RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL & GAS DOCKET NO. 08-0302080

THE APPLICATION OF APACHE CORPORATION FOR A NEW FIELD DESIGNATION AND TO ADOPT TEMPORARY FIELD RULES FOR THE PROPOSED ALPINE HIGH (CONS) FIELD, REEVES AND CULBERSON COUNTIES, TEXAS

HEARD BY: Paul Dubois – Technical Examiner
Ryan Lammert – Administrative Law Judge

HEARING DATE: January 25, 2017

CONFERENCE DATE: February 14, 2017

APPEARANCES:	**REPRESENTING:**
APPLICANT	
Brian R. Sullivan, P. E.	Apache Corporation
Kevin Alexander	
Thomas Richter, P. E.	
Randy Early, P. E.	
Tim Samson	
Belinda Wolf	
Krystal Eversdyk	
INTERESTED PARTY	
Patrick F. Thompason	Texas General Land Office
OBSERVER	
Dale Miller	Observer

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

This is the application of Apache Corporation ("Apache") for a new field designation and to adopt temporary field rules for the proposed Alpine High (Cons) Field (ID No. 01942 500) in Reeves and Culberson Counties, Texas. Apache is requesting a suite of temporary field rules commonly adopted to facilitate field development with horizontal and vertical wells. The Examiners recommend that the proposed field rules, with one exception, be adopted on a temporary basis for a period of 18 months as requested by Apache. Apache agreed at hearing to withdraw its request for a 4,000 standard cubic feet ("scf") of gas per barrel of oil gas well classification rule. Further, in its amended application filed on January 5, 2017[1], Apache deleted field rule requests that are now covered by Statewide Rule 86.

DISCUSSION OF THE EVIDENCE

The proposed Alpine High (Cons) Field is located in southwestern Reeves and eastern Culberson Counties, Texas. The proposed field came about as a result of a reinterpretation of the geology in the Delaware Basin.[2] Apache stated that the industry has long held that the subject area: (1) contained sediments with high clay content; (2) exhibited a uplifted and complex structural history; and (3) advanced thermal maturity to produce dry gas. Apache's intial exploration, however, demonstrates the opposite. The proposed Alpine High (Cons) Field: (1) contains sediments with very low clay content; (2) a relatively stable paleo-high structural history; and (3) an intermediate thermal maturity to produce wet gas and oil.

Apache has leased approximately 307,000 acres in the field area, which is about 20 miles wide and 75 miles long. Apache has drilled approximately two dozen wells to prove up its concept.[3] There are no other geologically equivalent fields in the vicinity of the proposed new field.

Apache proposes its Mont Blanc Well No. 1H (API No. 42-389-35184) as the discovery well on Form P-7.[4] The well is located eighteen (18) miles northwest of Balmorhea, Texas. The vertical pilot hole was drilled through the entire Pennsylvanian, Barnett/Mississippian Lime, Woodford and Devonian Formations, and the well was completed as a horizontal well in the lower Woodford Formation. The well was initially tested on July 10, 2016, at a rate of 17,068 thousand cubic feet ("mcf") of gas per day and 24 barrels of 55° API condensate for a gas-liquid ratio ("GLR") of 711,167 scf per barrel, meeting the statutory definition of a gas well. To date the Mont Blanc Well No. 1H has produced 1.385 billion cubic feet of gas, 10,060 barrels of natural gas liquids, and 1,123 barrels of condensate since initial production began in July 2016.[5]

Apache offered evidence for the productivity of its initial wells in the proposed field. (Ex. 25). Other Apache wells in the proposed field show producing rates and cumulative

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[1] Ex. 6.
[2] Ex. 8-11.
[3] Ex. 2, 7 & 18.
[4] Ex. 4.
[5] Ex. 24, 25 & 35.

production data similar to the Mont Blanc Well No. 1H. Completion data for five wells submitted by Apache indicate GLR values ranging from 22,440 scf per barrel to 711,167 scf per barrel. Apache has filed gas well completion reports with the Commission for these five wells. In addition, Apache provided evidence that hydrocarbon production from its wells in the field is stable and water production has sharply declined. Apache has not observed evidence of an active water drive in the reservoir; the produced water is flowback from the fracture stimulation.

Apache compared the formation characteristics and cumulative production rates of its wells to those in other comparable resource plays. Apache concluded from these comparisons that its wells in the proposed Alpine High (Cons) Field are as good or likely better than wells in the Scoop/Stack, Marcellus, Utica and Eagle Ford plays. Further, Apache demonstrated that its wells are maintaining rate and dewatering with time. At this time, Apache's horizontal laterals are relative short at 4,200 feet. As Apache gains more experience it anticipates that its laterals will be significantly longer with corresponding increases in rate and ultimate recovery.[6]

The proposed correlative interval is from 10,425 feet to 12,245 feet (a thickness of 1,820 feet) in the vertical section of the Mont Blanc Well No. 1H. Across the area this interval is generally encountered between about 10,000 and 13,000 feet, and the formation pressure varies from about 5,000 to 9,000 pounds per square inch ("psi"). This interval includes the Pennsylvanian, Barnett/Mississippian Lime, Woodford and Devonian Formations.[7] These intervals represent a transgressive source interval that, Apache asserts, is without mechanical boundaries between the individual formations. The reservoir exhibits very low clay content (10 to 20 percent), total organic carbon ranging from 4 to 10 percent, and a stable structural history. The total porosity ranges from about 8 to 12 percent. Together, these characteristics are conducive to quality reservoir formation.

Apache asserts that the entire proposed Alpine High (Cons) Field correlative interval is hydrocarbon saturated in the wet gas phase. Further, there is no equivalent production from the Pennsylvanian, Barnett/Mississippian Lime, Woodford and Devonian Formations within 2.5 miles of the discovery well.[8] The Wolfcamp and Bone Springs Formations are located stratigraphically above the proposed designated correlative interval. Apache and other operators have producing wells in both of these formations. Apache's Bone Springs Formation wells are carried in the Sandbar (Bone Springs) Field and its wells in the Wolfcamp Formation are carried in the Phantom (Wolfcamp) Field. Most of the Phantom (Wolfcamp) and Sandbar (Bone Spring) Field development to date, however, is located north of the subject Alpine High (Cons) Field area. The field rules for the Sandbar (Bone Springs) and Phantom (Wolfcamp) are similar to the temporary rules requested by Apache for the Alpine High (Cons) Field.[9]

Apache asserts that the proposed Alpine High (Cons) Field rules mirror the field rules for the overlying Sandbar (Bone Springs) and Phantom (Wolfcamp) Fields. The congruence of the various field rules will promote the orderly development of the Alpine High (Cons) Fields, as

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[6] Ex. 24, 25, & 27-32.
[7] Ex. 8.
[8] Ex. 3.
[9] Ex. 12, 14, 15 & 17

well as the vertically-adjacent fields, facilitating future recompletion and/or comingling. Specifically, the rules requested by Apache in this proceeding are:

- Correlative interval from a depth of 10,425 feet to 12,245 feet;
- 330-foot lease line spacing and 0 feet between well spacing;
- For horizontal wells, dual lease line spacing provisions (330-foot perpendicular, and 100-foot first/last take points);
- Non-perforation zones;
- 40 acre proration units for vertical oil or gas wells;
- For horizontal drainhole wells, the proration unit shall be the greater of 40 acres or the amount of Acreage (A) determined by the formula, A = 0.032 x L, where L is the length (in feet) of the horizontal lateral component of the well from the first take point to the last take point (excluding non-perforation zones), and A = the acreage assigned, provided that, if A is not divisible by 20, A will be rounded up to the next number divisible by 20.
- A two-factor allocation formula for gas wells based on 75% Acreage and 25% Deliverability
- Suspension of the Allocation Formula
- No Plats with Form P-16 when the Allocation Formula is suspended
- Rule 86 to apply to all other aspects of horizontal wells

Apache offered evidence that it has a 100% market demand for all of the gas currently being produced from this proposed field. Further, Apache testified that it is currently building out infrastructure in the field that will provide for all future gas to be produced to market. Because Apache has a 100% market demand for all the gas from this proposed field, Apache requested that it not be required to file plats with Forms P-16 to ease the burden of having to make unnecessary administrative filings.

Apache requests that these rules be adopted on a temporary basis for a period of 18 months.

FINDINGS OF FACT

1. Notice of this hearing was given to all parties entitled to notice at least ten days prior to the date of the hearing.
2. The discovery well for the proposed Alpine High (Cons) Field is the Mont Blanc Well No. 1H (API No. 42-389-35184).

a. The well is located eighteen (18) miles northwest of Balmorhea, Texas.

b. The vertical portion of the well was drilled through the Pennsylvanian, Barnett/Mississippian Lime, Woodford and Devonian Formations.

c. The Pennsylvanian, Barnett/Mississippian Lime, Woodford and Devonian formation are hydrocarbon saturated, and no mechanical boundaries have been identified between the formations.

d. The Pennsylvanian, Barnett/Mississippian Lime, Woodford and Devonian Formations are a transgressive source interval and this type of deposition removed the mechanical boundaries between the formations.

e. The correlative interval from 10,425 feet to 12,245 feet contains the Pennsylvanian, Barnett/Mississippian Lime, Woodford and Devonian formations.

f. On initial completion test, the well tested at 17,068 mcfd of gas and 24 bpd of condensate.

g. The well has cumulatively produced over in the last six months 1.385 billion cubic feet of gas, 10,060 barrels of natural gas liquids and 1,123 barrels of condensate.

3. The proposed Correlative Interval is a source rock that exhibits the following characteristics:

a. The Total Organic Content (TOC) is between 4 and 10% by weight.

b. The primary mineralogy is silicate.

c. The clay content is low at 10-20%.

d. The total porosity is relatively high at 8-12%.

e. The pressure in the correlative interval varies from 5,000-9,000 psi.

f. The depth of the Correlative Interval ranges from approximately 10,000 to 13,000 feet.

g. There is no apparent water drive and the water that wells produce is fracture stimulation flow back.

4. There is no existing stratigraphically equivalent production in the southwestern portion of Reeves and the eastern portion of Culberson Counties.

5. A new field designation is appropriate for the Alpine High (Cons) Field.

6. The Temporary Field Rules proposed by Apache will facilitate field development with horizontal or vertical wells.

7. At the hearing, the applicant agreed on the record that a Final Order in this case is to be effective when the Master Order is signed.

CONCLUSIONS OF LAW

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code § 81.051.

2. All notice requirements have been satisfied. 16 Tex. Admin. Code §§ 1.43 and 1.45.

3. Approval of the requested new field discovery and adoption of Temporary Field Rules for the Alpine High (Cons) Field will prevent waste, protect correlative rights and promote the orderly development of the field.

4. Pursuant to §2001.144(a)(4)(A), of the Texas Government Code, and the agreement of the applicant, the accompanying Final Order is effective when a Master Order relating to this Final Order is signed on February 14, 2017.

EXAMINERS' RECOMMENDATION

Based on the above Findings of Fact and Conclusions of Law, the Technical Examiner and Administrative Law Judge recommend that the Commission approve the New Field Discovery and adopt Temporary Field Rules for the Alpine High (Cons) Field (ID No. 01942 500) for a period of eighteen (18) months as requested by Apache Corporation.

Respectfully submitted,

Paul Dubois
Technical Examiner

Ryan Lammert
Administrative Law Judge