252,560	3 37	Wireline/Slickline/Perforating	
1 38	Temporary Packers/Plugs		2 38	Temporary Packers/Plugs	30,500	3 38	Temporary Packers/Plugs	
1 39	High Pressure Pump Truck		2 39	High Pressure Pump Truck	100,000	3 39	High Pressure Pump Truck	
1 40	Stimulation		2 40	Stimulation	3,163,818	3 40	Stimulation	
1 41	Rentals - Pressure Control		2 41	Rentals - Pressure Control		3 41	Rentals - Pressure Control	
1 42	Flowback Services		2 42	Flowback Services	96,875	3 42	Flowback Services	
1 43	Water Transfer Services		2 43	Water Transfer Services	105,875	3 43	Water Transfer Services	
1 44	Flowback Water Trucking & Disposal		2 44	Flowback Water Trucking & Disposal	135,722	3 44	Flowback Water Trucking & Disposal	
1 45	Permanent Equipment Installation		2 45	Permanent Equipment Installation		3 45	Permanent Equipment Installation	
1 46	Pipeline Tapping Services		2 46	Pipeline Tapping Services		3 46	Pipeline Tapping Services	
1 47	Plugging & Abandonment	0	2 47	Plugging & Abandonment		3 47	Plugging & Abandonment	
1 51	Overhead	9,063	2 51	Overhead	22,559	3 51	Overhead	5,000
1 54	Insurance	29,538	2 54	Insurance		3 54	Insurance	
1 55	Contingency	83,958	2 55	Contingency	277,845	3 55	Contingency	19,500
TOTAL INTANGIBLE DRILLING COSTS:		\$1,763,951	TOTAL INTANGIBLE COMPLETION COSTS:		\$3,632,701	TOTAL INTANGIBLE PRODUCTION COSTS:		\$214,500

TANGIBLE DRILLING COSTS			TANGIBLE COMPLETION COSTS			TANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
4 60	Conductor Casing	0	5 60	Conductor Casing		6 60	Conductor Casing	
4 61	Surface Casing	42,599	5 61	Surface Casing		6 61	Surface Casing	
4 62	1st Intermediate Casing	35,263	5 62	1st Intermediate Casing		6 62	1st Intermediate Casing	
4 63	2nd Intermediate Casing	0	5 63	2nd Intermediate Casing		6 63	2nd Intermediate Casing	
4 64	Production Casing	307,488	5 64	Production Casing	77,500	6 64	Production Casing	
4 65	Tubing		5 65	Tubing		6 65	Tubing	60,000
4 66	Wellhead	0	5 66	Wellhead	40,000	6 66	Wellhead	43,500
4 67	Permanent Packers/Hangers/Plugs		5 67	Permanent Packers/Hangers/Plugs		6 67	Permanent Packers/Hangers/Plugs	5,000
4 68	Tanks		5 68	Tanks		6 68	Tanks	
4 69	Production Vessels		5 69	Production Vessels		6 69	Production Vessels	42,000
4 70	Compressors		5 70	Compressors		6 70	Compressors	
4 71	Surface Flowlines		5 71	Surface Flowlines		6 71	Surface Flowlines	50,000
4 72	Gathering Lines		5 72	Gathering Lines		6 72	Gathering Lines	10,000
4 73	Valves & Controllers		5 73	Valves & Controllers		6 73	Valves & Controllers	
4 74	Artificial Lift Equipment		5 74	Artificial Lift Equipment		6 74	Artificial Lift Equipment	25,000
4 75	Instrumentation & Measurement		5 75	Instrumentation & Measurement		6 75	Instrumentation & Measurement	
4 76	Electrical Grounding/Safety Equipment		5 76	Electrical Grounding/Safety Equipment		6 76	Electrical Grounding/Safety Equipment	
4 77	Permanent Equipment Installation		5 77	Permanent Equipment Installation		6 77	Permanent Equipment Installation	
4 80	Other - Surface		5 80	Other - Surface		6 80	Other - Surface	
4 81	Other - Downhole		5 81	Other - Downhole		6 81	Other - Downhole	
TOTAL TANGIBLE DRILLING COSTS:		\$503,549	TOTAL TANGIBLE COMPLETION COSTS:		\$62,500	TOTAL TANGIBLE PRODUCTION COSTS:		\$285,500
TOTAL DRILLING COSTS:		\$2,267,500	TOTAL COMPLETION COSTS:		\$3,695,201	TOTAL PRODUCTION COSTS:		\$500,000
						TOTAL WELL COST:		\$6,462,701

TAP ROCK RESOURCES COMPANY APPROVAL:

NON OPERATING PARTNER APPROVAL:

CEO \_\_\_\_\_ VP - EXPLORATION \_\_\_\_\_  
CFO \_\_\_\_\_ VP - OPERATIONS \_\_\_\_\_  
VP - LAND & LEGAL \_\_\_\_\_ SENIOR GEOLOGIST \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_  
SIGNED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
WORKING INTEREST (SI): \_\_\_\_\_ DATE: \_\_\_\_\_  
TAX ID: \_\_\_\_\_ APPROVAL: \_\_\_\_\_

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

# TAP ROCK OPERATING, LLC

602 Park Point Dr, Golden, Colorado 80401  
Authorization For Expenditure

Name: Mandelbaum 1234  
AFF #: D  
County: Lea  
State: NM

Date: September 30, 2019  
MD/TVD: 16410 / 11000  
Lateral Length: 4960  
Geologic Target: 2nd Bone Spring

Well Description: Drill, complete, and equip a horizontal 2nd Bone Spring well with a 4960 foot lateral.

INTANGIBLE DRILLING COSTS			INTANGIBLE COMPLETION COSTS			INTANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
1 1	Land - Legal	10,000	2 1	Land - Legal		3 1	Land - Legal	
1 2	Land - Regulatory	5,000	2 2	Land - Regulatory		3 2	Land - Regulatory	
1 3	Land - Surface Damages	20,000	2 3	Land - Surface Damages		3 3	Land - Surface Damages	
1 4	Land - Survey	10,000	2 4	Land - Survey		3 4	Land - Survey	
1 5	Location/Pit Construction	140,000	2 5	Location/Pit Construction		3 5	Location/Pit Construction	5,000
1 6	Remedial Ditchwork	0	2 6	Remedial Ditchwork		3 6	Remedial Ditchwork	
1 7	Reserve/Frac Pit Closing	0	2 7	Reserve/Frac Pit Closing		3 7	Reserve/Frac Pit Closing	
1 8	Drilling - Contractor	491,192	2 8	Drilling - Contractor		3 8	Drilling - Contractor	
1 9	Mob/Rig Up - Contractor/Trucking	123,250	2 9	Mob/Rig Up - Contractor/Trucking		3 9	Mob/Rig Up - Contractor/Trucking	
1 10	Cementing Services	0	2 10	Cementing Services		3 10	Cementing Services	
1 11	Cementing Equipment	0	2 11	Cementing Equipment		3 11	Cementing Equipment	
1 12	Bits/Drill Out Assemblies	0	2 12	Bits/Drill Out Assemblies		3 12	Bits/Drill Out Assemblies	
1 13	Fluid Circulation Equipment/Services	85,845	2 13	Fluid Circulation Equipment/Services	55,546	3 13	Fluid Circulation Equipment/Services	
1 14	Fluids/Chemicals	50,000	2 14	Fluids/Chemicals	33,832	3 14	Fluids/Chemicals	
1 15	WBM Cuttings/Wastewater Disposal	131,920	2 15	WBM Cuttings/Wastewater Disposal		3 15	WBM Cuttings/Wastewater Disposal	
1 16	OBM Cuttings/Chemical Disposal	0	2 16	OBM Cuttings/Chemical Disposal		3 16	OBM Cuttings/Chemical Disposal	
1 17	Fuel/Power	124,644	2 17	Fuel/Power	825,000	3 17	Fuel/Power	
1 18	Water	0	2 18	Water	491,457	3 18	Water	
1 19	Directional Drilling	209,240	2 19	Directional Drilling		3 19	Directional Drilling	
1 20	Mud Logging	19,405	2 20	Mud Logging		3 20	Mud Logging	
1 21	Open/Cased/Production Hole Logs	0	2 21	Open/Cased/Production Hole Logs	10,550	3 21	Open/Cased/Production Hole Logs	
1 22	Coring	0	2 22	Coring		3 22	Coring	
1 23	Geologic Supervision	0	2 23	Geologic Supervision		3 23	Geologic Supervision	
1 24	Engineering Supervision	0	2 24	Engineering Supervision		3 24	Engineering Supervision	
1 25	Consultant Supervision	112,170	2 25	Consultant Supervision	100,000	3 25	Consultant Supervision	20,000
1 26	Freight/Transportation	20,000	2 26	Freight/Transportation	4,110	3 26	Freight/Transportation	10,000
1 27	Labor	0	2 27	Labor	15,940	3 27	Labor	85,000
1 28	Supplies - Surface	2,500	2 28	Supplies - Surface	4,110	3 28	Supplies - Surface	
1 29	Supplies - Living Quarters	1,000	2 29	Supplies - Living Quarters	4,110	3 29	Supplies - Living Quarters	
1 30	Rentals - Surface	53,892	2 30	Rentals - Surface	35,670	3 30	Rentals - Surface	
1 31	Rentals - Living Quarters	28,664	2 31	Rentals - Living Quarters	28,699	3 31	Rentals - Living Quarters	
1 32	Rentals - Downhole	0	2 32	Rentals - Downhole	0	3 32	Rentals - Downhole	
1 33	Rentals - Pipe & Handling Tools	0	2 33	Rentals - Pipe & Handling Tools	0	3 33	Rentals - Pipe & Handling Tools	
1 34	Rentals - Frac Stack		2 34	Rentals - Frac Stack	115,220	3 34	Rentals - Frac Stack	
1 35	Rentals - Frac Tanks		2 35	Rentals - Frac Tanks	89,500	3 35	Rentals - Frac Tanks	
1 36	Coil Tubing Unit/Workover Rig		2 36	Coil Tubing Unit/Workover Rig	107,857	3 36	Coil Tubing Unit/Workover Rig	70,000
1 37	Wireline/Slickline/Perforating		2 37	Wireline/Slickline/Perforating	252,550	3 37	Wireline/Slickline/Perforating	
1 38	Temporary Packers/Plugs		2 38	Temporary Packers/Plugs	37,500	3 38	Temporary Packers/Plugs	
1 39	High Pressure Pump Truck		2 39	High Pressure Pump Truck	192,000	3 39	High Pressure Pump Truck	
1 40	Stimulation		2 40	Stimulation	1,163,618	3 40	Stimulation	
1 41	Rentals - Pressure Control		2 41	Rentals - Pressure Control		3 41	Rentals - Pressure Control	
1 42	Flowback Services		2 42	Flowback Services	96,875	3 42	Flowback Services	
1 43	Water Transfer Services		2 43	Water Transfer Services	105,875	3 43	Water Transfer Services	
1 44	Flowback Water Trucking & Disposal		2 44	Flowback Water Trucking & Disposal	145,722	3 44	Flowback Water Trucking & Disposal	
1 45	Permanent Equipment Installation		2 45	Permanent Equipment Installation		3 45	Permanent Equipment Installation	
1 46	Pipeline Tapping Services		2 46	Pipeline Tapping Services		3 46	Pipeline Tapping Services	
1 47	Plugging & Abandonment	0	2 47	Plugging & Abandonment		3 47	Plugging & Abandonment	
1 48	Overhead	9,963	2 48	Overhead	22,155	3 48	Overhead	5,000
1 49	Insurance	26,536	2 49	Insurance		3 49	Insurance	
1 50	Contingency	83,998	2 50	Contingency	277,345	3 50	Contingency	19,500
TOTAL INTANGIBLE DRILLING COSTS:		\$1,763,951	TOTAL INTANGIBLE COMPLETION COSTS:		\$5,632,701	TOTAL INTANGIBLE PRODUCTION COSTS:		\$214,500

TANGIBLE DRILLING COSTS			TANGIBLE COMPLETION COSTS			TANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
4 60	Conductor Casing	0	5 60	Conductor Casing		6 60	Conductor Casing	
4 61	Surface Casing	42,599	5 61	Surface Casing		6 61	Surface Casing	
4 62	1st Intermediate Casing	193,264	5 62	1st Intermediate Casing		6 62	1st Intermediate Casing	
4 63	2nd Intermediate Casing	0	5 63	2nd Intermediate Casing		6 63	2nd Intermediate Casing	
4 64	Production Casing	307,489	5 64	Production Casing	23,500	6 64	Production Casing	
4 65	Tubing	0	5 65	Tubing		6 65	Tubing	60,000
4 66	Wellhead	0	5 66	Wellhead	80,000	6 66	Wellhead	43,500
4 67	Permanent Packers/Hangers/Plugs		5 67	Permanent Packers/Hangers/Plugs		6 67	Permanent Packers/Hangers/Plugs	5,000
4 68	Tanks		5 68	Tanks		6 68	Tanks	
4 69	Production Vessels		5 69	Production Vessels		6 69	Production Vessels	82,000
4 70	Compressors		5 70	Compressors		6 70	Compressors	
4 71	Surface Flowlines		5 71	Surface Flowlines		6 71	Surface Flowlines	50,000
4 72	Gathering Lines		5 72	Gathering Lines		6 72	Gathering Lines	10,000
4 73	Valves & Controllers		5 73	Valves & Controllers		6 73	Valves & Controllers	
4 74	Artificial Lift Equipment		5 74	Artificial Lift Equipment		6 74	Artificial Lift Equipment	35,000
4 75	Instrumentation & Measurement		5 75	Instrumentation & Measurement		6 75	Instrumentation & Measurement	
4 76	Electrical Grounding/Safety Equipment		5 76	Electrical Grounding/Safety Equipment		6 76	Electrical Grounding/Safety Equipment	
4 77	Permanent Equipment Installation		5 77	Permanent Equipment Installation		6 77	Permanent Equipment Installation	
4 80	Other - Surface		5 80	Other - Surface		6 80	Other - Surface	
4 81	Other - Downhole		5 81	Other - Downhole		6 81	Other - Downhole	
TOTAL TANGIBLE DRILLING COSTS:		\$503,549	TOTAL TANGIBLE COMPLETION COSTS:		\$62,500	TOTAL TANGIBLE PRODUCTION COSTS:		\$285,500
TOTAL DRILLING COSTS:		\$2,267,500	TOTAL COMPLETION COSTS:		\$5,695,201	TOTAL PRODUCTION COSTS:		\$500,000
						TOTAL WELL COST:		\$6,462,701

TAP ROCK RESOURCES COMPANY APPROVAL:

NON OPERATING PARTNER APPROVAL:

CEO \_\_\_\_\_ VP - EXPLORATION \_\_\_\_\_  
CFO \_\_\_\_\_ VP - OPERATIONS \_\_\_\_\_  
VP - LAND & LEGAL \_\_\_\_\_ SENIOR GEOLOGIST \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_  
SIGNED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
WORKING INTEREST (W) \_\_\_\_\_ DATE: \_\_\_\_\_  
TAX ID: \_\_\_\_\_ APPROVAL: \_\_\_\_\_



# TAP ROCK OPERATING, LLC

602 Park Point Dr, Golden, Colorado 80401  
Authorization For Expenditure

Name: Mandelbaum 142H  
AFE #: 0  
County: Lea  
State: NM

Date: September 30, 2019  
MD/TVD: 15780 / 10370  
Lateral Length: 4960  
Geologic Target: 1st Bone Spring

Well Description: Drill, complete, and equip a horizontal 1st Bone Spring well with a 4960 foot lateral.

INTANGIBLE DRILLING COSTS			INTANGIBLE COMPLETION COSTS			INTANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
1 1	Land - Legal	10,000	2 1	Land - Legal		3 1	Land - Legal	
1 2	Land - Regulatory	5,000	2 2	Land - Regulatory		3 2	Land - Regulatory	
1 3	Land - Surface Damages	20,000	2 3	Land - Surface Damages		3 3	Land - Surface Damages	
1 4	Land - Survey	10,000	2 4	Land - Survey		3 4	Land - Survey	
1 5	Location/Pit Construction	140,000	2 5	Location/Pit Construction		3 5	Location/Pit Construction	5,000
1 6	Remedial Driftwork	0	2 6	Remedial Driftwork		3 6	Remedial Driftwork	
1 7	Reserve/Frac Pit Closing	0	2 7	Reserve/Frac Pit Closing		3 7	Reserve/Frac Pit Closing	
1 8	Drilling - Contractor	477,060	2 8	Drilling - Contractor		3 8	Drilling - Contractor	
1 9	Mob/Rig Up - Contractor/Trucking	123,250	2 9	Mob/Rig Up - Contractor/Trucking		3 9	Mob/Rig Up - Contractor/Trucking	
1 10	Cementing Services	0	2 10	Cementing Services		3 10	Cementing Services	
1 11	Cementing Equipment	0	2 11	Cementing Equipment		3 11	Cementing Equipment	
1 12	Bits/Drill Out Assemblies	0	2 12	Bits/Drill Out Assemblies	55,510	3 12	Bits/Drill Out Assemblies	
1 13	Fluid Circulation Equipment/Services	82,343	2 13	Fluid Circulation Equipment/Services		3 13	Fluid Circulation Equipment/Services	
1 14	Fluids/Chemicals	50,000	2 14	Fluids/Chemicals	39,832	3 14	Fluids/Chemicals	
1 15	WBM Cuttings/Wastewater Disposal	133,920	2 15	WBM Cuttings/Wastewater Disposal		3 15	WBM Cuttings/Wastewater Disposal	
1 16	OBM Cuttings/Chemical Disposal	0	2 16	OBM Cuttings/Chemical Disposal		3 16	OBM Cuttings/Chemical Disposal	
1 17	Fuel/Power	120,753	2 17	Fuel/Power	825,000	3 17	Fuel/Power	
1 18	Water	0	2 18	Water	497,457	3 18	Water	
1 19	Directional Drilling	201,080	2 19	Directional Drilling		3 19	Directional Drilling	
1 20	Mud Logging	18,396	2 20	Mud Logging		3 20	Mud Logging	
1 21	Open/Cased/Production Hole Logs	0	2 21	Open/Cased/Production Hole Logs	10,050	3 21	Open/Cased/Production Hole Logs	
1 22	Coring	0	2 22	Coring		3 22	Coring	
1 23	Geologic Supervision	0	2 23	Geologic Supervision		3 23	Geologic Supervision	
1 24	Engineering Supervision	0	2 24	Engineering Supervision		3 24	Engineering Supervision	
1 25	Consultant Supervision	100,573	2 25	Consultant Supervision	100,000	3 25	Consultant Supervision	20,000
1 26	Freight/Transportation	20,000	2 26	Freight/Transportation	5,130	3 26	Freight/Transportation	85,000
1 27	Labor	0	2 27	Labor	15,040	3 27	Labor	
1 28	Supplies - Surface	2,500	2 28	Supplies - Surface	4,110	3 28	Supplies - Surface	
1 29	Supplies - Living Quarters	1,000	2 29	Supplies - Living Quarters	4,100	3 29	Supplies - Living Quarters	
1 30	Rentals - Surface	51,206	2 30	Rentals - Surface	35,679	3 30	Rentals - Surface	
1 31	Rentals - Living Quarters	27,773	2 31	Rentals - Living Quarters	28,690	3 31	Rentals - Living Quarters	
1 32	Rentals - Downhole	0	2 32	Rentals - Downhole	0	3 32	Rentals - Downhole	
1 33	Rentals - Pipe & Handling Tools	0	2 33	Rentals - Pipe & Handling Tools	0	3 33	Rentals - Pipe & Handling Tools	
1 34	Rentals - Frac Stack	0	2 34	Rentals - Frac Stack	115,209	3 34	Rentals - Frac Stack	
1 35	Rentals - Frac Tanks	0	2 35	Rentals - Frac Tanks	89,500	3 35	Rentals - Frac Tanks	
1 36	Coil Tubing Unit/Workover Rig	0	2 36	Coil Tubing Unit/Workover Rig	107,857	3 36	Coil Tubing Unit/Workover Rig	70,000
1 37	Wireline/Slickline/Perforating	0	2 37	Wireline/Slickline/Perforating	253,560	3 37	Wireline/Slickline/Perforating	
1 38	Temporary Packers/Plugs	0	2 38	Temporary Packers/Plugs	37,100	3 38	Temporary Packers/Plugs	
1 39	High Pressure Pump Truck	0	2 39	High Pressure Pump Truck	107,000	3 39	High Pressure Pump Truck	
1 40	Stimulation	0	2 40	Stimulation	1,163,818	3 40	Stimulation	
1 41	Rentals - Pressure Control	0	2 41	Rentals - Pressure Control		3 41	Rentals - Pressure Control	
1 42	Flowback Services	0	2 42	Flowback Services	96,875	3 42	Flowback Services	
1 43	Water Transfer Services	0	2 43	Water Transfer Services	307,875	3 43	Water Transfer Services	
1 44	Flowback Water Trucking & Disposal	0	2 44	Flowback Water Trucking & Disposal	135,722	3 44	Flowback Water Trucking & Disposal	
1 45	Permanent Equipment Installation	0	2 45	Permanent Equipment Installation		3 45	Permanent Equipment Installation	
1 46	Pipeline Tapping Services	0	2 46	Pipeline Tapping Services		3 46	Pipeline Tapping Services	
1 47	Plugging & Abandonment	0	2 47	Plugging & Abandonment		3 47	Plugging & Abandonment	
1 53	Overhead	9,575	2 53	Overhead	22,153	3 53	Overhead	5,000
1 54	Insurance	28,404	2 54	Insurance		3 54	Insurance	
1 55	Contingency	81,822	2 55	Contingency	277,345	3 55	Contingency	19,500
TOTAL INTANGIBLE DRILLING COSTS:		\$1,718,264	TOTAL INTANGIBLE COMPLETION COSTS:		\$3,632,701	TOTAL INTANGIBLE PRODUCTION COSTS:		\$214,500

TANGIBLE DRILLING COSTS			TANGIBLE COMPLETION COSTS			TANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
4 60	Conductor Casing	0	5 60	Conductor Casing		6 60	Conductor Casing	
4 61	Surface Casing	47,599	5 61	Surface Casing		6 61	Surface Casing	
4 62	1st Intermediate Casing	153,269	5 62	1st Intermediate Casing		6 62	1st Intermediate Casing	
4 63	2nd Intermediate Casing	0	5 63	2nd Intermediate Casing		6 63	2nd Intermediate Casing	
4 64	Production Casing	295,875	5 64	Production Casing	22,500	6 64	Production Casing	
4 65	Tubing	0	5 65	Tubing		6 65	Tubing	60,000
4 66	Wellhead	0	5 66	Wellhead	80,000	6 66	Wellhead	41,500
4 67	Permanent Packers/Hangers/Plugs	0	5 67	Permanent Packers/Hangers/Plugs		6 67	Permanent Packers/Hangers/Plugs	5,000
4 68	Tanks	0	5 68	Tanks		6 68	Tanks	
4 69	Production Vessels	0	5 69	Production Vessels		6 69	Production Vessels	82,000
4 70	Compressors	0	5 70	Compressors		6 70	Compressors	
4 71	Surface Flowlines	0	5 71	Surface Flowlines		6 71	Surface Flowlines	50,000
4 72	Gathering Lines	0	5 72	Gathering Lines		6 72	Gathering Lines	10,000
4 73	Valves & Controllers	0	5 73	Valves & Controllers		6 73	Valves & Controllers	
4 74	Artificial Lift Equipment	0	5 74	Artificial Lift Equipment		6 74	Artificial Lift Equipment	35,000
4 75	Instrumentation & Measurement	0	5 75	Instrumentation & Measurement		6 75	Instrumentation & Measurement	
4 76	Electrical Grounding/Safety Equipment	0	5 76	Electrical Grounding/Safety Equipment		6 76	Electrical Grounding/Safety Equipment	
4 77	Permanent Equipment Installation	0	5 77	Permanent Equipment Installation		6 77	Permanent Equipment Installation	
4 80	Other - Surface	0	5 80	Other - Surface		6 80	Other - Surface	
4 81	Other - Downhole	0	5 81	Other - Downhole		6 81	Other - Downhole	
TOTAL TANGIBLE DRILLING COSTS:		\$491,737	TOTAL TANGIBLE COMPLETION COSTS:		\$62,500	TOTAL TANGIBLE PRODUCTION COSTS:		\$285,500
TOTAL DRILLING COSTS:		\$2,210,000	TOTAL COMPLETION COSTS:		\$3,695,201	TOTAL PRODUCTION COSTS:		\$500,000
						TOTAL WELL COST:		\$6,405,201

TAP ROCK RESOURCES COMPANY APPROVAL:

NON OPERATING PARTNER APPROVAL:

CEO \_\_\_\_\_ VP - EXPLORATION \_\_\_\_\_  
CFO \_\_\_\_\_ VP - OPERATIONS \_\_\_\_\_  
VP - LAND & LEGAL \_\_\_\_\_ SENIOR GEOLOGIST \_\_\_\_\_

COMPANY NAME \_\_\_\_\_  
SIGNED BY \_\_\_\_\_ TITLE \_\_\_\_\_  
WORKING INTEREST (%) \_\_\_\_\_ DATE \_\_\_\_\_  
TAX ID \_\_\_\_\_ APPROVAL \_\_\_\_\_

# TAP ROCK OPERATING, LLC

602 Park Point Dr, Golden, Colorado 80401  
Authorization For Expenditure

Name: Mandelbaum 143H  
AFE #: 0  
County: Lea  
State: NM

Date: September 30, 2019  
MD/TVD: 15780 / 10370  
Lateral Length: 4960  
Geologic Target: 1st Bone Spring

Well Description: Drill, complete, and equip a horizontal 1st Bone Spring well with a 4960 foot lateral

INTANGIBLE DRILLING COSTS			INTANGIBLE COMPLETION COSTS			INTANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
1 1	Land - Legal	10,000	2 1	Land - Legal		1 1	Land - Legal	
1 2	Land - Regulatory	5,000	2 2	Land - Regulatory		2 2	Land - Regulatory	
1 3	Land - Surface Damages	20,000	2 3	Land - Surface Damages		3 3	Land - Surface Damages	
1 4	Land - Survey	10,000	2 4	Land - Survey		3 4	Land - Survey	
1 5	Location/Pit Construction	140,000	2 5	Location/Pit Construction		3 5	Location/Pit Construction	5,000
1 6	Remedial Dirtwork	0	2 6	Remedial Dirtwork		3 6	Remedial Dirtwork	
1 7	Reserve/Frac Pit Closing	0	2 7	Reserve/Frac Pit Closing		3 7	Reserve/Frac Pit Closing	
1 8	Drilling - Contractor	472,000	2 8	Drilling - Contractor		3 8	Drilling - Contractor	
1 9	Mo/Rig Up - Contractor/Trucking	171,250	2 9	Mo/Rig Up - Contractor/Trucking		3 9	Mo/Rig Up - Contractor/Trucking	
1 10	Cementing Services	0	2 10	Cementing Services		3 10	Cementing Services	
1 11	Cementing Equipment	0	2 11	Cementing Equipment		3 11	Cementing Equipment	
1 12	Bits/Drill Out Assemblies	0	2 12	Bits/Drill Out Assemblies	55,346	3 12	Bits/Drill Out Assemblies	
1 13	Fluid Circulation Equipment/Services	82,342	2 13	Fluid Circulation Equipment/Services	15,842	3 13	Fluid Circulation Equipment/Services	
1 14	Fluids/Chemicals	50,000	2 14	Fluids/Chemicals		3 14	Fluids/Chemicals	
1 15	WBM Cuttings/Wastewater Disposal	143,929	2 15	WBM Cuttings/Wastewater Disposal		3 15	WBM Cuttings/Wastewater Disposal	
1 16	OBM Cuttings/Chemical Disposal	0	2 16	OBM Cuttings/Chemical Disposal		3 16	OBM Cuttings/Chemical Disposal	
1 17	Fuel/Power	120,753	2 17	Fuel/Power	325,000	3 17	Fuel/Power	
1 18	Water	0	2 18	Water	491,452	3 18	Water	
1 19	Directional Drilling	205,088	2 19	Directional Drilling		3 19	Directional Drilling	
1 20	Mud Logging	16,395	2 20	Mud Logging		3 20	Mud Logging	
1 21	Open/Cased/Production Hole Logs	0	2 21	Open/Cased/Production Hole Logs	10,500	3 21	Open/Cased/Production Hole Logs	
1 22	Coring	0	2 22	Coring		3 22	Coring	
1 23	Geologic Supervision	0	2 23	Geologic Supervision		3 23	Geologic Supervision	
1 24	Engineering Supervision	0	2 24	Engineering Supervision		3 24	Engineering Supervision	
1 25	Consultant Supervision	108,672	2 25	Consultant Supervision	100,000	3 25	Consultant Supervision	10,000
1 26	Freight/Transportation	20,000	2 26	Freight/Transportation	4,110	3 26	Freight/Transportation	10,000
1 27	Labor	0	2 27	Labor	15,940	3 27	Labor	85,000
1 28	Supplies - Surface	2,509	2 28	Supplies - Surface	4,110	3 28	Supplies - Surface	
1 29	Supplies - Living Quarters	1,000	2 29	Supplies - Living Quarters	4,110	3 29	Supplies - Living Quarters	
1 30	Rentals - Surface	51,706	2 30	Rentals - Surface	15,690	3 30	Rentals - Surface	
1 31	Rentals - Living Quarters	27,773	2 31	Rentals - Living Quarters	28,000	3 31	Rentals - Living Quarters	
1 32	Rentals - Downhole	0	2 32	Rentals - Downhole	0	3 32	Rentals - Downhole	
1 33	Rentals - Pipe & Handling Tools	0	2 33	Rentals - Pipe & Handling Tools	0	3 33	Rentals - Pipe & Handling Tools	
1 34	Rentals - Frac Stack		2 34	Rentals - Frac Stack	135,240	3 34	Rentals - Frac Stack	
1 35	Rentals - Frac Tanks		2 35	Rentals - Frac Tanks	85,500	3 35	Rentals - Frac Tanks	
1 36	Coil Tubing Unit/Workover Rig		2 36	Coil Tubing Unit/Workover Rig	102,857	3 36	Coil Tubing Unit/Workover Rig	70,000
1 37	Wireline/Slickline/Perforating		2 37	Wireline/Slickline/Perforating	252,550	3 37	Wireline/Slickline/Perforating	
1 38	Temporary Packers/Plugs		2 38	Temporary Packers/Plugs	32,500	3 38	Temporary Packers/Plugs	
1 39	High Pressure Pump Truck		2 39	High Pressure Pump Truck	102,200	3 39	High Pressure Pump Truck	
1 40	Stimulation		2 40	Stimulation	7,161,818	3 40	Stimulation	
1 41	Rentals - Pressure Control		2 41	Rentals - Pressure Control		3 41	Rentals - Pressure Control	
1 42	Flowback Services		2 42	Flowback Services	96,875	3 42	Flowback Services	
1 43	Water Transfer Services		2 43	Water Transfer Services	105,875	3 43	Water Transfer Services	
1 44	Flowback Water Trucking & Disposal		2 44	Flowback Water Trucking & Disposal	135,123	3 44	Flowback Water Trucking & Disposal	
1 45	Permanent Equipment Installation		2 45	Permanent Equipment Installation		3 45	Permanent Equipment Installation	
1 46	Pipeline Tapping Services		2 46	Pipeline Tapping Services		3 46	Pipeline Tapping Services	
1 47	Plugging & Abandonment	0	2 47	Plugging & Abandonment		3 47	Plugging & Abandonment	
1 53	Overhead	5,525	2 53	Overhead	22,155	3 53	Overhead	5,000
1 54	Insurance	28,934	2 54	Insurance		3 54	Insurance	
1 55	Contingency	81,822	2 55	Contingency	275,343	3 55	Contingency	19,500
TOTAL INTANGIBLE DRILLING COSTS:		\$1,718,264	TOTAL INTANGIBLE COMPLETION COSTS:		\$3,632,701	TOTAL INTANGIBLE PRODUCTION COSTS:		\$214,500

TANGIBLE DRILLING COSTS			TANGIBLE COMPLETION COSTS			TANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
4 60	Conductor Casing	0	5 60	Conductor Casing		6 60	Conductor Casing	
4 61	Surface Casing	47,599	5 61	Surface Casing		6 61	Surface Casing	
4 62	1st Intermediate Casing	153,263	5 62	1st Intermediate Casing		6 62	1st Intermediate Casing	
4 63	2nd Intermediate Casing	0	5 63	2nd Intermediate Casing		6 63	2nd Intermediate Casing	
4 64	Production Casing	255,875	5 64	Production Casing	22,500	6 64	Production Casing	
4 65	Tubing		5 65	Tubing		6 65	Tubing	60,000
4 66	Wellhead	0	5 66	Wellhead	40,000	6 66	Wellhead	63,500
4 67	Permanent Packers/Hangers/Plugs		5 67	Permanent Packers/Hangers/Plugs		6 67	Permanent Packers/Hangers/Plugs	5,000
4 68	Tanks		5 68	Tanks		6 68	Tanks	
4 69	Production Vessels		5 69	Production Vessels		6 69	Production Vessels	82,000
4 70	Compressors		5 70	Compressors		6 70	Compressors	
4 71	Surface Flowlines		5 71	Surface Flowlines		6 71	Surface Flowlines	10,000
4 72	Gathering Lines		5 72	Gathering Lines		6 72	Gathering Lines	10,000
4 73	Valves & Controllers		5 73	Valves & Controllers		6 73	Valves & Controllers	
4 74	Artificial Lift Equipment		5 74	Artificial Lift Equipment		6 74	Artificial Lift Equipment	15,000
4 75	Instrumentation & Measurement		5 75	Instrumentation & Measurement		6 75	Instrumentation & Measurement	
4 76	Electrical Grounding/Safety Equipment		5 76	Electrical Grounding/Safety Equipment		6 76	Electrical Grounding/Safety Equipment	
4 77	Permanent Equipment Installation		5 77	Permanent Equipment Installation		6 77	Permanent Equipment Installation	
4 80	Other - Surface		5 80	Other - Surface		6 80	Other - Surface	
4 81	Other - Downhole		5 81	Other - Downhole		6 81	Other - Downhole	
TOTAL TANGIBLE DRILLING COSTS:		\$495,737	TOTAL TANGIBLE COMPLETION COSTS:		\$62,500	TOTAL TANGIBLE PRODUCTION COSTS:		\$285,500
TOTAL DRILLING COSTS:		\$2,210,000	TOTAL COMPLETION COSTS:		\$3,695,201	TOTAL PRODUCTION COSTS:		\$500,000
						TOTAL WELL COST:		\$6,405,201

TAP ROCK RESOURCES COMPANY APPROVAL:

NON OPERATING PARTNER APPROVAL:

CEO \_\_\_\_\_ VP - EXPLORATION \_\_\_\_\_  
CFO \_\_\_\_\_ VP - OPERATIONS \_\_\_\_\_  
VP - LAND & TITLE \_\_\_\_\_ SENIOR GEOLOGIST \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_  
SIGNED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
WORKING INTEREST (W): \_\_\_\_\_ DATE: \_\_\_\_\_  
TAX ID: \_\_\_\_\_ APPROVAL: \_\_\_\_\_

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



**TAP ROCK OPERATING, LLC**  
602 Park Point Dr, Golden, Colorado 80401  
Authorization For Expenditure

Name: Mandelbaum 192H  
AFE #: 0  
County: Lea  
State: NM

Date: September 30, 2019  
MD/TVD: 16010 / 10600  
Lateral Length: 4960  
Geologic Target: 2nd Bone Spring

Well Description: Drill, complete, and equip a horizontal 2nd Bone Spring well with a 4960 foot lateral.

INTANGIBLE DRILLING COSTS			INTANGIBLE COMPLETION COSTS			INTANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
1 1	Land - Legal	10,000	2 1	Land - Legal		3 1	Land - Legal	
1 2	Land - Regulatory	5,000	2 2	Land - Regulatory		3 2	Land - Regulatory	
1 3	Land - Surface Damages	20,000	2 3	Land - Surface Damages		3 3	Land - Surface Damages	
1 4	Land - Survey	10,000	2 4	Land - Survey		3 4	Land - Survey	
1 5	Location/Pit Construction	140,000	2 5	Location/Pit Construction		3 5	Location/Pit Construction	5,000
1 6	Remedial Dirtwork	0	2 6	Remedial Dirtwork		3 6	Remedial Dirtwork	
1 7	Reserve/Frac Pit Closing	0	2 7	Reserve/Frac Pit Closing		3 7	Reserve/Frac Pit Closing	
1 8	Drilling - Contractor	498,742	2 8	Drilling - Contractor		3 8	Drilling - Contractor	
1 9	Mob/Rig Up - Contractor/Trucking	123,750	2 9	Mob/Rig Up - Contractor/Trucking		3 9	Mob/Rig Up - Contractor/Trucking	
1 10	Cementing Services	0	2 10	Cementing Services		3 10	Cementing Services	
1 11	Cementing Equipment	0	2 11	Cementing Equipment		3 11	Cementing Equipment	
1 12	Bits/Drill Out Assemblies	0	2 12	Bits/Drill Out Assemblies	55,516	3 12	Bits/Drill Out Assemblies	
1 13	Fluid Circulation Equipment/Services	86,804	2 13	Fluid Circulation Equipment/Services		3 13	Fluid Circulation Equipment/Services	
1 14	Fluids/Chemicals	50,000	2 14	Fluids/Chemicals	89,832	3 14	Fluids/Chemicals	
1 15	WBM Cuttings/Wastewater Disposal	133,500	2 15	WBM Cuttings/Wastewater Disposal		3 15	WBM Cuttings/Wastewater Disposal	
1 16	OBM Cuttings/Chemical Disposal	0	2 16	OBM Cuttings/Chemical Disposal		3 16	OBM Cuttings/Chemical Disposal	
1 17	Fuel/Power	125,451	2 17	Fuel/Power	325,000	3 17	Fuel/Power	
1 18	Water	0	2 18	Water	497,451	3 18	Water	
1 19	Directional Drilling	210,742	2 19	Directional Drilling		3 19	Directional Drilling	
1 20	Mud Logging	15,592	2 20	Mud Logging		3 20	Mud Logging	
1 21	Open/Cased/Production Hole Logs	0	2 21	Open/Cased/Production Hole Logs	18,560	3 21	Open/Cased/Production Hole Logs	
1 22	Coring	0	2 22	Coring		3 22	Coring	
1 23	Geologic Supervision	0	2 23	Geologic Supervision		3 23	Geologic Supervision	
1 24	Engineering Supervision	0	2 24	Engineering Supervision		3 24	Engineering Supervision	
1 25	Consultant Supervision	112,818	2 25	Consultant Supervision	100,000	3 25	Consultant Supervision	20,000
1 26	Freight/Transportation	20,000	2 26	Freight/Transportation	4,110	3 26	Freight/Transportation	10,000
1 27	Labor	0	2 27	Labor	15,940	3 27	Labor	85,000
1 28	Supplies - Surface	2,500	2 28	Supplies - Surface	5,110	3 28	Supplies - Surface	
1 29	Supplies - Living Quarters	1,000	2 29	Supplies - Living Quarters	4,110	3 29	Supplies - Living Quarters	
1 30	Rentals - Surface	54,193	2 30	Rentals - Surface	35,600	3 30	Rentals - Surface	
1 31	Rentals - Living Quarters	28,831	2 31	Rentals - Living Quarters	28,690	3 31	Rentals - Living Quarters	
1 32	Rentals - Downhole	0	2 32	Rentals - Downhole	0	3 32	Rentals - Downhole	
1 33	Rentals - Pipe & Handling Tools	0	2 33	Rentals - Pipe & Handling Tools	0	3 33	Rentals - Pipe & Handling Tools	
1 34	Rentals - Frac Stack	0	2 34	Rentals - Frac Stack	115,270	3 34	Rentals - Frac Stack	
1 35	Rentals - Frac Tanks	0	2 35	Rentals - Frac Tanks	89,500	3 35	Rentals - Frac Tanks	
1 36	Coil Tubing Unit/Workover Rig	0	2 36	Coil Tubing Unit/Workover Rig	102,852	3 36	Coil Tubing Unit/Workover Rig	70,000
1 37	Wireline/Slickline/Perforating	0	2 37	Wireline/Slickline/Perforating	757,550	3 37	Wireline/Slickline/Perforating	
1 38	Temporary Packers/Plugs	0	2 38	Temporary Packers/Plugs	37,500	3 38	Temporary Packers/Plugs	
1 39	High Pressure Pump Truck	0	2 39	High Pressure Pump Truck	102,200	3 39	High Pressure Pump Truck	
1 40	Stimulation	0	2 40	Stimulation	1,163,814	3 40	Stimulation	
1 41	Rentals - Pressure Control	0	2 41	Rentals - Pressure Control		3 41	Rentals - Pressure Control	
1 42	Flowback Services	0	2 42	Flowback Services	96,875	3 42	Flowback Services	
1 43	Water Transfer Services	0	2 43	Water Transfer Services	105,875	3 43	Water Transfer Services	
1 44	Flowback Water Trucking & Disposal	0	2 44	Flowback Water Trucking & Disposal	135,222	3 44	Flowback Water Trucking & Disposal	
1 45	Permanent Equipment Installation	0	2 45	Permanent Equipment Installation		3 45	Permanent Equipment Installation	
1 46	Pipeline Tapping Services	0	2 46	Pipeline Tapping Services		3 46	Pipeline Tapping Services	
1 47	Plugging & Abandonment	0	2 47	Plugging & Abandonment		3 47	Plugging & Abandonment	
1 51	Overhead	10,000	2 51	Overhead	22,355	3 51	Overhead	5,000
1 54	Insurance	28,818	2 54	Insurance		3 54	Insurance	
1 55	Contingency	83,855	2 55	Contingency	277,345	3 55	Contingency	15,500
TOTAL INTANGIBLE DRILLING COSTS:		\$1,771,451	TOTAL INTANGIBLE COMPLETION COSTS:		\$9,682,701	TOTAL INTANGIBLE PRODUCTION COSTS:		\$214,500

TANGIBLE DRILLING COSTS			TANGIBLE COMPLETION COSTS			TANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
4 60	Conductor Casing	0	5 60	Conductor Casing		6 60	Conductor Casing	
4 61	Surface Casing	12,599	5 61	Surface Casing		6 61	Surface Casing	
4 62	1st Intermediate Casing	153,263	5 62	1st Intermediate Casing		6 62	1st Intermediate Casing	
4 63	2nd Intermediate Casing	0	5 63	2nd Intermediate Casing		6 63	2nd Intermediate Casing	
4 64	Production Casing	100,188	5 64	Production Casing	22,772	6 64	Production Casing	
4 65	Tubing	0	5 65	Tubing		6 65	Tubing	60,000
4 66	Wellhead	0	5 66	Wellhead	10,000	6 66	Wellhead	43,500
4 67	Permanent Packers/Hangers/Plugs	0	5 67	Permanent Packers/Hangers/Plugs		6 67	Permanent Packers/Hangers/Plugs	5,000
4 68	Tanks	0	5 68	Tanks		6 68	Tanks	
4 69	Production Vessels	0	5 69	Production Vessels		6 69	Production Vessels	82,000
4 70	Compressors	0	5 70	Compressors		6 70	Compressors	
4 71	Surface Flowlines	0	5 71	Surface Flowlines		6 71	Surface Flowlines	50,000
4 72	Gathering Lines	0	5 72	Gathering Lines		6 72	Gathering Lines	10,000
4 73	Valves & Controllers	0	5 73	Valves & Controllers		6 73	Valves & Controllers	
4 74	Artificial Lift Equipment	0	5 74	Artificial Lift Equipment		6 74	Artificial Lift Equipment	35,000
4 75	Instrumentation & Measurement	0	5 75	Instrumentation & Measurement		6 75	Instrumentation & Measurement	
4 76	Electrical Grounding/Safety Equipment	0	5 76	Electrical Grounding/Safety Equipment		6 76	Electrical Grounding/Safety Equipment	
4 77	Permanent Equipment Installation	0	5 77	Permanent Equipment Installation		6 77	Permanent Equipment Installation	
4 80	Other - Surface	0	5 80	Other - Surface		6 80	Other - Surface	
4 81	Other - Downhole	0	5 81	Other - Downhole		6 81	Other - Downhole	
TOTAL TANGIBLE DRILLING COSTS:		\$498,049	TOTAL TANGIBLE COMPLETION COSTS:		\$62,500	TOTAL TANGIBLE PRODUCTION COSTS:		\$285,500
TOTAL DRILLING COSTS:		\$2,269,500	TOTAL COMPLETION COSTS:		\$9,695,201	TOTAL PRODUCTION COSTS:		\$500,000
						TOTAL WELL COST:		\$6,462,701

TAP ROCK RESOURCES COMPANY APPROVAL:

NON OPERATING PARTNER APPROVAL:

CEO \_\_\_\_\_ VP - EXPLORATION \_\_\_\_\_  
CFO \_\_\_\_\_ VP - OPERATIONS \_\_\_\_\_  
VP - LAND & LEGAL \_\_\_\_\_ SENIOR GEOLOGIST \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_  
SIGNED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
WORKING INTEREST (%): \_\_\_\_\_ DATE: \_\_\_\_\_  
TAX ID: \_\_\_\_\_ APPROVAL: \_\_\_\_\_

# TAP ROCK OPERATING, LLC

602 Park Point Dr, Golden, Colorado 80401  
Authorization For Expenditure

Name: Mandelbaum 193H  
AFE #: 0  
County: Lea  
State: NM

Date: September 30, 2019  
MD/TVD: 16010 / 10600  
Lateral Length: 4960  
Geologic Target: 2nd Bone Spring

Well Description: Drill, complete, and equip a horizontal 2nd Bone Spring well with a 4960 foot lateral.

INTANGIBLE DRILLING COSTS			INTANGIBLE COMPLETION COSTS			INTANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
1 1	Land - Legal	10,000	2 1	Land - Legal		3 1	Land - Legal	
1 2	Land - Regulatory	5,000	2 2	Land - Regulatory		3 2	Land - Regulatory	
1 3	Land - Surface Damages	20,000	2 3	Land - Surface Damages		3 3	Land - Surface Damages	
1 4	Land - Survey	10,000	2 4	Land - Survey		3 4	Land - Survey	
1 5	Location/Pit Construction	140,000	2 5	Location/Pit Construction		3 5	Location/Pit Construction	5,000
1 6	Remedial Dirtwork	0	2 6	Remedial Dirtwork		3 6	Remedial Dirtwork	
1 7	Reserve/Frac Pit Closing	0	2 7	Reserve/Frac Pit Closing		3 7	Reserve/Frac Pit Closing	
1 8	Drilling - Contractor	895,742	2 8	Drilling - Contractor		3 8	Drilling - Contractor	
1 9	Mob/Rig Up - Contractor/Trucking	123,350	2 9	Mob/Rig Up - Contractor/Trucking		3 9	Mob/Rig Up - Contractor/Trucking	
1 10	Cementing Services		2 10	Cementing Services		3 10	Cementing Services	
1 11	Cementing Equipment	0	2 11	Cementing Equipment		3 11	Cementing Equipment	
1 12	Bits/Drill Out Assemblies	0	2 12	Bits/Drill Out Assemblies	55,516	3 12	Bits/Drill Out Assemblies	
1 13	Fluid Circulation Equipment/Services	66,834	2 13	Fluid Circulation Equipment/Services		3 13	Fluid Circulation Equipment/Services	
1 14	Fluids/Chemicals	50,000	2 14	Fluids/Chemicals	37,832	3 14	Fluids/Chemicals	
1 15	WBM Cuttings/Wastewater Disposal	233,920	2 15	WBM Cuttings/Wastewater Disposal		3 15	WBM Cuttings/Wastewater Disposal	
1 16	OBM Cuttings/Chemical Disposal	0	2 16	OBM Cuttings/Chemical Disposal		3 16	OBM Cuttings/Chemical Disposal	
1 17	Fuel/Power	125,853	2 17	Fuel/Power	375,000	3 17	Fuel/Power	
1 18	Water	0	2 18	Water	497,457	3 18	Water	
1 19	Directional Drilling	210,742	2 19	Directional Drilling		3 19	Directional Drilling	
1 20	Mud Logging	19,549	2 20	Mud Logging		3 20	Mud Logging	
1 21	Open/Cased/Production Hole Logs	0	2 21	Open/Cased/Production Hole Logs	10,550	3 21	Open/Cased/Production Hole Logs	
1 22	Coring	0	2 22	Coring		3 22	Coring	
1 23	Geologic Supervision	0	2 23	Geologic Supervision		3 23	Geologic Supervision	
1 24	Engineering Supervision	0	2 24	Engineering Supervision		3 24	Engineering Supervision	
1 25	Consultant Supervision	112,818	2 25	Consultant Supervision	100,000	3 25	Consultant Supervision	20,000
1 26	Freight/Transportation	20,000	2 26	Freight/Transportation	4,110	3 26	Freight/Transportation	10,000
1 27	Labor	0	2 27	Labor	35,949	3 27	Labor	85,000
1 28	Supplies - Surface	2,500	2 28	Supplies - Surface	4,110	3 28	Supplies - Surface	
1 29	Supplies - Living Quarters	1,000	2 29	Supplies - Living Quarters	4,110	3 29	Supplies - Living Quarters	
1 30	Rentals - Surface	54,191	2 30	Rentals - Surface	35,620	3 30	Rentals - Surface	
1 31	Rentals - Living Quarters	28,831	2 31	Rentals - Living Quarters	28,800	3 31	Rentals - Living Quarters	
1 32	Rentals - Downhole	0	2 32	Rentals - Downhole	0	3 32	Rentals - Downhole	
1 33	Rentals - Pipe & Handling Tools	0	2 33	Rentals - Pipe & Handling Tools	0	3 33	Rentals - Pipe & Handling Tools	
1 34	Rentals - Frac Stack		2 34	Rentals - Frac Stack		3 34	Rentals - Frac Stack	
1 35	Rentals - Frac Tanks		2 35	Rentals - Frac Tanks	115,270	3 35	Rentals - Frac Tanks	
1 36	Coil Tubing Unit/Workover Rig		2 36	Coil Tubing Unit/Workover Rig	89,500	3 36	Coil Tubing Unit/Workover Rig	20,000
1 37	Wireline/Slickline/Perforating		2 37	Wireline/Slickline/Perforating	257,550	3 37	Wireline/Slickline/Perforating	
1 38	Temporary Packers/Plugs		2 38	Temporary Packers/Plugs	37,500	3 38	Temporary Packers/Plugs	
1 39	High Pressure Pump Truck		2 39	High Pressure Pump Truck	100,200	3 39	High Pressure Pump Truck	
1 40	Stimulation		2 40	Stimulation	1,163,318	3 40	Stimulation	
1 41	Rentals - Pressure Control		2 41	Rentals - Pressure Control		3 41	Rentals - Pressure Control	
1 42	Flowback Services		2 42	Flowback Services	96,875	3 42	Flowback Services	
1 43	Water Transfer Services		2 43	Water Transfer Services	106,875	3 43	Water Transfer Services	
1 44	Flowback Water Trucking & Disposal		2 44	Flowback Water Trucking & Disposal	135,272	3 44	Flowback Water Trucking & Disposal	
1 45	Permanent Equipment Installation		2 45	Permanent Equipment Installation		3 45	Permanent Equipment Installation	
1 46	Pipeline Tapping Services		2 46	Pipeline Tapping Services		3 46	Pipeline Tapping Services	
1 47	Plugging & Abandonment	0	2 47	Plugging & Abandonment		3 47	Plugging & Abandonment	
1 53	Overhead	50,035	2 53	Overhead	22,155	3 53	Overhead	5,000
1 54	Insurance	28,818	2 54	Insurance		3 54	Insurance	
1 55	Contingency	84,355	2 55	Contingency	277,345	3 55	Contingency	19,500
TOTAL INTANGIBLE DRILLING COSTS:		\$3,771,451	TOTAL INTANGIBLE COMPLETION COSTS:		\$3,632,701	TOTAL INTANGIBLE PRODUCTION COSTS:		\$214,500

TANGIBLE DRILLING COSTS			TANGIBLE COMPLETION COSTS			TANGIBLE PRODUCTION COSTS		
COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT	COST CODES	DESCRIPTION	AMOUNT
4 60	Conductor Casing	0	5 60	Conductor Casing		6 60	Conductor Casing	
4 61	Surface Casing	42,593	5 61	Surface Casing		6 61	Surface Casing	
4 62	1st Intermediate Casing	353,263	5 62	1st Intermediate Casing		6 62	1st Intermediate Casing	
4 63	2nd Intermediate Casing	0	5 63	2nd Intermediate Casing		6 63	2nd Intermediate Casing	
4 64	Production Casing	300,188	5 64	Production Casing		6 64	Production Casing	
4 65	Tubing		5 65	Tubing	22,500	6 65	Tubing	60,000
4 66	Wellhead	0	5 66	Wellhead	40,000	6 66	Wellhead	48,500
4 67	Permanent Packers/Hangers/Plugs		5 67	Permanent Packers/Hangers/Plugs		6 67	Permanent Packers/Hangers/Plugs	5,000
4 68	Tanks		5 68	Tanks		6 68	Tanks	
4 69	Production Vessels		5 69	Production Vessels		6 69	Production Vessels	82,000
4 70	Compressors		5 70	Compressors		6 70	Compressors	
4 71	Surface Flowlines		5 71	Surface Flowlines		6 71	Surface Flowlines	50,000
4 72	Gathering Lines		5 72	Gathering Lines		6 72	Gathering Lines	10,000
4 73	Valves & Controllers		5 73	Valves & Controllers		6 73	Valves & Controllers	
4 74	Artificial Lift Equipment		5 74	Artificial Lift Equipment		6 74	Artificial Lift Equipment	15,000
4 75	Instrumentation & Measurement		5 75	Instrumentation & Measurement		6 75	Instrumentation & Measurement	
4 76	Electrical Grounding/Safety Equipment		5 76	Electrical Grounding/Safety Equipment		6 76	Electrical Grounding/Safety Equipment	
4 77	Permanent Equipment Installation		5 77	Permanent Equipment Installation		6 77	Permanent Equipment Installation	
4 80	Other - Surface		5 80	Other - Surface		6 80	Other - Surface	
4 81	Other - Downhole		5 81	Other - Downhole		6 81	Other - Downhole	
TOTAL TANGIBLE DRILLING COSTS:		\$496,048	TOTAL TANGIBLE COMPLETION COSTS:		\$62,500	TOTAL TANGIBLE PRODUCTION COSTS:		\$285,500
TOTAL DRILLING COSTS:		\$2,267,500	TOTAL COMPLETION COSTS:		\$3,695,201	TOTAL PRODUCTION COSTS:		\$500,000
						TOTAL WELL COST:		\$6,462,701

TAP ROCK RESOURCES COMPANY APPROVAL:

NON OPERATING PARTNER APPROVAL:

CEO: \_\_\_\_\_ VP - EXPLORATION \_\_\_\_\_  
CFO: \_\_\_\_\_ VP - OPERATIONS \_\_\_\_\_  
VP - LAND & LEGAL: \_\_\_\_\_ SENIOR GEOLOGIST: \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_  
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.



# Summary of Communication



Party	Communication
GAJH 1989 Limited Partnership c/o UMC Petroleum Corporation / Devon	10/4/19 - Sent well proposals
	10/30/19 - Tap Rock Emails Devon to advise title shows GAJH is c/o Devon, various title research is done to confirm
	1/14/19 - Tap Rock sends JOA
	1/15/19 to Present - Parties work towards voluntary joinder or leasing interest.
Energen Resources Corporation	10/4/19 - Sent well proposals
	1/22/20 - Energen advise they've traded to COG
	1/28/20 - Tap Rock still shows some of the interest was not assigned to COG, and is still in Energen entity. Energen researching now.
COG Operating LLC	10/4/19 - Sent well proposals
	11/25/19 - COG requests JOA, Tap Rock provides
	1/28/20 to Present - Parties work towards voluntary joinder or trade
	2/18/20 - COG requests Email copy of proposal and Tap Rock sends
	2/27/20 - Erica H calls Matt S to ensure they do not need any additional information and reminding of hearing date. Matt S says they have everything they need from us and are reviewing.
Franklin Mountain Energy II, LLC	10/4/19 - Sent well proposals
	1/14/20 - Franklin Mountain requests JOA, Tap Rock provides
Marathon Oil Permian, LLC	10/4/19 - Sent well proposals
	11/11/19 to Present - Parties work towards voluntary joinder or trade, which has been agreed to in principle.
	10/4/19 - Sent well proposals
Crown Oil Partners VI, LLC; and, Crump Energy Partners III, LLC	10/16/19 - Crown/Crump asks about drilling plans, Tap Rock answers
	1/27 to Present - Parties work towards voluntary joinder or acquisition

**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,  
LEA COUNTY, NEW MEXICO**

**Case No. 21107**

**AFFIDAVIT OF EMILY LANGE**

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 applications and the geology involved.
3. This affidavit is submitted in connection with the filing by Tap Rock of the above-referenced compulsory pooling applications 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 the University of Southern California, which I completed in 2012. I am currently working towards a Master's degree in Geology at Southern Methodist University.
  - b. I have been employed as a petroleum geologist since 2013. I have worked in New Mexico since 2015.

EXHIBIT

**E**



5. **Exhibit 8** is a Project Locator Map depicting the location of the Horizontal Spacing Unit ("HSU") within the Delaware Basin. Within Section 11 of 24S 34E, are the Mandelbaum Fee 122H, 123H, 142H, 143H, 192H, 193H, wells (the "Wells").

6. **Exhibit 9** is a Gun Barrel Diagram showing the planned Bone Spring horizontal spacing for the Wells. This diagram shows the projected development of the six Bone Spring Wells, all spaced 660' away from the nearest well in the same zone. A nearby type log has been included (for log descriptions, see Exhibit 11 below) to show approximate depths and reservoir quality of the selected landing zones.

7. **Exhibit 10** is a Bone Spring Structure Map. This map shows the location of the Mandelbaum HSU outlined by the red box. The surface/bottom hole locations of the Mandelbaum Wells are shown, zoomed in, to the right. The map is the top of the Bone Spring formation in sub-sea vertical depth. The contour intervals are 25 feet each. There is a monoclinical dip down to the south. The orientation of the Mandelbaum Wells will each be approximately along dip. There is one well [Chevron – Antelope Ridge 11-24-34 3H] that sits ~1,320' to the west of the Mandelbaum 122H, at the equivalent target depth. There are no other wells in the direct vicinity targeting similar horizons. Horizontal wells with blue circles shown on the map are all Bone Spring producers. The vertical wells controlling the structure map have the sub-sea vertical depth posted in pink. The subsequent cross-section from A-A' is also identified to locate our closest control on the reservoir properties for the Mandelbaum Wells. I do not observe any faulting, pinch-outs, or other geologic impediments or hazards to developing this targeted interval with a horizontal well.

8. **Exhibit 11** is a Bone Spring Stratigraphic Cross Section (flattened on the top of the Bone Spring interval). Well 2 (moving left to right) has a triple combo log. Well 1 has gamma ray, resistivity, & neutron porosity; well 3 has gamma & resistivity; well 4 has just gamma. Though

wells 1, 3 and 4 do not have a full triple combo, they are utilized here to show the correlation of our target intervals across the Mandelbaum HSU. Track 1 has a gamma ray log with interpreted color fill for lithology scaled from 0 to 200 api units and a caliper log scaled from 0 to 16. For gamma ray, the blue colors indicate carbonate, yellow to orange are sandstone/siltstones, and the darker browns are shale facies. For caliper, higher values indicate irregularities in hole diameter. Track 2 has the deep resistivity log, scaled from 0.2 ohm\*m to 2000 ohm\*m. The blue shading cutoff is at 50 ohm\*m or less to help identify the more siliciclastic rocks. Track 3 is the porosity track and contains the red neutron porosity curve and the blue density porosity curve, both scaled from 30% to -10%. The pink shading on the neutron porosity curve highlights anything greater than 15% to identify zones with increased clay content. The green shading on the density porosity curve highlights anything greater than 10% porosity. This density 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 Mandelbaum Wells. Beige color-filled circles on the depth track of Well 1 represent planned landing targets for the Wells. The blue color-filled circle on the depth track of Well 1 indicates the actual landing target for COG's Van Gogh Fee #101H. The targeted reservoir has a constant thickness of approximately 2,800' and exhibits consistent reservoir facies throughout the HSU. The section of rock highlighted in blue represents a 600' thick limestone unit, seen consistently across the area, that separates the Van Gogh #101H landing target from our planned Mandelbaum landing targets.

9. **Exhibit 12** is an Isopach Map of the Gross Bone Spring interval. This map shows the location of the Mandelbaum HSU outlined by the red box. The surface/bottom hole locations of the Mandelbaum Wells are shown, zoomed in, to the right. The anticipated gross thickness of the interval is 2,800' feet throughout the HSU. The contour intervals are 25'. There is one well



[Chevron – Antelope Ridge 11-24-34 3H] that sits ~1,320' to the west of the Mandelbaum 122H, at the equivalent target depth. There are no other wells in the direct vicinity targeting similar horizons. Horizontal wells with blue circles shown on the map are all Bone Spring producers. The location of the previous cross-section from A-A' is also shown on this map.

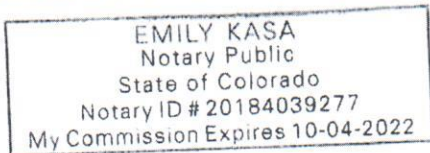
10. Based on my geologic study of the area, I conclude the following:
  - a. The horizontal spacing and proration unit is justified from a geologic standpoint.
  - b. There are no structural impediments or faulting that will interfere with horizontal development.
  - c. Each quarter-quarter section in 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.
11. **Exhibit 13** shows a Simplified Wellbore Diagram for each of the Wells in the HSU and demonstrate that the first and last take points for each well will be standard.
12. The Exhibits to this Affidavit were prepared by me, or compiled from Tap Rock's company business records.
13. The granting of this Application is in the interests of conservation and the prevention of waste.
14. The foregoing is correct and complete to the best of my knowledge and belief.

FURTHER AFFIANT SAYETH NAUGHT

Emily Lange  
EMILY LANGE

STATE OF COLORADO     )  
  )ss  
COUNTY OF JEFFERSON)

Subscribed to and sworn before me this 12<sup>th</sup> day of March, 2020.



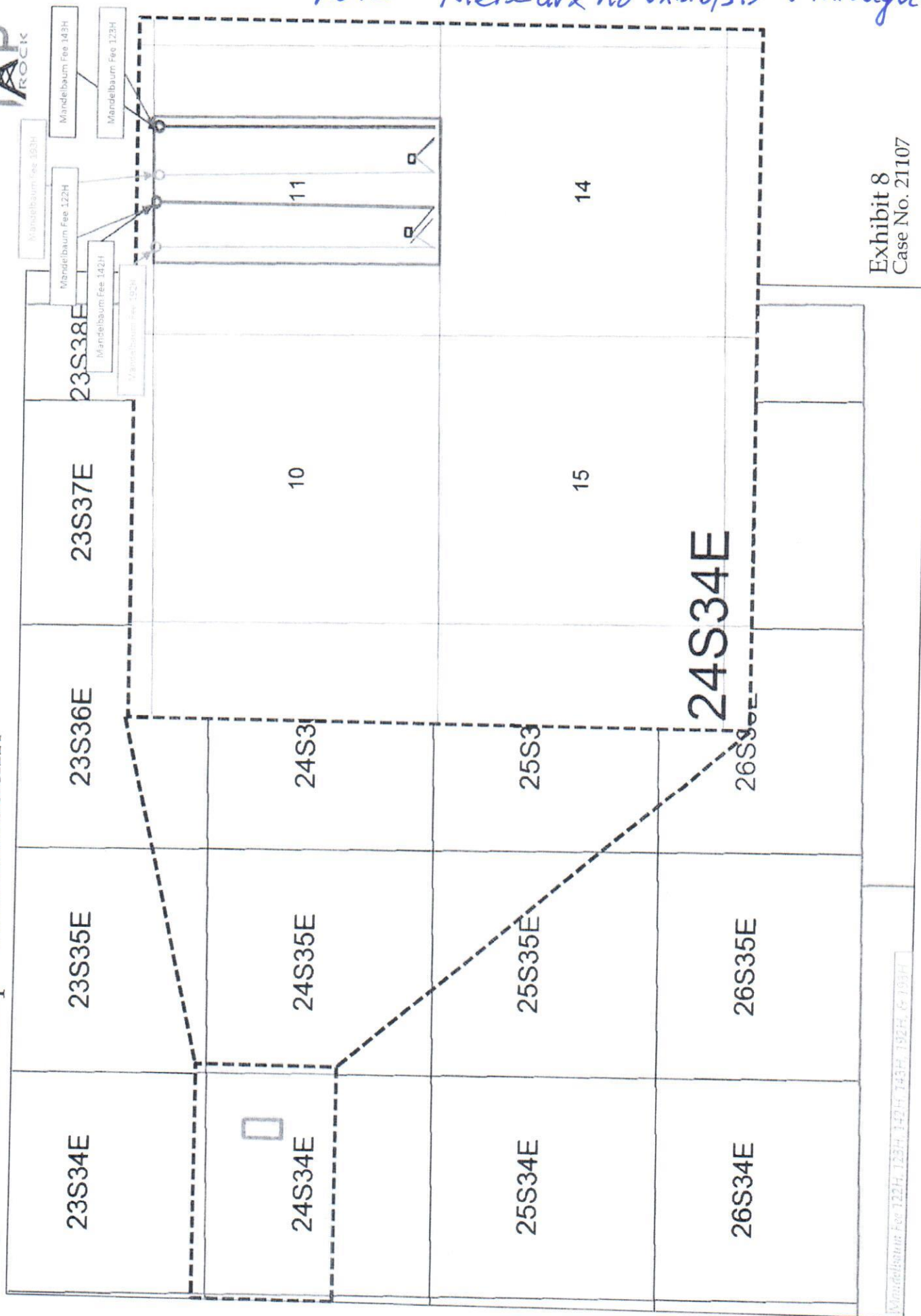
EP  
Notary Public

My Commission expires 10-4-2022.



**TRUCK**

NOTE: There are no Exhibits B-1 Through B-7

Exhibit 8  
Case No. 21107

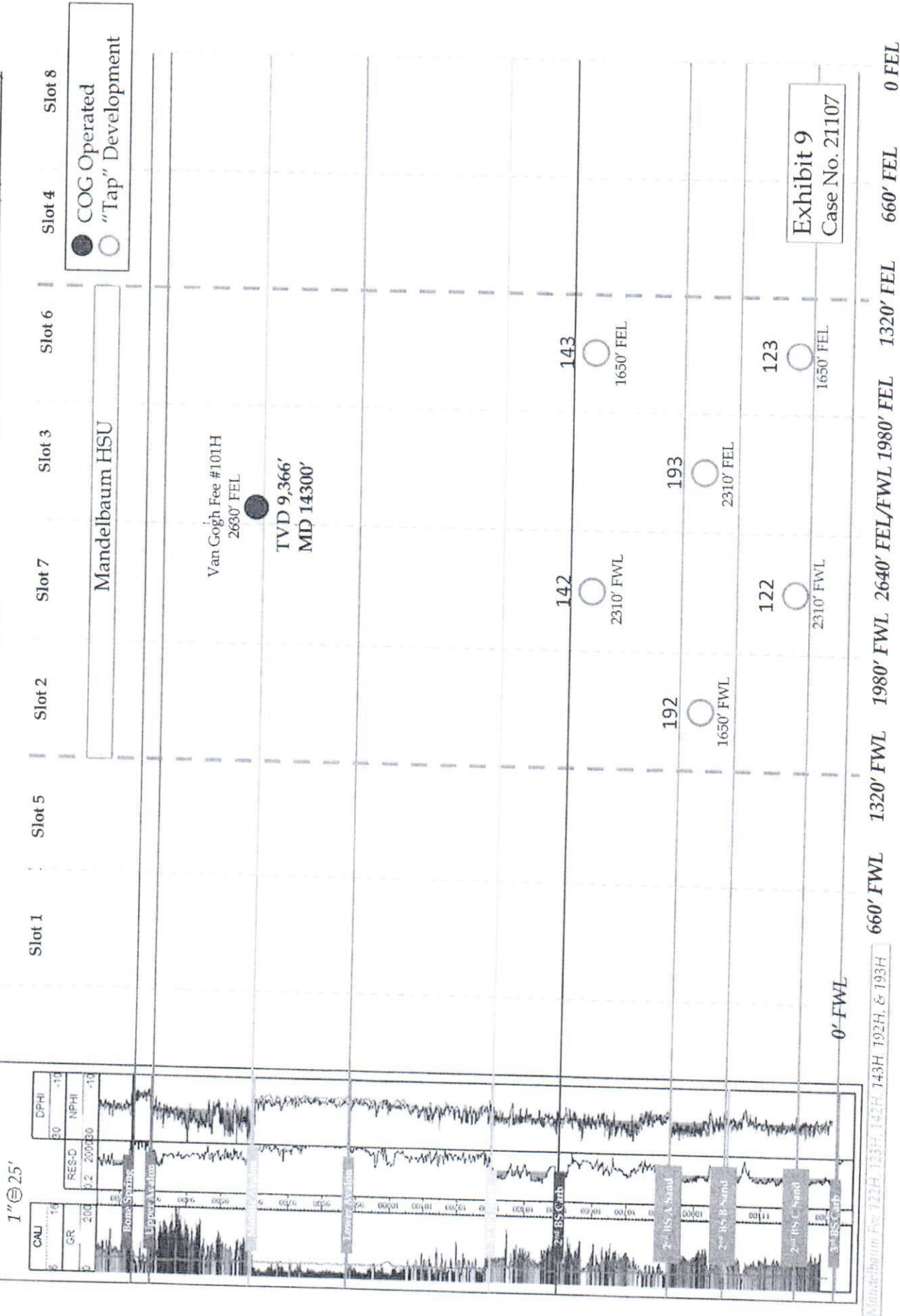
# Gun Barrel - Bone Spring Target Zone Development



COG PROD LLC  
SALVADOR FEE  
2H

Mandelbaum Unit (W/2 Sec 11)

Mandelbaum Unit (E/2 Sec 11)





**TA ROCK**



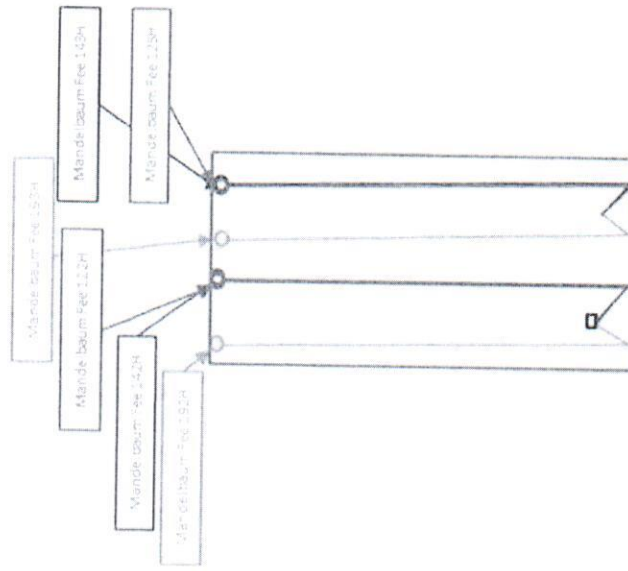
SHL Tap Rock -

## Horizontal Locator

○ BHL

Spacing Unit

C.I. = 25'



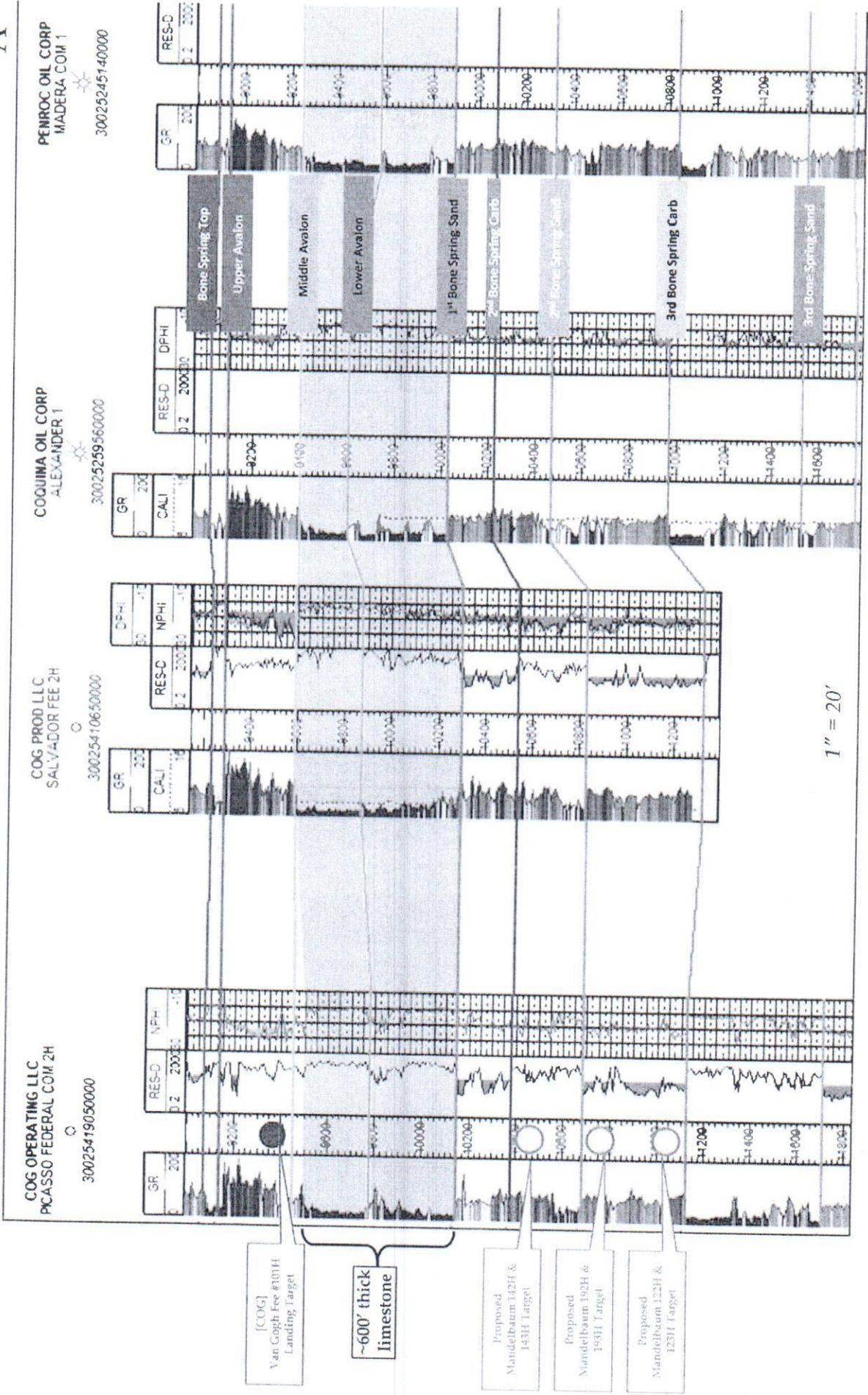


# Stratigraphic Cross-Section - A-A'



A

A'



Mandelbaum Fe. 122H, 123H, 142H, 143H, 192H, 193H



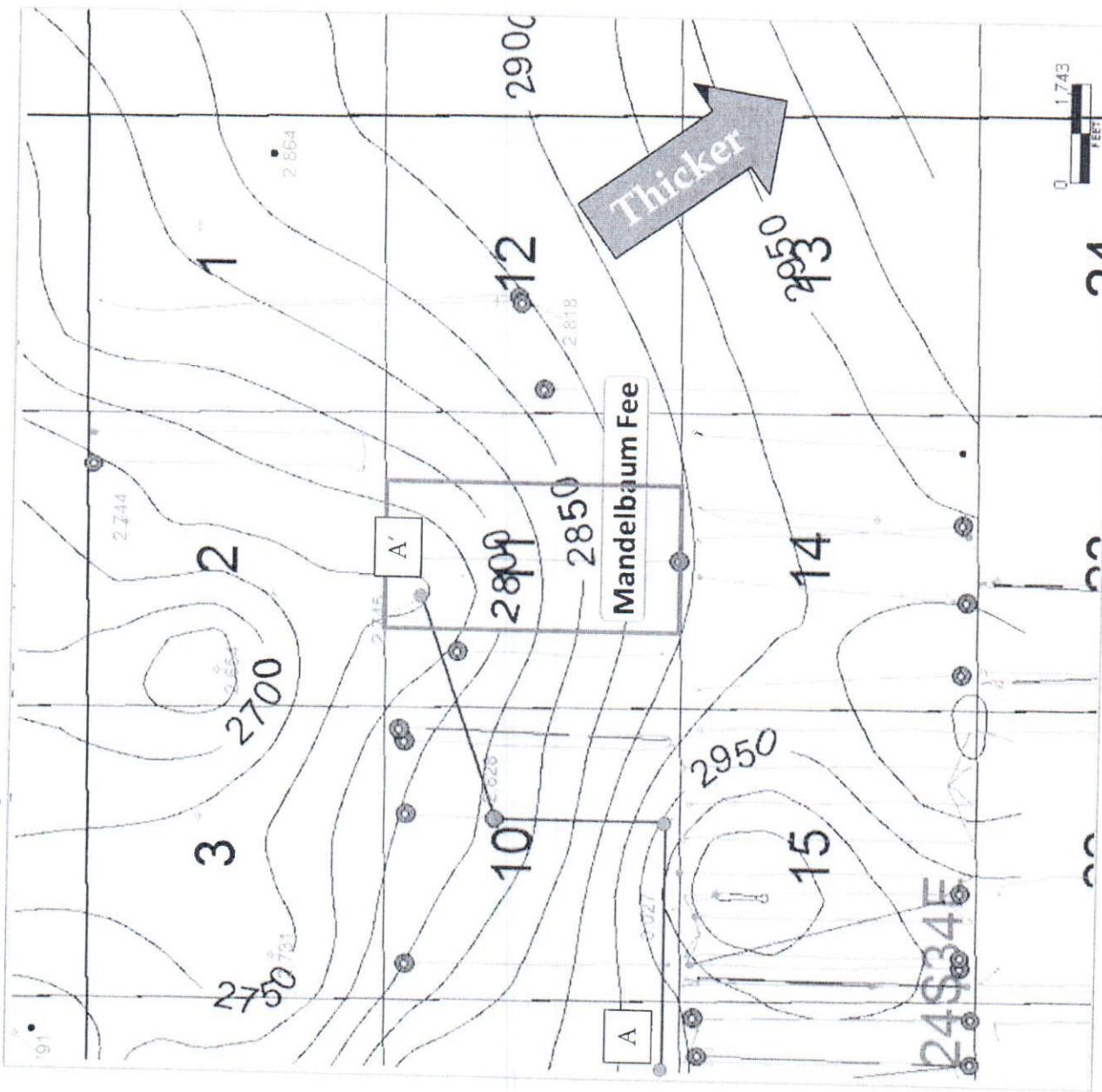
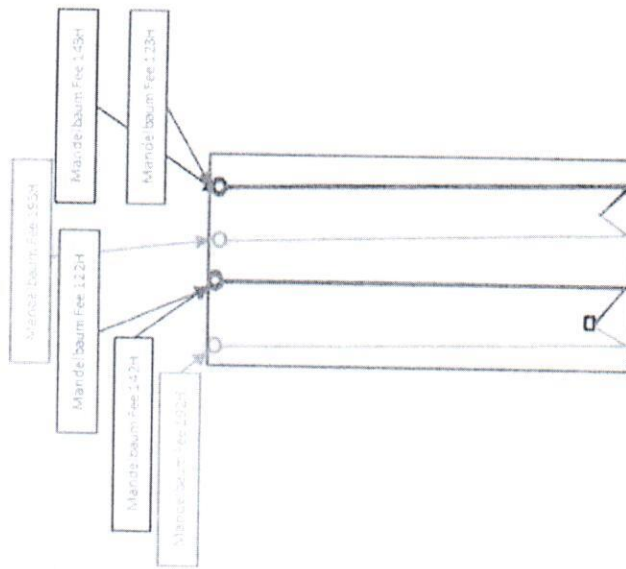
**TRUCK**

### Map Legend

SHL Tap Rock –  
BHL Horizontal L

Spacing Unit

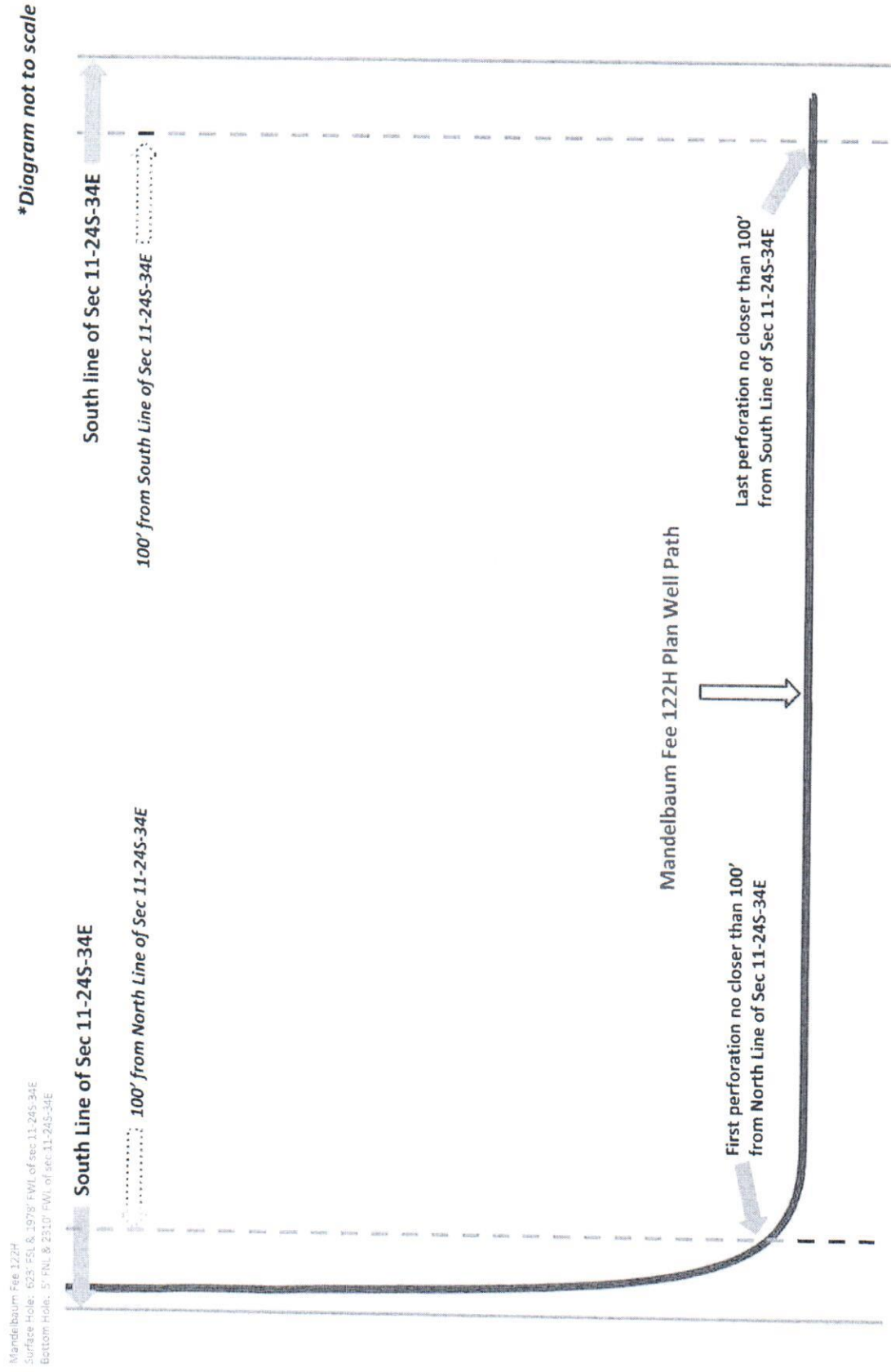
C.I. = 10'



*Monodolium* Foe 122H, 123H, 142H, 143H, 192H & 193H

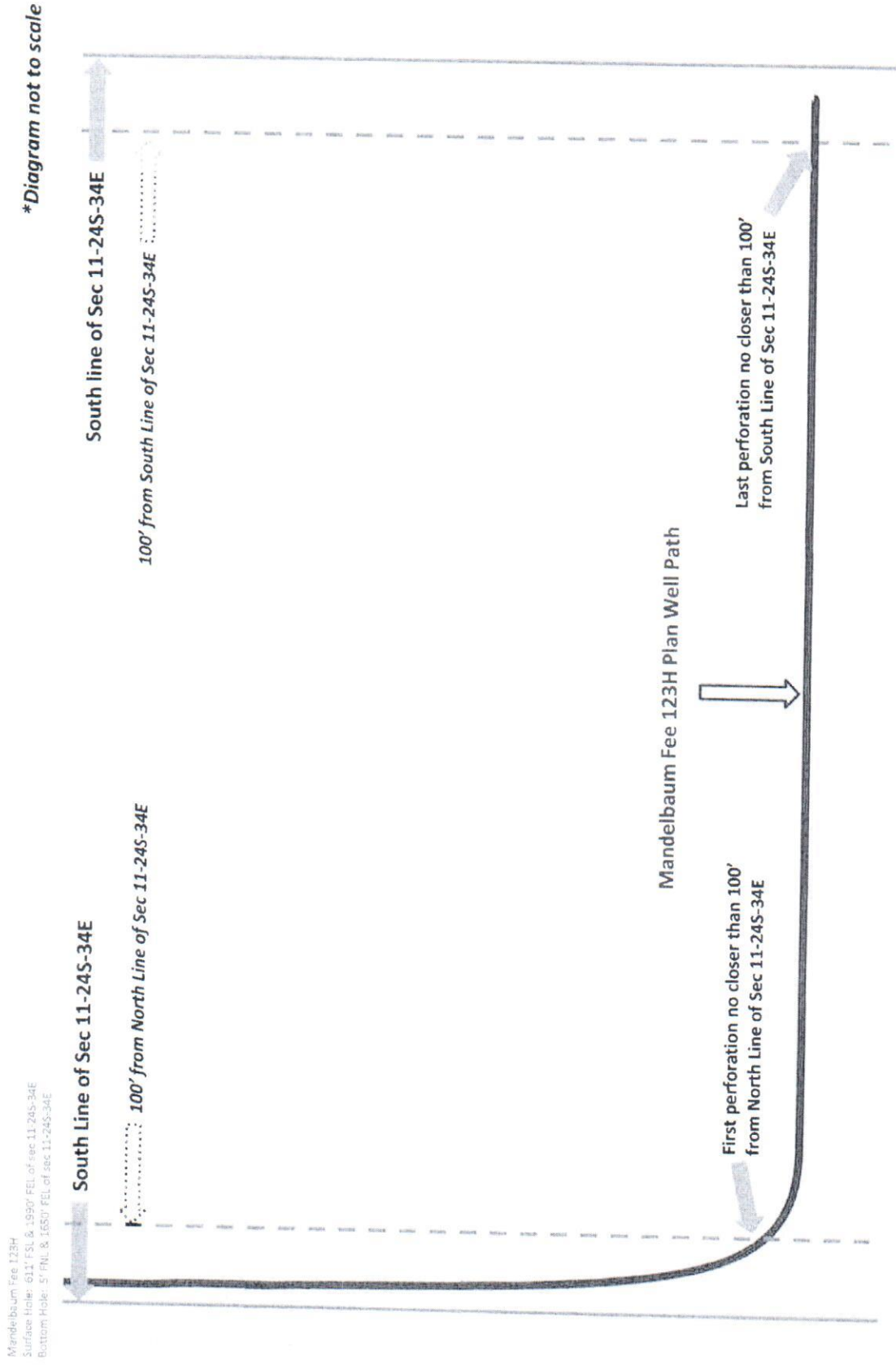
Exhibit 12  
Case No. 21107

# Mandelbaum Fee 122H (1 mile S-N Lateral)

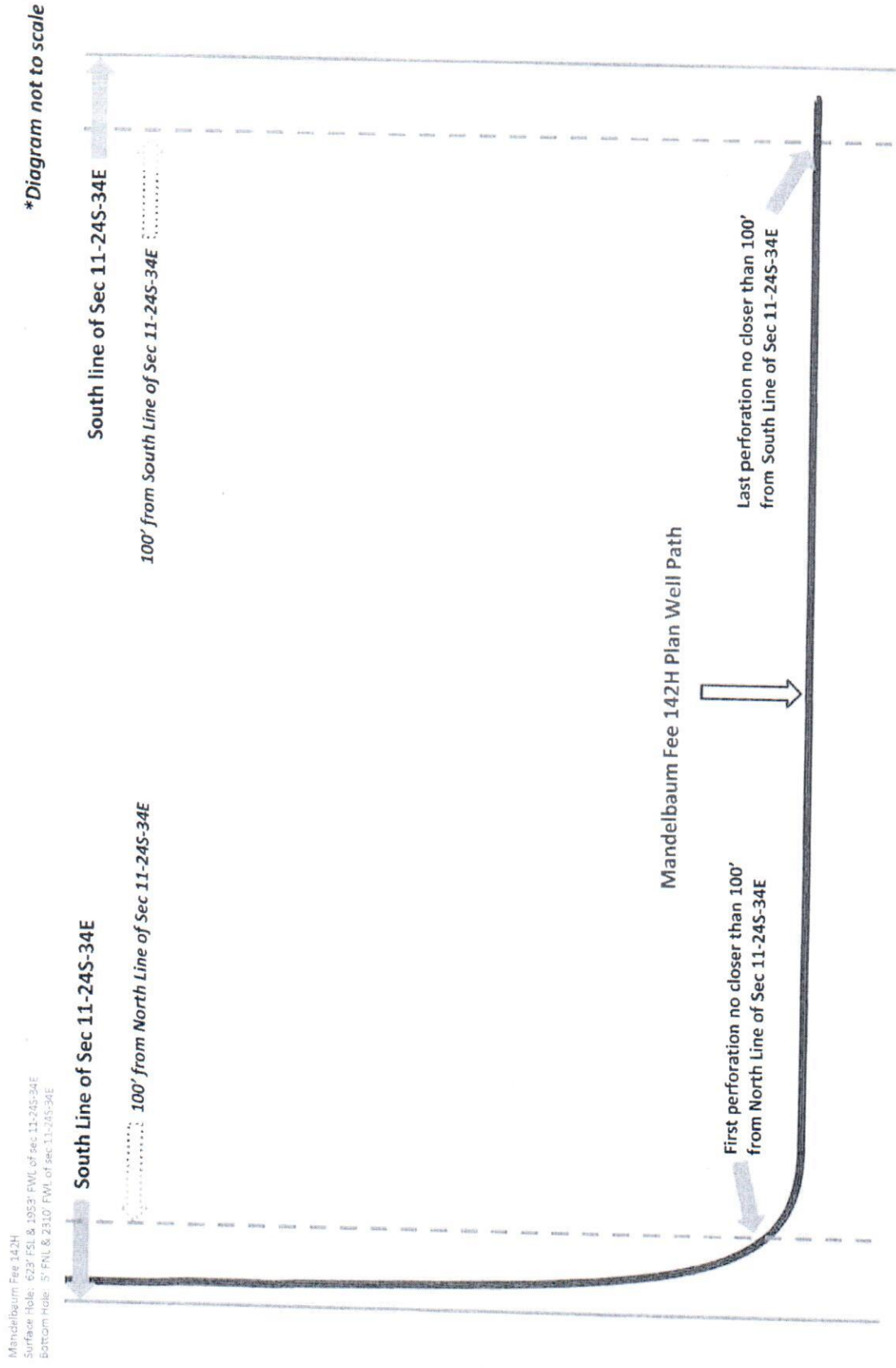




# Mandelbaum Fee 123H (1 mile S-N Lateral)



# Mandelbaum Fee 142H (1 mile S-N Lateral)





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

APPLICATION OF TAP ROCK RESOURCES,  
LLC TO ALLOW IT TO DRILL WELLS UNDER  
DIVISION ORDER NO. R-20538, LEA COUNTY,  
NEW MEXICO.

Case No. 21107

SELF-AFFIRMED STATEMENT OF NOTICE

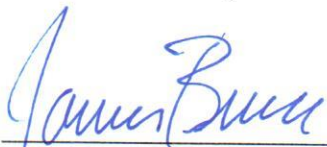
COUNTY OF SANTA FE     )  
  ) ss.  
STATE OF NEW MEXICO    )

James Bruce deposes and states:

1. I am over the age of 18, and have personal knowledge of the matters stated herein.
2. I am an attorney for Tap Rock Resources, LLC.
3. Tap Rock Resources, LLC has conducted a good faith, diligent effort to find the names and correct addresses of the interest owners entitled to receive notice of the application filed herein.
4. Notice of the application was provided to the interest owners, at their last known addresses, by certified mail. Copies of the notice letter and certified return receipts are attached hereto as Attachment A.
5. Applicant has complied with the notice provisions of Division Rules.
6. I understand that this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony in paragraphs 1 through 5 above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date handwritten next to my signature below.

Date:

April 14 2020

  
\_\_\_\_\_  
James Bruce

EXHIBIT

F

**JAMES BRUCE**  
ATTORNEY AT LAW

POST OFFICE BOX 1056  
SANTA FE, NEW MEXICO 87504

369 MONTEZUMA, NO. 213  
SANTA FE, NEW MEXICO 87501

(505) 982-2043 (Phone)  
(505) 660-6612 (Cell)  
(505) 982-2151 (Fax)

[jamesbruc@aol.com](mailto:jamesbruc@aol.com)

February 13, 2020

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

To: Persons on Exhibit A

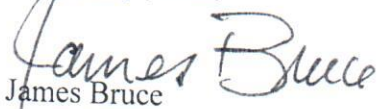
Ladies and gentlemen:

Enclosed is an application to drill infill wells under an existing pooling order, filed with the New Mexico Oil Conservation Division by Tap Rock Resources, LLC (Case No. 21107), regarding Bone Spring wells in the E/2W/2 and W/2E/2 of Section 11, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico.

This case is scheduled for hearing at 8:15 a.m. on Thursday, March 5, 2020, in Porter Hall at the Division's offices at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. You are not required to attend this hearing, but as an interest owner that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from contesting this matter at a later date.

A party appearing in a Division case is required by Division Rules to file a Pre-Hearing Statement no later than Wednesday, February 27, 2020. This statement must be filed with the Division's Santa Fe office at the above address, and should include: The names of the party and its attorney; a concise statement of the case; the names of the witnesses the party will call to testify at the hearing; the approximate time the party will need to present its case; and identification of any procedural matters that need to be resolved prior to the hearing. The Pre-Hearing Statement must also be provided to the undersigned.

Very truly yours,

  
James Bruce

Attorney for Tap Rock Resources, LLC

ATTACHMENT

A



## EXHIBIT A

### Working Interest Parties

GAJH 1989 Limited Partnership  
C/o Devon Energy Production Company, L.P.  
333 West Sheridan Ave.  
Oklahoma City, Oklahoma 73102

Marathon Oil Permian LLC  
5555 San Felipe Street  
Houston, TX 77056

Energen Resources Corporation  
605 Richard Arrington, Jr. Boulevard North  
Birmingham, AL 35203

Franklin Mountain Energy II, LLC  
123 W. Mills Street Suite 600  
El Paso, Texas 79901

Crown Oil Partners VI, LLC  
Crump Energy Partners III, LLC  
P.O. Box 50820  
Midland, TX 79710

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

### Overriding Royalty Party

Stryker Energy, LLC  
P.o. Box 53448  
Houston,, Texas 77052

**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.

Article Addressed to:

GAJIH 1989 Limited Partnership  
C/o Devon Energy Production Company, L.P.  
333 West Sheridan Ave.  
Oklahoma City, Oklahoma 73102



9590 9402 4582 8278 6086 71

Article Number (Transfer from service label)

7019 1640 0000 1700 9474

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

Domestic Return Receipt

1R-Ma-B5

**COMPLETE THIS SECTION ON DELIVERY**

- Signature ☒ Agent ☐
- Received by (Printed Name) ☐ Addressee ☐
- Date of Delivery

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

- 3. Service Type
  - ☐ Adult Signature
  - ☐ Registered Mail<sup>TM</sup>
  - ☐ Certified Mail<sup>®</sup>
  - ☐ Certified Mail Restricted Delivery
  - ☐ Return Receipt for Merchandise
  - ☐ Signature Confirmation<sup>TM</sup>
  - ☐ Signature Confirmation Restricted Delivery
  - ☐ Insured Mail
  - ☐ Restricted Delivery

**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:

Marathon Oil Permian LLC  
5555 San Felipe Street  
Houston, TX 77056



9590 9402 4582 8278 6086 64

2. A

7019 1640 0000 1700 9467

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

Domestic Return Receipt

1R-Ma-B5

**U.S. Postal Service<sup>TM</sup>**  
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Certified Mail Fee

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

- ☐ Return Receipt (hardcopy) \$
- ☐ Return Receipt (electronic) \$
- ☐ Certified Mail Restricted Delivery \$
- ☐ Adult Signature Required \$
- ☐ Adult Signature Restricted Delivery \$

Postage

Total Postage and Fees

Sent To Marathon Oil Permian LLC  
5555 San Felipe Street  
Houston, TX 77056  
Street and Apt. No., or  
City, State, Zip+4<sup>®</sup>

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

**COMPLETE THIS SECTION ON DELIVERY**

- A. Signature ☒ Agent ☐
- B. Received by (Printed Name) James Moore ☐ Addressee ☐
- C. Date of Delivery 2/18/20
- D. Is delivery address different from item 1? ☐ Yes ☐ No  
If YES, enter delivery address below:

- 3. Service Type
  - ☐ Adult Signature
  - ☐ Registered Mail<sup>TM</sup>
  - ☐ Certified Mail<sup>®</sup>
  - ☐ Certified Mail Restricted Delivery
  - ☐ Return Receipt for Merchandise
  - ☐ Signature Confirmation<sup>TM</sup>
  - ☐ Signature Confirmation Restricted Delivery
  - ☐ Restricted Delivery

Domestic Return Receipt

1R-Ma-B5



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- 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:

Energen Resources Corporation  
605 Richard Arrington, Jr. Boulevard North  
Birmingham, AL 35203



9590 9402 4582 8278 6086 57

2. Article Number (Transfer from carrier label)

7019 1640 0000 1700 9450

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

Domestic Return Receipt

TR-Ma-B5

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

☒ Agent  
☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

2-26

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

3. Service Type
- ☐ Priority Mail Express®
  - ☐ Registered Mail™
  - ☐ Registered Mail Restricted Delivery
  - ☐ Certified Mail®
  - ☐ Certified Mail Restricted Delivery
  - ☐ Return Receipt for Merchandise
  - ☐ Signature Confirmation™
  - ☐ Signature Confirmation Restricted Delivery

**U.S. Postal Service™**

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Certified Mail Fee \$

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

☐ Return Receipt (hardcopy) \$

☐ Return Receipt (electronic) \$

☐ Certified Mail Restricted Delivery \$

☐ Adult Signature Required \$

☐ Adult Signature Restricted Delivery \$

Postage \$

Total Postage and Fees \$

Sent To

Street and Apt. No. or P.O. Box

City, State, ZIP+4®

Energen Resources Corporation  
605 Richard Arrington, Jr. Boulevard North  
Birmingham, AL 35203

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for instructions

6702 1640 0000 1700 9450

**U.S. Postal Service™**

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

☐ Return Receipt (hardcopy) \$

☐ Return Receipt (electronic) \$

☐ Certified Mail Restricted Delivery \$

☐ Adult Signature Required \$

☐ Adult Signature Restricted Delivery \$

Postage \$

Total Postage and Fees \$

Sent To

Street and Apt. No. or P.O. Box

City, State, ZIP+4®

Franklin Mountain Energy II, LLC  
123 W. Mills Street Suite 600  
El Paso, Texas 79901

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for instructions

**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:

Franklin Mountain Energy II, LLC  
123 W. Mills Street Suite 600  
El Paso, Texas 79901



9590 9402 4582 8278 6086 40

2. Article Number (Transfer from carrier label)

7019 1640 0000 1700 9443

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

Domestic Return Receipt

TR-Ma-B5

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

☒ 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
- ☐ Priority Mail Express®
  - ☐ Registered Mail™
  - ☐ Registered Mail Restricted Delivery
  - ☐ Certified Mail®
  - ☐ Certified Mail Restricted Delivery
  - ☐ Return Receipt for Merchandise
  - ☐ Signature Confirmation™
  - ☐ Signature Confirmation Restricted Delivery



**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:**

Crown Oil Partners VI, LLC  
Crump Energy Partners III, LLC  
P.O. Box 50820  
Midland, TX 79710



9590 9402 4582 8278 6086 33

**2. Article Number (Transfer from service label)**

7019 1640 0000 1700 9436  
PS Form 3811, July 2015 PSN 7530-02-000-9053

TR-MG-BS Domestic Return Receipt

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature [Signature] ☒ Agent  
B. Received by (Printed Name) Christina Valencia ☐ Addressee  
C. Date of Delivery 8/18/20  
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<sup>®</sup>  
☐ Certified Mail Restricted Delivery  
☐ Collect on Delivery  
☐ Collect on Delivery Restricted Delivery  
☐ Insured Mail<sup>®</sup>  
☐ Priority Mail Express<sup>®</sup>  
☐ Registered Mail<sup>™</sup>  
☐ Registered Mail Restricted Delivery  
☐ Return Receipt for Merchandise  
☐ Signature Confirmation<sup>™</sup>  
☐ Signature Confirmation Restricted Delivery

**U.S. Postal Service<sup>™</sup>**  
**CERTIFIED MAIL<sup>®</sup> RECEIPT<sup>®</sup>**  
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Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
Postage \$

Total Postage and Fees

Sent To COG Operating LLC  
600 W. Illinois Ave.  
Midland, Texas 79701

City, State, ZIP+4<sup>®</sup>

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

**U.S. Postal Service<sup>™</sup>**  
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Extra Services & Fees (check box, add fee as appropriate)  
☐ Return Receipt (hardcopy) \$  
☐ Return Receipt (electronic) \$  
☐ Certified Mail Restricted Delivery \$  
☐ Adult Signature Required \$  
☐ Adult Signature Restricted Delivery \$  
Postage \$

Total Postage and Fees

Sent To Crown Oil Partners VI, LLC  
Crump Energy Partners III, LLC  
P.O. Box 50820  
Midland, TX 79710

City, State, ZIP+4<sup>®</sup>

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- 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:**

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



9590 9402 4582 8278 6086 26

**2. Article Number**

7019 1640 0000 1700 9429

(over \$500)

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

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature [Signature] ☒ Agent  
B. Received by (Printed Name) Jennifer Whidiss ☐ Addressee  
C. Date of Delivery 7/18/20  
D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

3. Service Type  
☐ Priority Mail Express<sup>®</sup>  
☐ Registered Mail<sup>™</sup>  
☐ Adult Signature Restricted Delivery  
☐ Certified Mail<sup>®</sup>  
☐ Certified Mail Restricted Delivery  
☐ Collect on Delivery  
☐ Collect on Delivery Restricted Delivery  
☐ Return Receipt for Merchandise  
☐ Signature Confirmation<sup>™</sup>  
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

TR-MG-BS



# COMPULSORY POOLING APPLICATION CHECKLIST

ALL INFORMATION IN THE APPLICATION MUST BE SUPPORTED BY SIGNED AFFIDAVITS

Case:	21107
Date	April 16, 2020
Applicant	Tap Rock Resources, LLC
Designated Operator & OGRID (affiliation if applicable)	Tap Rock Operating, LLC/OGRID No. 372043 The operator is the operating entity for applicant
Applicant's Counsel:	James Bruce
Case Title:	Application of Tap Rock Resources, LLC To Allow It To Drill Infill Wells Under Division Order No. R-20538, Lea County, New Mexico
Entries of Appearance/Intervenors:	COG Operating LLC/Ocean Munds-Dry <i>et al.</i>
Well Family	Mandelbaum Fee Wells
<b>Formation/Pool</b>	
Formation Name(s) or Vertical Extent:	Bone Spring formation
Primary Product (Oil or Gas):	Oil
Pooling this vertical extent:	Entire Bone Spring formation
Pool Name and Pool Code:	Red Hills; Bone Spring, North/96434
Well Location Setback Rules:	Statewide rules and current horizontal well rules
Spacing Unit Size:	Quarter-quarter Section/40 acre
<b>Spacing Unit</b>	
Type (Horizontal/Vertical)	Horizontal
Size (Acres)	320 acres
Building Blocks:	40 acres
Orientation:	South-North
Description: TRS/County	E/2W/2 and W/2E/2 §11-24S-34E, NMPM, Lea County
Standard Horizontal Well Spacing Unit (Y/N), If No, describe	Yes
<b>Other Situations</b>	
Depth Severance: Y/N. If yes, description	No
Proximity Tracts: If yes, description	Yes
Proximity Defining Well: if yes, description	Van Gogh Fee Well No. 101H (first well drilled under pooling order) SHL: 210 FNL & 2630 FEL §11 BHL: 50 FSL & 2630 FEL §11
Applicant's Ownership in Each Tract	Exhibit D-3
<b>Well(s)</b>	
Name & API (if assigned), surface and bottom hole location, footages, completion target, orientation, completion status (standard or non-standard)	Mandelbaum Fee Well No. 122H API No. 30-025-PENDING SHL: 623 FSL & 1978 FWL §11 BHL: 5 FNL & 2310 FWL §11 FTP: 100 FSL & 2310 FWL §11 LTP: 100 FNL & 2310 FWL §11 Formation: 2 <sup>nd</sup> Bone Spring/TVD 11000 feet/MD 16410 feet Completion location expected to be standard

EXHIBIT

G



Mandelbaum Fee Well No. 123H  
 API No. 30-025-PENDING  
 SHL: 611 FSL & 1990 FEL §11  
 BHL: 5 FNL & 1650 FEL §11  
 FTP: 100 FSL & 1650 FEL §11  
 LTP: 100 FNL & 1650 FEL §11  
 Formation: 2<sup>nd</sup> Bone Spring/TVD 11000 feet/MD 16410 feet  
 Completion location expected to be standard

Mandelbaum Fee Well No. 142H  
 API No. 30-025-PENDING  
 SHL: 623 FSL & 1953 FWL §11  
 BHL: 5 FNL & 2310 FWL §11  
 FTP: 100 FSL & 2310 FWL §11  
 LTP: 100 FNL & 2310 FWL §11  
 Formation: 2<sup>nd</sup> Bone Spring/TVD 10370 feet/MD 15780 feet  
 Completion location expected to be standard

Mandelbaum Fee Well No. 143H  
 API No. 30-025-PENDING  
 SHL: 611 FSL & 2015 FEL §11  
 BHL: 5 FNL & 1650 FEL §11  
 FTP: 100 FSL & 1650 FEL §11  
 LTP: 100 FNL & 1650 FEL §11  
 Formation: 2<sup>nd</sup> Bone Spring/TVD 10370 feet/MD 15780 feet  
 Completion location expected to be standard

Mandelbaum Fee Well No. 192H  
 API No. 30-025-PENDING  
 SHL: 648 FSL & 1953 FWL §11  
 BHL: 5 FNL & 1657 FWL §11  
 FTP: 100 FSL & 1657 FWL §11  
 LTP: 100 FNL & 1657 FWL §11  
 Formation: 2<sup>nd</sup> Bone Spring/TVD 10600 feet/MD 16010 feet  
 Completion location expected to be standard

Mandelbaum Fee Well No. 193H  
 API No. 30-025-PENDING  
 SHL: 636 FSL & 2015 FEL §11  
 BHL: 5 FNL & 2308 FEL §11  
 FTP: 100 FSL & 2308 FEL §11  
 LTP: 100 FNL & 2308 FEL §11  
 Formation: 2<sup>nd</sup> Bone Spring/TVD 10600 feet/MD 16010 feet  
 Completion location expected to be standard

Horizontal Well First and Last Take Points

See above

Completion Target (Formation, TVD and MD)

See Above

**AFE Capex and Operating Costs**

Drilling Supervision/Month \$

\$7000

Production Supervision/Month \$

\$700



Justification for Supervision Costs	Exhibit D, page 3
Requested Risk Charge	Cost + 200%/Exhibit D, page 3
<b>Notice of Hearing</b>	
Proposed Notice of Hearing	Exhibit C
Proof of Mailed Notice of Hearing (20 days before hearing)	Exhibit F
Proof of Published Notice of Hearing (10 days before hearing)	Not Applicable
<b>Ownership Determination</b>	
Land Ownership Schematic of the Spacing Unit	Exhibit D-2
Tract List (including lease numbers and owners)	Exhibits D-3 and D-4
Pooled Parties (including ownership type)	Exhibit D-3
Unlocatable Parties to be Pooled	
Ownership Depth Severance (including percentage above & below)	None
<b>Joinder</b>	
Sample Copy of Proposal Letter	Exhibit D-5
List of Interest Owners ( <i>i.e.</i> Exhibit A of JOA)	Exhibit D-4
Chronology of Contact with Non-Joined Working Interests	Exhibit D-6
Overhead Rates In Proposal Letter	
Cost Estimate to Drill and Complete	Exhibit D-5
Cost Estimate to Equip Well	Exhibit D-5
Cost Estimate for Production Facilities	Exhibit D-5
<b>Geology</b>	
Summary (including special considerations)	Exhibit E
Spacing Unit Schematic	Exhibit E-8
Gunbarrel/Lateral Trajectory Schematic	Exhibit E-9
Well Orientation (with rationale)	Standup/Exhibit E
Target Formation	Bone Spring
HSU Cross Section	Exhibit D-11
Depth Severance Discussion	Not Applicable
<b>Forms, Figures and Tables</b>	
C-102	Exhibit D-1
Tracts	Exhibit D-2
Summary of Interests, Unit Recapitulation (Tracts)	Exhibit D-4
General Location Map (including basin)	Exhibit E-8
Well Bore Location Map	Exhibit E-9
Structure Contour Map - Subsea Depth	Exhibit E-10
Cross Section Location Map (including wells)	Exhibit E-11
Cross Section (including Landing Zone)	Exhibit CE11
<b>Additional Information</b>	

**CERTIFICATION: I hereby certify that the information provided in this checklist is complete and accurate.**

**Printed Name** (Attorney or Party Representative):

James Bruce

**Signed Name** (Attorney or Party Representative):

**Date:**

April 14, 2020