

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

**APPLICATION OF CIMAREX ENERGY CO.
FOR COMPULSORY POOLING,
EDDY COUNTY, NEW MEXICO.**

CASE NO. 20590

Examiner Docket: July 11, 2019

Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, and 7H



Earl E. DeBrine, Jr.
Lance D. Hough



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

CIMAREX'S EXHIBITS

Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, and 7H

Exhibit A Affidavit of Caitlin Pierce

- A-1 Application
- A-2 Lease Tract Map
- A-3 Well Proposal Letter
- A-4 Authorizations for Expenditures

Exhibit B Affidavit of Harrison Hastings

- B-1 Deep Structure Map
- B-2 Winerack Diagram
- B-3 Cross-Section Locator Map – Upper Wolfcamp
- B-4 Gross Interval Isopach Map – Upper Wolfcamp
- B-5 Stratigraphic Cross-Section – Upper Wolfcamp
- B-6 Cross-Section Locator Map – Lower Wolfcamp
- B-7 Gross Interval Isopach Map – Lower Wolfcamp
- B-8 Stratigraphic Cross-Section – Lower Wolfcamp

Exhibit C Affidavit of Lance D. Hough

- Certified Mail Log / Notice - June 21, 2019
- Certified Mail Log / Report - July 10, 2019
- Certified Mail Log / Notice - July 8, 2019 (Additional ORRI)
- Certified Mail Log / Report - July 10, 2019 (Additional ORRI)
- Affidavit of Publication – June 27, 2019

Earl E. DeBrine, Jr.
Lance D. Hough



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STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
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APPLICATION OF CIMAREX
ENERGY CO. FOR COMPULSORY
POOLING, EDDY COUNTY,
NEW MEXICO

CASE NO. 20590

AFFIDAVIT OF CAITLIN PIERCE

STATE OF TEXAS)
) ss.
COUNTY OF MIDLAND)

Caitlin Pierce, being duly sworn, deposes and states:

1. I am a landman for Cimarex Energy Co. ("Cimarex"), over the age of 18 and have personal knowledge of the matters stated herein. I have previously been qualified to testify by the New Mexico Oil Conservation Division as an expert in petroleum land matters and my credentials were accepted as a matter of record by the Division.

2. I am familiar with the applications filed by Cimarex in the above-referenced case and the land matters involved. Pursuant to NMAC 19.15.4.12.A(1), the following information is submitted in support of the above-referenced compulsory pooling applications filed by Cimarex.

3. This case involves a request for an order from the Division for compulsory pooling of interest owners who have refused to voluntarily pool their interests for the proposed Wolfcamp horizontal spacing unit described below, and in wells to be drilled in the horizontal spacing unit. In its Application, Cimarex seeks an order from the Division pooling all uncommitted mineral interests within a 640-acre Wolfcamp horizontal spacing unit underlying the W/2 of Section 34 and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico. This spacing unit will be dedicated to the **Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, and 7H** wells, to be horizontally drilled. The Application is attached as **Exhibit A.1**.



4. Prior to filing the application, Cimarex made a good faith effort to obtain voluntary joinder of the working interest owners in the proposed wells. I identified the working interest and overriding royalty interest owners from a title opinion. To locate owners, I conducted a diligent search of the public records in the county where the wells are to be located and conducted phone directory and computer internet searches to locate contact information for parties entitled to notification, and mailed all working interest owners well proposals, including an Authorization for Expenditure and a form of Operating Agreement to any owner who requested one.

5. No opposition is expected. Prior to filing its applications Cimarex contacted the interest owners being pooled regarding the proposed wells; the pooled interest owners have failed or refused to voluntarily commit their interests in the wells. Cimarex provided all of the working interest owners and any unleased mineral owners, and all but one potential overriding royalty owners with notice of this application. Cimarex also published notice of the hearing on the applications in a newspaper of general circulation in Eddy County. None of the above mentioned interest holders have entered an appearance in opposition to Cimarex' applications.

6. One additional potential overriding royalty owner was discovered this week, after prior notices of the application were mailed and the newspaper advertisement was published. Notice to this potential overriding royalty owner has been mailed to his last known address.

7. Cimarex plans to drill the **Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, and 7H** wells to a depth sufficient to test the Wolfcamp formation, and laterally and in a southerly direction within the formation to the bottom hole locations referenced below:

- The **Hayduke 34-3 Federal Com 1H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 330' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 8,610'.

- The **Hayduke 34-3 Federal Com 2H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 990' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 8,830'.
- The **Hayduke 34-3 Federal Com 3H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 1650' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 8,610'.
- The **Hayduke 34-3 Federal Com 4H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 2310' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 8,830'.
- The **Hayduke 34-3 Federal Com 5H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 330' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 9,555'.
- The **Hayduke 34-3 Federal Com 6H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 1310' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 9,340'.
- The **Hayduke 34-3 Federal Com 7H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 2310' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 9,555'.

8. The wells will develop the Purple Sage Wolfcamp Gas Pool (Pool ID: 98220), which is a gas pool.

9. The producing interval for the well will be orthodox and will comply with the Division's special set back requirements in Order No. R-14262 as the first and last take points will be no closer than 330' from the spacing unit boundary, and the completed lateral will be no closer than 330' from the spacing unit boundary.

10. A lease tract map outlining the unit to be pooled is attached hereto as **Exhibit A.2**. The working interest owners being pooled and the percent of their interests is also included as part of this Exhibit. Cimarex owns a working interest in the proposed unit and has a right to drill a well thereon.

11. There are no depth severances within the proposed Wolfcamp spacing unit.

12. **Exhibit A.3** is a sample well proposal letter sent to each of the interest owners seeking their voluntary participation in the well.

13. **Exhibit A.4** are the Authorization for Expenditure for the proposed wells. The estimated cost of the wells set forth therein are as follows:

- a. **Hayduke 34-3 Federal Com 1H:** \$10,108,340
- b. **Hayduke 34-3 Federal Com 2H:** \$9,946,340
- c. **Hayduke 34-3 Federal Com 3H:** \$9,946,340
- d. **Hayduke 34-3 Federal Com 4H:** \$9,946,340
- e. **Hayduke 34-3 Federal Com 5H:** \$9,960,340
- f. **Hayduke 34-3 Federal Com 6H:** \$9,960,340
- g. **Hayduke 34-3 Federal Com 7H:** \$9,960,340

These estimated costs of the wells are fair and reasonable, and is comparable to the costs of other wells of similar depth, length and completion method being drilled in this area of New Mexico.

14. Cimarex requests overhead and administrative rates of \$7,000/month during drilling and \$700/month while producing. 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 and consistent with the rates awarded by the Division in recent compulsory pooling orders. Cimarex requests that these rates be adjusted periodically as provided in the COPAS Accounting Procedure.

15. Cimarex requests that it be allowed to recover its costs for drilling, completing and equipping each of these wells and a 200% risk charge be assessed against non-consenting pooled working interest owners.

16. Cimarex requests that it be designated operator of the wells.

17. Cimarex requests that it be allowed a period of one (1) year between when the wells are drilled and when the first well is completed under the order.

18. The parties Cimarex is seeking to pool were notified of this hearing.

19. Cimarex requests that overriding royalty interest owners be pooled.

20. Based upon my knowledge of the land matters involved in this case, my education training and experience, it is my expert opinion that the granting of Cimarex's application in this case is in the interests of conservation and the prevention of waste.

21. The exhibits attached to my Affidavit were prepared by me or compiled from company business records.

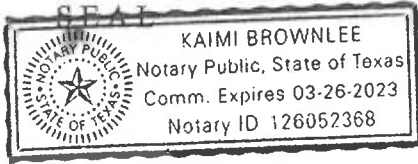
22. I attest that the information provided herein is true, correct and complete to the best of my knowledge and belief.


Caitlin Pierce

SUBSCRIBED AND SWORN to before me this 10th day of July 2019 by Caitlin Pierce.

Kaimi Brownlee
Notary Public

My commission expires: 3/26/2023



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

**APPLICATION OF CIMAREX
ENERGY CO. FOR COMPULSORY
POOLING, EDDY COUNTY,
NEW MEXICO**

CASE NO. _____

APPLICATION

Cimarex Energy Co. ("Cimarex"), OGRID Number 215099, through its undersigned attorneys, hereby makes an application to the Oil Conservation Division pursuant to the provisions of NMSA (1978), Section 70-2-17, for an order pooling all uncommitted mineral interests within a Wolfcamp horizontal spacing unit underlying the W/2 of Section 34, Township 25 South, Range 26 East, and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico. In support of this application, Cimarex states as follows:

1. Cimarex is an interest owner in the subject lands and has a right to drill wells thereon.

2. Cimarex seeks to dedicate the W/2 of Section 34, Township 25 South, Range 26 East, and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico to form a 640-acre, more or less, spacing unit.

3. Cimarex plans to drill the **Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, and 7H** wells to a depth sufficient to test the Wolfcamp formation, and laterally and in a southerly direction within the formation to the bottom hole locations referenced below:

- The **Hayduke 34-3 Federal Com 1H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 330' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 8,610'.



- The **Hayduke 34-3 Federal Com 2H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 990' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 8,830'.
- The **Hayduke 34-3 Federal Com 3H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 1650' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 8,610'.
- The **Hayduke 34-3 Federal Com 4H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 2310' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 8,830'.
- The **Hayduke 34-3 Federal Com 5H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 330' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 9,555'.
- The **Hayduke 34-3 Federal Com 6H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 1310' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 9,340'.
- The **Hayduke 34-3 Federal Com 7H** well is a horizontal well with a surface location 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, Eddy County, and the intended bottom hole location is 330' FSL and 2310' FWL of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, Eddy County. This well will be drilled vertically to a depth of approximately 9,555'.

4. These wells will be located within the Purple Sage Wolfcamp Gas Pool (Pool ID: 98220) and will comply with the Division's setback requirements in Order No. R-14262.

5. Cimarex sought, but has been unable to obtain, a voluntary agreement from all interest owners in the Wolfcamp formation underlying the proposed spacing unit to participate in the drilling of the wells or to otherwise commit their interests to the wells.

6. The creation of a horizontal spacing unit and the pooling of all interests in the Wolfcamp formation underlying the proposed unit will prevent the drilling of unnecessary wells, prevent waste and protect correlative rights.

WHEREFORE, this case is set for hearing before an Examiner of the Oil Conservation Division on July 11, 2019, Cimarex requests that, after notice and hearing as required by law, the Division enter its order:

A. Creating a horizontal spacing unit in the Wolfcamp formation comprised of W/2 of Section 34, Township 25 South, Range 26 East, and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico;

B. Pooling all mineral interests in the Wolfcamp formation underlying a horizontal spacing unit within the W/2 of Section 34, Township 25 South, Range 26 East, and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico;

C. Designating Cimarex as operator of this unit and the wells to be drilled thereon;

D. Authorizing Cimarex to recover its costs of drilling, equipping and completing these wells;

E. Approving actual operating charges and costs charged for supervision, together with a provision adjusting the rates pursuant to the COPAS accounting procedure;

F. Setting a 200% charge for the risk involved in drilling and completing the well in the event a working interest owner elects not to participate in the wells.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: _____

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500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
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Attorneys for Applicant

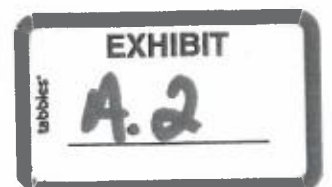
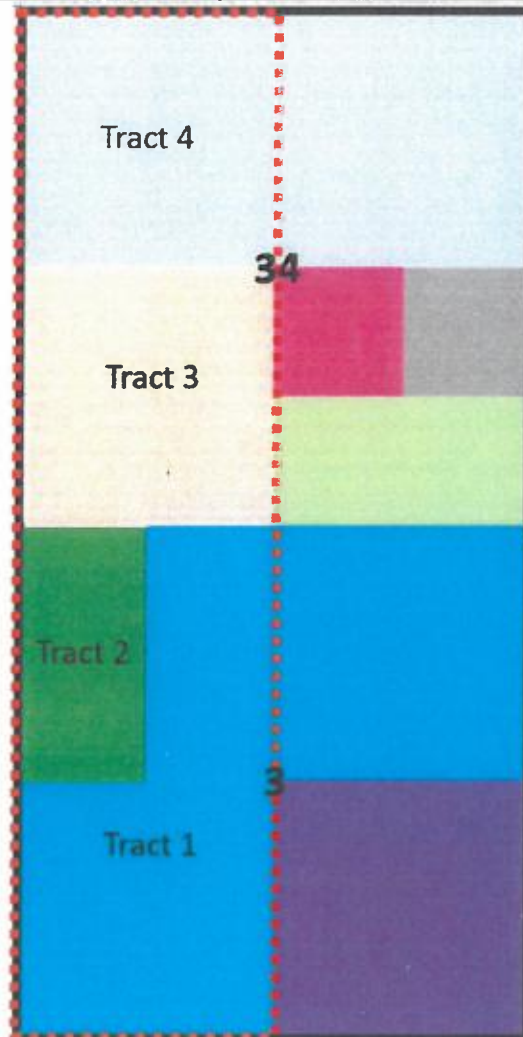
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CASE NO. ____: Application of Cimarex Energy Co. for compulsory pooling, Eddy County, New Mexico. Applicant seeks an order from the Division: (1) to the extent necessary, approving the creation of a 640-acre, more or less, Wolfcamp horizontal spacing unit; and, (2) pooling all uncommitted mineral interests within a Wolfcamp horizontal spacing unit underlying the W/2 of Section 34, Township 25 South, Range 26 East, and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico. This spacing unit will be dedicated to the **Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, and 7H** wells, to be horizontally drilled. The producing area for these wells will be orthodox. Also to be considered will be the cost of drilling and completing said wells, the allocation of these costs as well as the actual operating costs and charges for supervision, designation of Cimarex as operator of the wells, and a 200% charge for risk involved in drilling said wells. Said area is located approximately 8.5 miles southeast of Whites City, New Mexico.

Hayduke 34-3 – Wolfcamp Wells

W/2 of Section 34, Township 25S, Range 26 East, Eddy County, NM
W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM

Owner – Wolfcamp	Tract	Net	Working Interest Percentage	Force Pool Interest
Cimarex Energy Co.	1,4	335	52.34375%	No – Operator
EOG	2,3,4	259	40.468750%	Yes
Oxy Y-1	2	16	2.500000%	Yes
Partnership Properties Company	3	30	4.6875%	Yes
TOTAL			100%	





April 24, 2019

Partnership Properties Company
c/o Petro-Lewis Co
P.O. Box 20352
Billings, MT 59104

**Re: Proposal to Drill
Hayduke 34-3 Federal Com Wells
Section 34, Township 25 South, Range 26 East
Section 3, Township 26 South, Range 26 East
Eddy County, New Mexico**

Dear Working Interest Owner,

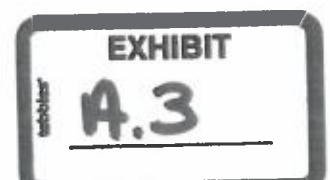
Cimarex Energy Co. hereby proposes to drill the Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, 7H, 8H, 9H, 10H & 11H wells at a legal location in Section 34, Township 25 South, Range 26 East, NMPM, Eddy Co., New Mexico.

Hayduke 34-3 Federal Com 1H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 330' FSL and 330' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 8,610' to the Wolfcamp formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 2H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 330' FSL and 990' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 8,830' to the Wolfcamp formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 3H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 330' FSL and 1650' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 8,610' to the Wolfcamp formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 4H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 330' FSL and 2310' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 8,830' to the Wolfcamp formation and laterally in a southerly direction within the formation to the referenced bottom hole location.



Hayduke 34-3 Federal Com 5H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 330' FSL and 330' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 9,555' to the Wolfcamp formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 6H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 330' FSL and 1310' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 9,340' to the Wolfcamp formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 7H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 330' FSL and 2310' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 9,555' to the Wolfcamp formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 8H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 100' FSL and 660' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 7,300' to the Bone Spring formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 9H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 100' FSL and 1980' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 7,300' to the Bone Spring formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 10H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 100' FSL and 660' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 7,680' to the Harkey formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

Hayduke 34-3 Federal Com 11H - The intended surface hole location for the well is approximately 390' FNL and 1310' FWL of Section 34, Township 25 South, Range 26 East, and the intended bottom hole location is approximately 100' FSL and 1980' FWL of Section 3, Township 26 South, Range 26 East. The well is proposed to be drilled vertically to a depth of approximately 7,680' to the Harkey formation and laterally in a southerly direction within the formation to the referenced bottom hole location.

It should be understood that compliance with topography or cultural or environmental concerns, among others, might require modification of Cimarex's intended procedure. Cimarex will advise you of any such modifications.

Enclosed, in duplicate, is (i) our detailed AFE reflecting estimated costs associated with this proposal, and; (ii) our proposed form of Operating Agreement to govern operations of the Hayduke 34-3 Fed Com 1H well. If you intend to participate, please approve and return one (1) original of the enclosed AFE, one (1) original of the signature page to the Operating Agreement, along with the contact information to receive your well data, to the undersigned within thirty (30) days of receipt of this proposal. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance to Cimarex prior to commencement of drilling operations; otherwise, you will be covered by insurance procured by Cimarex and will be responsible for your share of the cost.

In the event you would prefer to lease your interest in lieu of participating in the proposed operation(s), we would be happy to make you a competitive offer to lease.

Please call the undersigned with any questions or comments.

Respectfully,

A handwritten signature in cursive script that reads "Caitlin Pierce". The signature is written in black ink and is positioned above the printed name and phone number.

Caitlin Pierce
432.571.7862

**ELECTION TO PARTICIPATE
Hayduke 34-3 Federal Com 1H**

_____ Partnership Properties Company elects **TO** participate in the proposed Hayduke 34-3 Federal Com 1H

_____ Partnership Properties Company elects **NOT** to participate in the proposed Hayduke 34-3 Federal Com 1H

Dated this _____ day of _____, 2019.

Signature: _____

Title: _____

If your election above is TO participate in the proposed Hayduke 34-3 Federal Com 1H well, then:

_____ Partnership Properties Company elects **TO** be covered by well control insurance procured by Cimarex Energy Co.

_____ Partnership Properties Company elects **NOT** to be covered by well control insurance procured by Cimarex Energy Co. and agrees to provide Cimarex Energy Co. with a certificate of insurance prior to commencement of drilling operations or be deemed to have elected to be covered by well control insurance procured by Cimarex Energy Co.



Authorization For Expenditure Drilling

AFE # 26621001

Company Entry

Date Prepared
4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 1H	Carlsbad Bone Spring Prospect	300001-128.01	26621001
County, State	Location		Estimated Spud	Estimated Completion
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM		1/1/2021	2/1/2021
X New Supplement Revision	Formation	Well Type	Td Measured Depth	Td Vertical Depth
	Wolfcamp	DEV	18,403	8,610

Purpose Drill and complete well

Description

Drilling Drill and complete a horizontal test. Drill to 450', set water string casing. Drill to 1876', set surface casing. Drill to 8133' (KOP). Drill curve at 12°/100' initial build rate to +/- 90 degrees 8610' TVD and drill a +/- 9420' long lateral in the Wolfcamp formation. Run and cement production casing. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,262,000		\$2,262,000
Completion Costs		\$6,338,340	\$6,338,340
Total Intangible Cost	\$2,262,000	\$6,338,340	\$8,600,340
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$84,000	\$794,000	\$878,000
Lease Equipment		\$630,000	\$630,000
Total Tangible Cost	\$84,000	\$1,424,000	\$1,508,000
Total Well Cost	\$2,346,000	\$7,762,340	\$10,108,340

Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Marketing Election

Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

Nonoperator Approval

Company	Approved By (Print Name)	Approved By (Signature)	Date

NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

4/23/2019

EXHIBIT

A.4



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
TH

AFE # 26621001

Description	BCP - Drilling		ACP - Drilling		Comp/Stn		Production Equip		Post Completion		Total	Cost
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount		
Roads & Location	DICC100	140,000			STBA100	10,000	CON100	8,500	PCOM100	28,000	186,500	
Damages	DICC105	8,000					CON105	1,000			7,000	
Mud/Fluids Disposal	DICC255	160,000			STBA255	62,000			PCOM255	90,000	312,000	
Dray Rate	DICC115	442,000	DICC120	104,000							546,000	
Misc Preparation	DICC120	35,000									35,000	
Yield	DICC125	55,000	DICC125	0	STBA125	0			PCOM125	0	55,000	
Fuel	DICC135	82,000	DICC138	0					PCOM130	0	82,000	
Water for Drilling Rig (Not For Water)	DICC140	5,000	DICC135	0	STBA135	24,000			PCOM135	0	29,000	
Job & Address	DICC145	200,000									200,000	
Surface Rental	DICC150	104,000	DICC140	0	STBA140	189,000	CON140	2,000	PCOM140	30,900	325,900	
Downhole Barrels	DICC155	97,000			STBA145	0			PCOM145	0	97,000	
Howback Labor					STBA141	0			PCOM141	13,440	13,440	
Automation Labor							CON150	37,500	PCOM150	0	37,500	
Formation Evaluation (DST, Coring, etc.)	DICC160	0			STBA150	0					0	
Well Logging	DICC170	19,000									19,000	
Open Hole Logging	DICC180	0									0	
Commingled & Flow Equipment	DICC185	65,000	DICC155	160,000	STBA180	4,000			PCOM180	0	225,000	
Tubular Inspections	DICC190	38,000	DICC160	5,000	STBA185	0			PCOM185	0	27,000	
Coring Over	DICC195	10,000	DICC165	20,000	STBA190	0					30,000	
Mechanical Labor	DICC200	20,000	DICC170	10,000	STBA170	0	CON170	154,000	PCOM175	0	184,000	
Trucking/Transportation	DICC205	18,000	DICC175	8,000	STBA175	4,000	CON175	19,000	PCOM175	0	49,000	
Supervision	DICC210	88,000	DICC180	16,000	STBA180	74,000	CON180	12,000	PCOM180	0	190,000	
Trailer House/Catering/Catering	DICC220	39,000	DICC235	6,000	STBA200	28,000					73,000	
Other Misc Expenses	DICC230	5,000	DICC190	0	STBA190	115,000	CON190	10,000	PCOM190	0	130,000	
Overhead	DICC235	10,000	DICC195	5,000							15,000	
Essential Catering	DICC240	0			STBA215	0			PCOM215	0	0	
MOB/DEMO	DICC240	150,000									150,000	
Directional Drilling Services	DICC245	225,000									225,000	
Jobs Control	DICC260	72,000									72,000	
Well Control Equip (Snubbing Services)	DICC265	72,000	DICC240	5,000	STBA240	81,000			PCOM240	0	158,000	
Fishing & Salvage Services	DICC270	0	DICC245	0	STBA245	0			PCOM245	0	0	
Completion Rig					STBA115	21,000			PCOM115	0	21,000	
Cut Tubing Services					STBA260	368,000			PCOM260	0	368,000	
Completion Logging/Perforating/Wireline					STBA200	400,000			PCOM280	0	400,000	
Completion Plug					STBA290	96,000			PCOM280	0	96,000	
Stimulation Pumping/Chemicals/Addresses/Seed					STBA210	2,926,000			PCOM210	0	2,926,000	
Stimulation Water/Water Transfer/Water Storage					STBA285	702,000					702,000	
Chemical Owned Tru/Asset/Equipment					STBA305	40,000			PCOM305	0	40,000	
Logistics/Regulatory/Compliance	DICC300	10,000					CON300	0			10,000	
Well Control Insurance	DICC305	7,000									7,000	
Well Construction Overhead							CON305	21,500			21,500	
Real Time Operations Center	DICC360	0			STBA360	0					0	
PLUG - Labor							CON360	54,500			54,500	
PLUG - Supervision							CON365	3,300			3,300	
Survey							CON375	0			0	
SWD/Other - Labor							CON380	0			0	
SWD/OTHER - SUPERVISION							CON385	0			0	
Contingency	DICC405	108,000	DICC320	17,000	STBA320	257,000	CON380	87,500	PCOM380	0	462,500	
Contingency							CON321	8,000			8,000	
PMA Costs	DICC385	0	DICC375	0							0	
Total Intangible Cost		2,242,000		258,000		5,493,000		419,000		162,340	8,600,340	
Drive Pipe	DWMB100	0									0	
Conductor Pipe	DWMB100	0									0	
Water String	DWMB135	16,000									16,000	
Surface Casing	DWMB140	48,000									48,000	
Intermediate Casing 1	DWMB145	0									0	
Intermediate Casing 2	DWMB155	0									0	
Drilling Line	DWMB160	0									0	
Production Casing or Liner			DWMB160	489,000							489,000	
Production Tie-Back			DWMB165	0	STMT101	0					0	
Tubing					STMT105	53,000			PCOM105	0	53,000	
Wellhead, Tree, Chokes	DWMB115	20,000	DWMB120	25,000	STMT120	60,000			PCOM120	0	105,000	
Liner Hanger, Isolation Packer	DWMB100	0	DWMB125	0							0	
Packer, Nipples					STMT120	28,000			PCOM120	0	28,000	
Pumping Unit, Engine					STMT125	0			PCOM125	0	0	
Downhole LRI Equipment					STMT130	80,000			PCOM130	0	80,000	
Surface Equipment									PCOM130	59,000	59,000	
Well Automation Materials									PCOM135	0	0	
Total Tangible - Well Equipment Cost		84,000		514,000		221,000				59,000	878,000	
N/C Lease Equipment							CON140	183,000			183,000	
Tanks, Tanks Steps, Sinks							CON145	64,000			64,000	
Barrel Equipment							CON148	178,000			178,000	
Secondary Construction							CON155	34,000			34,000	
Overhead Power Distribution							CON160	31,500			31,500	
Facility Electrical							CON165	36,500			36,500	
Telecommunication Equipment							CON168	0			0	
Meters and Measuring Equipment							CON165	20,000			20,000	
Facility Line Pipe							CON165	30,000			30,000	
Lease Automation Materials							CON165	43,000			43,000	
PLUG - Materials							CON165	7,500			7,500	
PLUG - Line Pipe							CON165	11,500			11,500	
SWD/Other - Materials							CON165	0			0	
SWD/OTHER - LINE PIPE							CON165	0			0	
Total Tangible - Lease Equipment Cost								630,000			630,000	
Total Estimated Cost		2,346,000		878,000		5,622,000		1,049,000		221,340	38,108,340	



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
1H

AFE # 26621001

		BCP - Drilling		ACP - Drilling		Comp/Stm	
Description	Codes	Amount	Codes	Amount	Codes	Amount	
Roads & Location	DICC100	140,000			STBA100	10,000	
Damages	DICC105	6,000					
Mud/Fill/Disposal	DICC255	160,000			STBA255	62,000	
Day Rate	DICC115 16 days at \$26,000/day	416,000	DICC120 4 days at \$26,000/day	104,000			
Misc Preparation	DICC120	35,000					
Bits	DICC125	55,000	DICC125	0	STBA125		
Ford	DICC135 1,800 gal/day at \$3.00/gal	5,400	DICC130	0			
Water for Drilling Rig (Dist. Frac. Water)	DICC140	5,000	DICC135	0	STBA135	24,000	
Mud & Additives	DICC145	200,000					
Surface Rentals	DICC150 Per Day (DCC)/day	104,000	DICC140	0	STBA140	183,000	
Downhole Rentals	DICC155	97,000			STBA145		
Flowback Labor					STBA141		
Automation Labor							
Formation Evaluation (DST, Coring, etc.)	DICC160	0			STBA150		
Mud Logging	DICC170 12 days at \$1,500/day	18,000					
Open Hole Logging	DICC180	0					
Conveying & Fluid Equipment	DICC185	65,000	DICC185	160,000			
Tubular Inspections	DICC190	18,000	DICC190	5,000	STBA190	4,000	
Casing Crows	DICC195	10,000	DICC195	20,000	STBA195		
Mechanical Labor	DICC200	20,000	DICC170	10,000	STBA170		
Tracking/Transportation	DICC205	18,000	DICC175	8,000	STBA175	4,000	
Supervision	DICC210	80,000	DICC180	16,000	STBA180	74,000	
Traffic House/Camp/Catering	DICC280	38,000	DICC255	6,000	STBA280	28,000	
Other Misc. Expenses	DICC220	5,000	DICC190	0	STBA190	115,000	
Overhead	DICC225	10,000	DICC195	5,000			
Unrecorded Conveying	DICC231	0			STBA215		
MUD/ROM/DR	DICC240	150,000					
Directional Drilling Services	DICC245	225,000					
Solids Control	DICC260	72,000					
Well Control Equip. (Snubbing Services)	DICC265	72,000	DICC240	5,000	STBA240	81,000	
Flaring & Shocks Services	DICC270	0	DICC245	0	STBA245		
Completion Rig					STBA115	21,000	
Co. Tubing Services					STBA260	268,000	
Completion Logging/Perforating/Wellbore					STBA200	400,000	
Composite Plugs					STBA380	96,000	
Stimulation					STBA210	2,926,000	
Stimulation Water/Water Transfer/Water					STBA395	702,000	
Owner Owned Frac/Control Equipment					STBA395	40,000	
Leads/Regulatory/Control	DICC300	10,000					
Well Control Insurance	DICC385 \$0.35/R	7,000					
Major Construction Overhead							
Real Time Operations Center	DICC350	0			STBA560		
FUGL - Labor							
FUGL - Supervision							
Survey							
SWD/Other - Labor							
SWD/OTHER - SUPERVISION							
Contingency	DICC431 500 % of Drilling Intangibles	106,000	DICC220	17,000	STBA220	257,000	
Contingency	DICC255	0	DICC275	0			
PEBA Costs							
Total Intangible Cost		2,262,000		356,000		5,401,000	
Drilling Pipe	DWEL150	0					
Condenser Pipe	DWEL130	0					
Water Sizing	DWEL135	16,000					
Surface Casing	DWEL140 9 5/8" - 1,800ft at \$25.00/ft	45,000					
Intermediate Casing 1	DWEL145	0					
Intermediate Casing 2	DWEL155	0					
Drilling Liner	DWEL160	0					
Production Casing or Liner			DWEL100 5 1/2" - 11,596ft at \$25.00/ft	489,000			
Production Tie-Back			DWEL165	0	STMT101	0	
Yabing					STMT105 2 7/8" - 7,520ft at \$7.00/ft	53,000	
Wellhead, Tree, Chokes	DWEL115	20,000	DWEL120	25,000	STMT130	60,000	
Liner Hanger, Isolation Packer	DWEL300	0	DWEL125	0			
Pistons, Nipples					STMT400	28,000	
Pumping Unit, Engine					STMT405	0	
Downhole Lift Equipment					STMT410	80,000	
Surface Equipment							
Well Automation Materials							
Total Drilling - Well Equipment Cost		84,000		514,000		221,000	
N/C Lease Equipment							
Tanks, Trucks, Sumps, Stairs							
Battery Equipment							
Secondary Containment							
Overhead Power Distribution							
Facility Electrical							
Telecommunication Equipment							
Meters and Metering Equipment							
Facility Line Pipe							
Lease Automation Materials							
FLUGL - Materials							
FLUGL - Line Pipe							
SWD/Other - Materials							
SWD/OTHER - LINE PIPE							
Total Drilling - Lease Equipment Cost							
Total Estimated Cost		2,346,000		870,000		5,622,000	



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM

AFE # 26621001

1H

Production Equip			Post Completion			Total	
Description	Codes	Amount	Codes	Amount	Cost		
Roads & Location	CONA100	8,500	PCOM1100	Post/Road Clean Up	28,000	186,500	
Damages	CONA105	1,000				7,000	
Mud/Fields Disposal			PCOM1235	6,000 BWPO for 60 days @ \$2.25/bbl	90,000	312,000	
Dry Rate						546,000	
Misc Preparation						35,000	
Shs			PCOM1125		0	55,000	
Fuel			PCOM1130		0	82,000	
Water for Drilling Rig (Not Free Water)			PCOM1135		0	29,000	
Mud & Additives						200,000	
Surface Rentals	CONA140	2,800	PCOM1340	\$1,050/Hr for Production Target of 30 Days	30,900	325,800	
Downhole Rentals			PCOM1415		0	97,000	
Flowback Labor			PCOM1441	\$962/Hr for Production Target of 34 Day	13,440	13,440	
Automation Labor	CONA150	37,500	PCOM1130		0	37,500	
Formation Evaluation (CST, Coating, etc.)						0	
Mud Logging						19,000	
Open Hole Logging						0	
Cementing & Flow Equipment						225,000	
Tubular Inspections			PCOM1160		0	27,000	
Coring Crews						30,000	
Mechanical Labor	CONA170	154,000	PCOM1170		0	184,000	
Trucking/Transportation	CONA175	19,000	PCOM1175		0	49,000	
Inspection	CONA180	12,000	PCOM1180		0	190,000	
Traffic House/Comp/Controling						73,000	
Other Misc Expenses	CONA190	10,000	PCOM1190		0	130,000	
Overhead						15,000	
Nonmetal Cementing			PCOM1215		0	0	
MUD/CEMENT						150,000	
Directional Drilling Services						225,000	
Solids Control						72,000	
Well Control Equip (Grubbing Services)			PCOM1340		0	158,000	
Fishing & Sidetrack Services			PCOM1345		0	0	
Completion Rig			PCOM1175		0	21,000	
Cold Tubing Services			PCOM1380		0	368,000	
Completion Logging/Performance/Minnow			PCOM1200		0	400,000	
Composite Plugs			PCOM1380		0	96,000	
Stimulation Pumping/Chemicals/Additives/Sand			PCOM1210		0	2,826,000	
Stimulation Water/Water Transfer/Water						702,000	
Cement Owned Frac/Rental Equipment			PCOM1305		0	40,000	
Logistics/Regulatory/Compliance	CONA300	0				10,000	
Well Control Insurance						7,000	
Major Construction Overhead	CONA305	21,500				21,500	
Real Time Operations Center						0	
FLU/L - Labor	CONA300	54,500				54,500	
FLU/L - Supervision	CONA305	3,500				3,500	
Survey	CONA315	0				0	
FLU/L/Other - Labor	CONA300	0				0	
SAND/OTHER - SUPERVISION	CONA305	0				0	
Contingency	CONA320	87,500	PCOM1220		0	489,500	
Contingency	CONA321	8,000				8,000	
FLU Costs						0	
Total Intangible Cost		479,000			382,940	3,600,340	
Drive Pipe						0	
Conductor Pipe						0	
Water Sling						16,000	
Surface Casing						48,000	
Intermediate Casing 1						0	
Intermediate Casing 2						0	
Casing Liner						0	
Production Casing or Liner						489,000	
Production Tie-back						0	
Tubing			PCOM1105		0	53,000	
Wellhead, Tree, Chokes			PCOM1120		0	105,000	
Liner Hangers, Isolation Packer						0	
Packer, Plug			PCOM1400		0	28,000	
Pumping Units, Engines			PCOM1405		0	0	
Downhole Lift Equipment			PCOM1410		0	80,000	
Surface Equipment			PCOM1420	REC Owned Sand Separator	39,000	59,000	
Well Automation Materials			PCOM1435		0	0	
Total Tangible - Well Equipment Cost					39,000	878,000	
MVC Lease Equipment	CONA400	183,000				183,000	
Tanks, Tanks Skids, Skids	CONA405	64,000				64,000	
Battery Equipment	CONA410	179,000				179,000	
Secondary Containment	CONA415	24,000				24,000	
Overhead Power Distribution	CONA420	31,500				31,500	
Facility Electrical	CONA425	36,500				36,500	
Telecommunication Equipment	CONA430	0				0	
Meters and Metering Equipment	CONA435	20,000				20,000	
Facility Use Pipe	CONA440	30,000				30,000	
Lease Automation Materials	CONA435	43,000				43,000	
FLU/L - Materials	CONA350	7,500				7,500	
FLU/L - Line Pipe	CONA355	11,500				11,500	
FLU/L/Other - Materials	CONA360	0				0	
FLU/L/Other - LINE PIPE	CONA365	0				0	
Total Tangible - Lease Equipment Cost		630,000				630,000	
Total Estimated Cost		1,049,000			221,940	1,048,940	



Authorization For Expenditure Drilling

AFE # 26621002

Company Entry

Date Prepared

4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 2H	Carlsbad Bone Spring Prospect	300001-129.01	26621002
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
<input checked="" type="checkbox"/> New Supplement Revision	Formation	Well Type	Td Measured Depth	Td Vertical Depth
	Wolfcamp Upper	DEV	19,000	8,700

Purpose Drill and complete well

Description

Drilling Drill and complete a horizontal test. Drill to 450', set water string casing. Drill to 1876', set surface casing. Drill to 8133' (KOP). Drill curve at 12°/100' initial build rate to +/- 90 degrees 8610' TVD and drill a +/- 9420' long lateral in the Wolfcamp formation. Run and cement production casing. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,108,000		\$2,108,000
Completion Costs		\$6,338,340	\$6,338,340
Total Intangible Cost	\$2,108,000	\$6,338,340	\$8,446,340
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$83,000	\$787,000	\$870,000
Lease Equipment		\$630,000	\$630,000
Total Tangible Cost	\$83,000	\$1,417,000	\$1,500,000
Total Well Cost	\$2,191,000	\$7,755,340	\$9,946,340

Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Marketing Election

Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

Nonoperator Approval			
Company	Approved By (Print Name)	Approved By (Signature)	Date

NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

4/23/2019



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
2H

AFE # 26621002

Description	BCP - Drilling		ACP - Drilling		Comp/Stm		Production Equip		Post Completion		Total	Cost
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount		
Reeds & Location	DIOC100	70,000			STMA100	10,000	CON100	8,500	PCOM100	28,000		116,500
Damages	DIOC105	6,000					CON105	1,000				7,000
Mud/Fluids Disposal	DIOC253	160,000			STMA253	62,000			PCOM253	90,000		312,000
Dry Rate	DIOC115	442,000	DIOC120	104,000								546,000
Mud Preparation	DIOC120	35,000										35,000
Bit	DIOC125	55,000	DIOC125	0	STMA125	0			PCOM125	0		55,000
Fuel	DIOC133	82,000	DIOC130	0					PCOM130	0		82,000
Water for Drilling Rig (Not For Water)	DIOC140	5,000	DIOC135	0	STMA135	24,000			PCOM135	0		29,000
Mud & Additives	DIOC145	200,000										200,000
Surface Rentals	DIOC150	104,000	DIOC140	0	STMA140	183,000	CON140	2,000	PCOM140	30,900		325,900
Downhole Rentals	DIOC155	97,000			STMA145	0			PCOM145	0		97,000
Flowback Labor					STMA141	0			PCOM141	13,440		13,440
Automation Labor							CON150	37,500	PCOM150	0		37,500
Formation Evaluation (DST, Coring, etc)	DIOC160	0			STMA150	0						0
Mud Logging	DIOC170	19,000										19,000
Open Hole Logging	DIOC180	0										0
Commingling & Plant Equipment	DIOC185	65,000	DIOC135	160,000	STMA160	4,000			PCOM160	0		225,000
Tubular Inspection	DIOC190	18,000	DIOC165	5,000	STMA165	0						23,000
Casing Curve	DIOC200	10,000	DIOC170	20,000	STMA170	0						30,000
Mechanical Labor	DIOC205	20,000	DIOC175	10,000	STMA175	0	CON170	154,000	PCOM170	0		184,000
Drilling/Transportation	DIOC205	18,000	DIOC175	8,000	STMA175	4,000	CON175	25,000	PCOM175	0		49,000
Suspension	DIOC210	88,000	DIOC180	16,000	STMA180	74,000	CON180	12,000	PCOM180	0		190,000
Trailer House/Comp/Outrigger	DIOC220	38,000	DIOC225	6,000	STMA220	28,000						72,000
Other Misc. Expenses	DIOC225	5,000	DIOC190	0	STMA190	115,000	CON190	10,000	PCOM190	0		130,000
Overhead	DIOC225	10,000	DIOC195	5,000								15,000
Remedial Commingling	DIOC231	0			STMA215	0			PCOM215	0		0
ADOL/DOL/OL	DIOC240	75,000										75,000
Directional Drilling Services	DIOC245	225,000										225,000
Solids Control	DIOC260	72,000										72,000
Well Control Equip. Graveling Services	DIOC265	72,000	DIOC240	5,000	STMA240	81,000			PCOM240	0		158,000
Fishing & Sidekick Services	DIOC270	0	DIOC245	0	STMA245	0			PCOM245	0		0
Completion Rig					STMA115	21,000			PCOM115	0		21,000
Coil Tubing Services					STMA280	368,000			PCOM280	0		368,000
Completion Logging/Perforating/Wireline					STMA200	400,000			PCOM200	0		400,000
Composite Plugs					STMA390	96,000			PCOM390	0		96,000
Stimulation Pumping/Chemicals/Additives/Seal					STMA210	2,926,000			PCOM210	0		2,926,000
Stimulation Water/Water Transfer/Water Storage					STMA335	702,000						702,000
Climax Overhead Frac/Rental Equipment					STMA305	40,000			PCOM305	0		40,000
Legal/Regulatory/Consent	DIOC300	10,000					CON300	0				10,000
Well Control Insurance	DIOC325	6,000										6,000
Major Construction Overhead							CON305	21,500				21,500
Real Time Operations Center	DIOC360	0			STMA380	0						0
PLUG - Labor							CON300	54,500				54,500
PLUG - Supervision							CON305	3,500				3,500
Survey							CON315	0				0
DWD/Other - Labor							CON320	0				0
DWD/OTHER - SUPERVISION							CON325	0				0
Contingency	DIOC435	100,000	DIOC220	17,000	STMA220	257,000	CON320	87,500	PCOM320	0		461,500
Contingency							CON321	8,000				8,000
P&A Costs	DIOC385	0	DIOC375	0								0
Total Intangible Cost		2,104,000		356,000		5,409,000		489,000		102,340		8,446,340
Drive Pipe	DWEA150	0										0
Conductor Pipe	DWEA130	0										0
Water Sealing	DWEA135	16,000										16,000
Sealant Casing	DWEA140	47,000										47,000
Intermediate Casing 1	DWEA155	0										0
Intermediate Casing 2	DWEA160	0										0
Drilling Liner	DWEA165	0										0
Production Casing or Liner			DWEA180	484,000								484,000
Production Tie-back			DWEA185	0	STMA185	0						0
Tubing					STMA185	51,000			PCOM185	0		51,000
Wellhead, Tree, Chokes	DWEA115	20,000	DWEA130	25,000	STMA130	60,000			PCOM130	0		105,000
Liner Hanger, Isolation Packer	DWEA160	0	DWEA125	0								0
Packer, Nipples					STMA160	28,000			PCOM160	0		28,000
Pumping Unit, Engine					STMA165	0			PCOM165	0		0
Downhole LR Equipment					STMA170	80,000			PCOM170	0		80,000
Surface Equipment									PCOM170	59,000		59,000
WOC Automation Materials									PCOM175	0		0
Total Tangible - Well Equipment Cost		63,000		329,000		289,000				59,000		670,000
N/C Lease Equipment							CON180	163,000				163,000
Tanks, Tanks Steps, Stairs							CON185	64,000				64,000
Battery Equipment							CON190	179,000				179,000
Secondary Containments							CON195	24,000				24,000
Overhead Power Distribution							CON200	31,500				31,500
Facility Electrical							CON205	36,500				36,500
Telecommunication Equipment							CON210	0				0
Meters and Metering Equipment							CON215	20,000				20,000
Facility Line Pipe							CON220	30,000				30,000
Lease Automation Materials							CON225	43,000				43,000
PLUG - Miscels							CON230	7,500				7,500
PLUG - Line Pipe							CON235	11,500				11,500
DWD/Other - Materials							CON240	0				0
DWD/OTHER - LINE PIPE							CON245	0				0
Total Tangible - Lease Equipment Cost								630,000				630,000
Total Estimated Cost		2,191,000		865,000		5,698,000		1,649,000		221,340		9,446,340



	BCP - Drilling		ACP - Drilling		Amount	Codes	Amount	Codes	Amount
Reads to Location	DIOC100	70,000					STMA380		10,000
Damages	DIOC105	6,000							
Abnd/Fields/Disposal	DIOC255	180,000					STMA255		62,000
Day Rate	DIOC115	16 days at \$26,000/day	442,000	DIOC120	4 days at \$26,000/day	104,000			
Misc Preparation	DIOC120	35,000							
Bit	DIOC125	55,000	DIOC125		0	STMA125		0	
Fuel	DIOC135	1,300 gal/day at \$3.00/gal	82,000	DIOC130		0			
Water for Drilling Rig (Not Fac Water)	DIOC140	5,000	DIOC135		0	STMA135		24,000	
Mud & Additives	DIOC145	200,000							
Surface Rentals	DIOC150	104,000	DIOC140		0	STMA140		185,000	
Downhole Rentals	DIOC155	97,000				STMA155		0	
Flowback Labor						STMA161		0	
Automation Labor								0	
Formation Evaluation (DST, Coring, etc)	DIOC160	0				STMA190		0	
Mud Logging	DIOC170	12 days at \$1,200/day	19,000						
Open Hole Logging	DIOC180	0							
Commuting & Fleet Equipment	DIOC185	63,000	DIOC185		160,000				
Pulverizer Inspections	DIOC190	18,000	DIOC190		5,800	STMA300		4,800	
Coring Cases	DIOC205	10,000	DIOC205		20,000	STMA305		0	
Mechanical Labor	DIOC210	20,000	DIOC210		10,000	STMA370		0	
Drilling/Transportation	DIOC215	18,000	DIOC215		8,800	STMA375		4,800	
Supervision	DIOC220	88,000	DIOC220		16,000	STMA380		74,800	
Traffic House/Comp/Kitting	DIOC230	35,000	DIOC235		6,000	STMA385		28,000	
Other Misc Expenses	DIOC235	10,000	DIOC235		0	STMA390		115,000	
Overhead	DIOC240	75,000			5,000				
Remedial Corrosion	DIOC245	225,000			0	STMA215		0	
MUD/DRILLING	DIOC250	72,000							
Disposal Drilling Services	DIOC255	72,000	DIOC260						
Solids Control	DIOC260	0	DIOC265						
Well Control Equip (Casinghead Services)	DIOC265	0	DIOC270						
Fishing & Sidekick Services	DIOC270	0							
Completion Rig									
Coil Tubing Services									
Completion Logging/Performance/Integrity									
Compressive Plug									
Stimulation									
Simulation Water/Water Transfer/Water									
Chemical Drilling (Acid/Alkaline) Equipment									
Logistics/Logistics/Overhead	DIOC300	10,000							
Well Control Insurance	DIOC305	80,350							
Major Construction Overhead									
Real Time Operations Center	DIOC350	0				STMA360		0	
FLUGL - Labor									
FLUGL - Supervision									
Survey									
SWH/Other - Labor									
SWH/OTHER - SUPERVISION									
Contingency	DIOC405	500 % of Drilling Intelligibles	100,000	DIOC420	77,000	STMA320		257,000	
Contingency									
RBA Costs	DIOC435	0	DIOC475		0				
Total Intelligible Cost		2,308,000			356,000			5,400,000	
Drill Pipe	DWEL120	0							
Conductor Pipe	DWEL130	0							
Jointer String	DWEL135	16,000							
Surface Casing	DWEL140	9.54" - 1,370ft at \$25.00/ft	47,000						
Intermediate Casing 1	DWEL145	0							
Intermediate Casing 2	DWEL155	0							
Drilling Unit	DWEL160	0							
Production Casing or Liner			DWEL120	5.12" - 10,430ft at \$25.00/ft	484,000				
Production Tie-Back			DWEL145		0	STMA130		0	
Tubing									
Wellhead, Tree, Chokes	DWEL115	20,000	DWEL120		25,000	STMA120		51,000	
Liner Hanger, Isolation Packer	DWEL100	0	DWEL125		0			60,000	
Packer, Nipples									
Pumping Unit, Engines						STMA160		28,000	
Downhole MUD Equipment						STMA165		0	
Surface Equipment						STMA110		80,000	
Well Annunciation Alarms									
Total Tieback - Well Equipment Cost		81,000			300,000			258,000	
MVC Lateral Equipment									
Tools, Tools Staps, Sails									
Battery Equipment									
Secondary Containment									
Overhead Power Distribution									
Utility Electrical									
Telecommunication Equipment									
Action and Monitoring Equipment									
Facility Line Pipe									
Liner Annunciation Masterlab									
FLUGL - Material									
FLUGL - Line Pipe									
SWH/Other - Materials									
SWH/OTHER - LINE PIPE									
Total Tieback - Lateral Equipment Cost									
Total Estimated Cost		2,391,000			853,000			5,658,000	



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
2H

AFE # 26621002

Description	Codes	Production Equip	Amount	Codes	Post Completion	Amount	Total	
							Cost	
Roads & Location	CONL100		8,500	PCOML100	Post/Road Clean Up	28,000	116,500	
Damages	CONL105		1,000				7,000	
Mud/Water Disposal				PCOML255	8,000 BWPD for 60 days @ \$0.25/Mbl	90,000	312,000	
Day Rate							546,000	
Mud Preparation							35,000	
Shits				PCOML125		0	55,000	
Fuel				PCOML130		0	82,000	
Water for Drilling Rig (Not For Water)				PCOML135		0	29,000	
Mud & Additives							200,000	
Surface Rentals	CONL140	2,000	PCOML140	\$1,032/M for Production Target of 30 Days	30,900	325,900		
Downhole Rentals				PCOML145		0	97,000	
Flowback Labor				PCOML141	\$390/M for Production Target of 14 Day	13,440	13,440	
Automation Labor	CONL150	37,500	PCOML150		0	37,500		
Formation Evaluation (DST, Coring, etc.)							0	
Mud Logging							19,000	
Open Hole Logging							0	
Cementing & Plugs Equipment							225,000	
Tubular Inspections				PCOML160		0	27,000	
Casing Crews							30,000	
Mechanical Labor	CONL170	154,000	PCOML170		0	184,000		
Trucking/Transportation	CONL175	19,000	PCOML175		0	49,000		
Supervision	CONL180	12,000	PCOML180		0	190,000		
Tyler House/Camp/Catering							73,000	
Other Misc Expenses	CONL190	10,000	PCOML190		0	130,000		
Overhead							15,000	
Removal Cementing				PCOML215		0	0	
MCM/MD/JOB							75,000	
Directional Drilling Services							225,000	
Scale Control							72,000	
Well Control Equip (Snubbing Services)				PCOML240		0	150,000	
Fishing & Sidekick Services				PCOML245		0	0	
Circulation Rig				PCOML115		0	21,000	
Coil Tubing Services				PCOML280		0	358,000	
Completion Logging/Perforating/Monitor				PCOML280		0	400,000	
Composites Plugs				PCOML290		0	96,000	
Stimulation Pumping/Chemicals/Additives/Sand				PCOML210		0	2,926,000	
Stimulation Water/Water Transfer/Water							702,000	
Chemical Overhead/Facilities/Equipment	CONL300	0	PCOML305		0	40,000		
Legal/Regulatory/Curtains							10,000	
Well Control Insurance							6,000	
Major Construction Overhead	CONL305	21,500					21,500	
Real Time Operations Center							0	
FLUG - Labor	CONL500	54,500					54,500	
FLUG - Supervision	CONL505	3,500					3,500	
Survey	CONL515	0					0	
SWD/Other - Labor	CONL600	0					0	
SWD/OTHER - SUPERVISION	CONL605	0					0	
Contingency	CONL220	87,500	PCOML220		0	461,500		
Contingency	CONL221	8,000					8,000	
P&A Costs							0	
Total Drilling Costs			419,000			162,340	5,846,340	
Drive Pipe							0	
Conductor Pipe							0	
Water String							16,000	
Surface Casing							47,000	
Intermediate Casing 1							0	
Intermediate Casing 2							0	
Drilling Unit							0	
Production Casing or Liner							484,000	
Production Tie-Back							0	
Tubing				PCOML105		0	51,000	
Wellhead, Tree, Chokes				PCOML120		0	105,000	
Liner Hanger, Isolation Packer							0	
Packer, Nipples				PCOML160		0	28,000	
Pumping Unit, Engine				PCOML165		0	0	
Downhole Lift Equipment				PCOML170		0	80,000	
Surface Equipment				PCOML180		59,000	59,000	
Well Annulation Materials				PCOML155	SEC Overhead Sand Separator	0	0	
Total Drilling - Well Equipment Costs						59,000	870,000	
M/C Lease Equipment	CONL600	183,000					183,000	
Tanks, Tank Stacks, Skids	CONL605	64,000					64,000	
Battery Equipment	CONL610	179,000					179,000	
Secondary Containment	CONL615	24,000					24,000	
Overhead Power Distribution	CONL620	31,500					31,500	
Facility Decadal	CONL625	36,500					36,500	
Telecommunication Equipment	CONL630	0					0	
Meters and Metering Equipment	CONL645	20,000					20,000	
Facility Use Pipe	CONL650	30,000					30,000	
Lease Automation Materials	CONL655	43,000					43,000	
FLUG - Materials	CONL650	7,500					7,500	
FLUG - Line Pipe	CONL655	11,500					11,500	
SWD/Other - Materials	CONL660	0					0	
SWD/OTHER - LINE PIPE	CONL665	0					0	
Well Drilling - Lease Equipment Costs			630,000				630,000	
Total Estimated Costs			1,049,000			221,340	5,846,340	



Authorization For Expenditure Drilling

AFE # 26621003

Company Entity

Date Prepared

4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 3H	Carlsbad Bone Spring Prospect	300001-130.01	26621003
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
<input checked="" type="checkbox"/> New <input type="checkbox"/> Supplement <input type="checkbox"/> Revision	Formation	Well Type	Td Measured Depth	Td Vertical Depth
	Wolfcamp Upper	DEV	19,000	8,700

Purpose Drill and complete well

Description

Drilling Drill and complete a horizontal test. Drill to 450', set water string casing. Drill to 1876', set surface casing. Drill to 8133' (KOP). Drill curve at 12°/100' initial build rate to +/- 90 degrees 8610' TWD and drill a +/- 9420' long lateral in the Wolfcamp formation. Run and cement production casing. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,108,000		\$2,108,000
Completion Costs		\$6,338,340	\$6,338,340
Total Intangible Cost	\$2,108,000	\$6,338,340	\$8,446,340
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$83,000	\$787,000	\$870,000
Lease Equipment		\$630,000	\$630,000
Total Tangible Cost	\$83,000	\$1,417,000	\$1,500,000
Total Well Cost	\$2,191,000	\$7,755,340	\$9,946,340

Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned. If available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Marketing Election

Cimarex sells its gas under term's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

Nonoperator Approval

Company	Approved By (Print Name)	Approved By (Signature)	Date

NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

4/23/2019



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
3H

AFE # 26621003

Description	BCP - Drilling		ACP - Drilling		Comp/Stim		Production Equip		Post Completion		Total	Cost
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount		
Roads & Location	DIOC100	70,000			STMA100	10,000	CONL100	8,500	PCOML100	28,000	116,500	
Damages	DIOC105	6,000					CONL105	1,000			7,000	
Mud/Fluids Disposal	DIOC235	160,000			STMA235	62,000			PCOML235	90,000	312,000	
Day Rate	DIOC115	442,000	DIOC120	104,000							546,000	
Misc Preparation	DIOC120	35,000									35,000	
Fluo	DIOC125	55,000	DIOC125	0	STMA125	0			PCOML125	0	55,000	
Fuel	DIOC135	82,000	DIOC130	0					PCOML130	0	82,000	
Water for Drilling Rig (Not Frac Water)	DIOC140	5,000	DIOC125	0	STMA135	24,000			PCOML135	0	29,000	
Mud & Additives	DIOC145	200,000									200,000	
Surface Rentals	DIOC150	104,000	DIOC140	0	STMA140	189,000	CONL140	2,000	PCOML140	30,900	325,900	
Downhole Rentals	DIOC155	97,000			STMA145	0			PCOML145	0	97,000	
Flowback Labor					STMA141	0			PCOML141	13,440	13,440	
Automation Labor							CONL150	37,500	PCOML150	0	37,500	
Formation Evaluation (DST, Coring, etc.)	DIOC160	0			STMA150	0					0	
Mud Logging	DIOC170	19,000									19,000	
Open Hole Logging	DIOC180	0									0	
Cementing & Plug Equipment	DIOC185	65,000	DIOC155	160,000	STMA160	4,000			PCOML160	0	229,000	
Tubular Inspections	DIOC190	18,000	DIOC160	5,000	STMA165	0					23,000	
Casing Crevs	DIOC195	10,000	DIOC165	20,000	STMA170	0					30,000	
Mechanical Labor	DIOC200	20,000	DIOC170	10,000	STMA175	0	CONL170	154,000	PCOML170	0	184,000	
Trucking/Transportation	DIOC205	18,000	DIOC175	8,000	STMA175	4,000	CONL175	19,000	PCOML175	0	49,000	
Supervision	DIOC210	88,000	DIOC180	16,000	STMA180	74,000	CONL180	12,000	PCOML180	0	190,000	
Trailer House/Camp/Catering	DIOC220	39,000	DIOC235	6,000	STMA280	28,000					73,000	
Other Misc Expenses	DIOC225	5,000	DIOC190	0	STMA180	115,000	CONL190	10,000	PCOML190	0	130,000	
Overhead	DIOC225	10,000	DIOC195	5,000							15,000	
Remedial Cementing	DIOC231	0			STMA215	0			PCOML215	0	0	
JOB/DI/MOB	DIOC240	75,000									75,000	
Directional Drilling Services	DIOC245	225,000									225,000	
Solids Control	DIOC260	72,000									72,000	
Well Control Equip (Gauging Services)	DIOC265	72,000		5,000	STMA240	81,000			PCOML240	0	158,000	
Fishing & Sidetrack Services	DIOC270	0	DIOC245	0	STMA245	0			PCOML245	0	0	
Completion Rig					STMA115	21,000			PCOML115	0	21,000	
Cut Tubing Services					STMA280	368,000			PCOML280	0	368,000	
Completion Logging/Perforating/Wellbore					STMA280	400,000			PCOML280	0	400,000	
Composite Plugs					STMA390	96,000			PCOML390	0	96,000	
Simulation Pumping/Chemicals/Additives/Sand					STMA210	2,926,000			PCOML210	0	2,926,000	
Simulation Water/Water Transfer/Water Storage					STMA395	702,000					702,000	
Chemicals Owned Frac/Rental Equipment					STMA395	40,000			PCOML305	0	40,000	
Legal/Regulatory/Corrosive	DIOC300	10,000					CONL300	0			10,000	
Well Control Insurance	DIOC385	6,000									6,000	
Major Construction Overhead							CONL305	21,500			21,500	
Real Time Operations Center	DIOC560	0			STMA560	0					0	
FLUGL - Labor							CONL500	54,500			54,500	
FLUGL - Supervision							CONL505	3,500			3,500	
Survey							CONL515	0			0	
SWD/OTHER - Labor							CONL600	0			0	
SWD/OTHER - SUPERVISION							CONL605	0			0	
Contingency	DIOC435	100,000	DIOC220	17,000	STMA220	257,000	CONL220	87,500	PCOML220	0	461,500	
Contingency							CONL221	8,000			8,000	
WBA Costs	DIOC295	0	DIOC275	0							0	
Total Intangible Cost		2,108,000		356,000		5,401,000		418,000		162,340	8,446,340	
Drive Pipe	DWEA150	0									0	
Conductor Pipe	DWEA130	0									0	
Water Slaking	DWEA135	16,000									16,000	
Surface Casing	DWEA140	47,000									47,000	
Intermediate Casing 1	DWEA145	0									0	
Intermediate Casing 2	DWEA155	0									0	
Drilling Liner	DWEA160	0									0	
Production Casing or Liner			DWEA100	484,000							484,000	
Production Tie-Back			DWEA165	0	STMA101	0					0	
Tubing					STMA105	51,000			PCOML105	0	51,000	
Wellhead, Tree, Chokes	DWEA115	20,000	DWEA120	25,000	STMA120	60,000			PCOML120	0	105,000	
Liner Hanger, Isolation Packer	DWEA100	0	DWEA125	0							0	
Packer, Nipples					STMA100	28,000			PCOML100	0	28,000	
Pumping Unit, Engine					STMA105	0			PCOML105	0	0	
Downhole UPL Equipment					STMA110	80,000			PCOML110	0	80,000	
Surface Equipment									PCOML120	59,000	59,000	
Well Automation Materials									PCOML155	0	0	
Total Tangible - Well Equipment Cost		83,000		509,000		279,000				59,000	870,000	
N/C Lease Equipment							CONL680	183,000			183,000	
Blanks, Tanks, Steps, Stairs							CONL685	64,000			64,000	
Blowby Equipment							CONL610	179,000			179,000	
Secondary Containment							CONL615	24,000			24,000	
Overhead Power Distribution							CONL620	31,500			31,500	
Electricity							CONL625	36,500			36,500	
Telecommunication Equipment							CONL625	0			0	
Meters and Metering Equipment							CONL645	20,000			20,000	
Utility Line Pipe							CONL650	30,000			30,000	
Lease Automation Materials							CONL655	43,000			43,000	
FLUGL - Materials							CONL650	7,500			7,500	
FLUGL - Line Pipe							CONL655	11,500			11,500	
SWD/OTHER - Materials							CONL650	0			0	
SWD/OTHER - LINE PIPE							CONL655	0			0	
Total Tangible - Lease Equipment Cost								630,000			630,000	
Total Estimated Cost		2,191,000		865,000		5,620,000		1,049,000		221,340	9,946,340	



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
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AFE # 26621003

SCP - Drilling			ACP - Drilling			Completion		
Description	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount
Roads & Location	DHDC100	70,000			STRA100	70,000		
Damages	DHDC105	6,000						
Mud/Fluids Disposal	DHDC205	160,000			STRA205	62,000		
Day Rate	DHDC115 16 days at \$26,000/day	416,000	DHDC120 14 days at \$26,000/day	364,000				
Misc Preparation	DHDC130	35,000						
Jobs	DHDC125	55,000	DHDC125	0	STRA125	0		
Fuel	DHDC135 1300 gal/day at \$3.00/gal	3,900	DHDC135	0	STRA135	0		
Water for Drilling Rig (Not Frac Water)	DHDC140	5,000	DHDC140	0	STRA140	0		
Mud & Additives	DHDC145	200,000						
Surface Rentals	DHDC150 Per Day (RCP)/day	104,000	DHDC140	0	STRA140	100,000		
Downhole Rentals	DHDC155	97,000			STRA145	0		
Flowback Labor					STRA141	0		
Automation Labor								
Formation Evaluation (DST, Coring, etc.)	DHDC160	0			STRA150	0		
Mud Logging	DHDC170 12 days at \$1,200/day	14,400						
Open Hole Logging	DHDC180	0						
Cementing & Plug Equipment	DHDC185	65,000	DHDC185	160,000				
Tubular Inspections	DHDC190	18,000	DHDC190	5,000	STRA160	4,000		
Casing Crews	DHDC195	10,000	DHDC195	20,000	STRA165	0		
Mechanical Labor	DHDC200	20,000	DHDC170	10,000	STRA170	0		
Tracking/Transportation	DHDC205	18,000	DHDC175	8,000	STRA175	4,000		
Supervision	DHDC210	88,000	DHDC180	16,000	STRA180	74,000		
Trailer Haulage/Carry/Offloading	DHDC220	38,000	DHDC225	6,000	STRA220	28,000		
Other Misc Expenses	DHDC220	5,000	DHDC190	0	STRA190	115,000		
Overhead	DHDC225	10,000	DHDC195	5,000				
Remedial Cementing	DHDC231	0			STRA215	0		
MUD/DEMO	DHDC240	75,000						
Directional Drilling Services	DHDC245	225,000						
Solids Control	DHDC250	72,000						
Well Control Equip (Grabbing Services)	DHDC265	72,000	DHDC240	5,000	STRA240	81,000		
Fishing & Sidetrack Services	DHDC270	0	DHDC245	0	STRA245	0		
Completion Rig					STRA115	21,000		
Coil Tubing Services					STRA260	368,000		
Completion Logging/Perforating/Wireline					STRA200	400,000		
Composites Plug					STRA350	95,000		
Simulation					STRA210	2,526,000		
Simulated Water/Water Transfer/Water					STRA395	702,000		
Chemical Dosed Frac/Rental Equipment					STRA305	40,000		
Legal/Regulatory/Cursive	DHDC300	10,000						
Well Control Insurance	DHDC285 \$0.35/ft	6,000						
Major Construction Overhead								
Real Time Operations Center	DHDC360	0			STRA560	0		
FL/G - Labor								
FL/G - Supervision								
Survey								
SWD/Other - Labor								
SWD/OTHER - SUPERVISION								
Contingency	DHDC435 500 % of Drilling Intangibles	100,000	DHDC230	17,000	STRA230	257,000		
Contingency								
RBA Costs	DHDC285	0	DHDC275	0				
Total Intangible Cost		2,000,000		356,000		5,401,000		
Outer Pipe	DHWA130	0						
Conductor Pipe	DHWA130	0						
Water String	DHWA135	16,000						
Surface Casing	DHWA140 9 5/8" - 1,875ft at \$23.00/ft	47,000						
Intermediate Casing 1	DHWA145	0						
Intermediate Casing 2	DHWA155	0						
Drilling Liner	DHWA160	0						
Production Casing or Liner	DHWA100 5 1/2" - 18,402ft at \$25.00/ft	484,000						
Production Tie-Back	DHWA165	0			STMT101	0		
Tubing					STMT105 2 7/8" - 7,230ft at \$7.00/ft	51,000		
Wellhead, Tree, Chokes	DHWA115	20,000	DHWA120	25,000	STMT120	60,000		
Liner Hanger, Isolation Packer	DHWA180	0	DHWA125	0				
Packer, Nipples					STMT140	28,000		
Pumping Unit, Engine					STMT145	0		
Downhole Lift Equipment					STMT110	80,000		
Surface Equipment								
Well Accessory Materials								
Total Tangible - Well Equipment Cost		83,000		509,000		218,000		
NIC Lease Equipment								
Tanks, Tanks Steps, Stairs								
Battery Equipment								
Secondary Containment								
Overhead Power Distribution								
Fieldry Decoral								
Telecommunication Equipment								
Meters and Metering Equipment								
Facility Line Pipe								
Lease Accessory Materials								
FL/G - Materials								
FL/G - Line Pipe								
SWD/Other - Materials								
SWD/OTHER - LINE PIPE								
Total Tangible - Lease Equipment Cost								
Total Estimated Cost		2,191,000		865,000		18,428,000		



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
3H

AFE # 26621003

Description	Codes	Production Equip.		Post Completion		Total	
		Amount	Codes	Amount	Cost		
Roads & Location	CON.100	8,500	PCOM.100	28,000	116,500		
Damages	CON.105	1,000			7,000		
Acid/Water Disposal			PCOM.255	6,000 BWPD for 60 days @ \$0.25/hbl	90,000	312,000	
Day Rate						546,000	
Misc Preparation						35,000	
Blbs			PCOM.125	0	55,000		
Fuel			PCOM.130	0	82,000		
Water for Drilling Rig (Hot Frac Water)			PCOM.135	0	29,000		
Mud & Additives						200,000	
Surface Rentals	CON.140	2,000	PCOM.140	\$1,030/16 for Production Target of 30 Days	30,900	325,900	
Downhole Rentals			PCOM.145	0	97,000		
Flowback Labor			PCOM.141	\$980/d for Production Target of 14 Day	13,440	13,440	
Automation Labor	CON.150	37,500	PCOM.150		0	37,500	
Formation Evaluation (DST, Coring, etc.)						0	
Mud Logging						19,000	
Open Hole Logging						0	
Cementing & Plug Equipment						225,000	
Tubular Inspections			PCOM.160	0	27,000		
Casing Cams						30,000	
Mechanical Labor	CON.170	154,000	PCOM.170	0	184,000		
Trucking/Transportation	CON.175	19,000	PCOM.175	0	49,000		
Supervision	CON.180	12,000	PCOM.180	0	190,000		
Trailer House/Camp/Catering						72,000	
Other Misc Expenses	CON.180	10,000	PCOM.190	0	130,000		
Overhead						15,000	
Remedial Cementing			PCOM.215	0	0		
MOB/DBA/DB						75,000	
Directional Drilling Services						225,000	
Solids Control						72,000	
Well Control Equip (Simulating Services)			PCOM.240	0	158,000		
Fishing & Sidetrack Services			PCOM.245	0	0		
Completion Rig			PCOM.115	0	21,000		
Coff Tailing Services			PCOM.250	0	368,000		
Completion Logging/Perforating/Wireline			PCOM.200	0	400,000		
Composite Plugs			PCOM.390	0	86,000		
Stimulation Pumping/Chemicals/Additives/Sand			PCOM.210	0	2,926,000		
Stimulation Water/Water Transfer/Water						702,000	
Cimarex Owned Frac/Rental Equipment			PCOM.305	0	40,000		
Logistics/Regulatory/Compliance	CON.300	0				10,000	
Well Control Instruments						6,000	
Major Construction Overhead	CON.305	21,500				21,500	
Real Time Operations Center						0	
FL/CL - Labor	CON.500	54,500				54,500	
FL/CL - Supervision	CON.505	3,500				3,500	
Survey	CON.515	0				0	
SWD/Other - Labor	CON.680	0				0	
SWD/OTHER - SUPERVISION	CON.685	0				0	
Contingency	CON.820	87,500	PCOM.220	0	461,500		
Contingency	CON.821	8,000				8,000	
P&A Costs						0	
Total Tangible Cost		418,000			162,340	8,446,340	
Drill Pipe						0	
Conductor Pipe						0	
Water Drilling						16,000	
Surface Casing						47,000	
Intermediate Casing 1						0	
Intermediate Casing 2						0	
Drilling Liner						0	
Production Casing or Liner						484,000	
Production Tie-Back						0	
Tubing			PCOM.105	0	51,000		
Wellhead, Tree, Chokes			PCOM.120	0	105,000		
Liner Hanger, Isolation Packer						0	
Packer, Mipples			PCOM.140	0	28,000		
Pumping Unit, Engine			PCOM.170	0	0		
Downhole UR Equipment			PCOM.190	0	80,000		
Surface Equipment			PCOM.220	59,000	59,000		
Well Automation Materials			PCOM.255	0	0		
Total Tangible - Well Equipment Cost					59,000	870,000	
P&A Lease Equipment	CON.400	185,000				185,000	
Tanks, Tanks Skids, Skids	CON.405	64,000				64,000	
Skid Equipment	CON.410	179,000				179,000	
Secondary Containment	CON.415	24,000				24,000	
Overhead Power Distribution	CON.420	31,500				31,500	
Facility Electrical	CON.425	36,500				36,500	
Telecommunication Equipment	CON.430	0				0	
Meters and Metering Equipment	CON.440	20,000				20,000	
Facility Line Pipe	CON.450	30,000				30,000	
Lease Automation Materials	CON.455	43,000				43,000	
FL/CL - Materials	CON.530	7,500				7,500	
FL/CL - Line Pipe	CON.535	11,500				11,500	
SWD/Other - Materials	CON.630	0				0	
SWD/OTHER - LINE PIPE	CON.635	0				0	
Total Tangible - Lease Equipment Cost		630,000				630,000	
Total Estimated Cost		1,049,000			221,340	9,946,340	



Authorization For Expenditure Drilling

AFE # 26621004

Company Entity

Date Prepared

4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 4H	Carlsbad Bone Spring Prospect	300001-131.01	26621004
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
	W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM			
X New Supplement Revision	Formation	Well Type	Td Measured Depth	Td Vertical Depth
	Wolfcamp Upper	DEV	19,000	8,700

Purpose Drill and complete well

Description

Drilling Drill and complete a horizontal test. Drill to 450', set water string casing. Drill to 1876', set surface casing. Drill to 8133' (KOP). Drill curve at 12"/100' initial build rate to +/- 90 degrees 8610' TVD and drill a +/- 9420' long lateral in the Wolfcamp formation. Run and cement production casing. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,108,000		\$2,108,000
Completion Costs		\$6,338,340	\$6,338,340
Total Intangible Cost	\$2,108,000	\$6,338,340	\$8,446,340
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$83,000	\$787,000	\$870,000
Lease Equipment		\$630,000	\$630,000
Total Tangible Cost	\$83,000	\$1,417,000	\$1,500,000
Total Well Cost	\$2,191,000	\$7,755,340	\$9,946,340

Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Marketing Election

Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

Nonoperator Approval			
Company	Approved By (Print Name)	Approved By (Signature)	Date

NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

4/23/2019



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
4H

AFE # 26621004

Description	BCP - Drilling		ACP - Drilling		Comp/Site		Production Equip		Post Completion		Total	
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount		Cost
Roads & Location	DIOC180	70,000			STMA109	10,000	CONL300	8,500	PCOMA109	28,000		116,500
Damages	DIOC185	6,000			STMA125	62,000	CONL305	1,000	PCOMA125	90,000		7,000
Waste/Fluids Disposal	DIOC185	160,000										312,000
Day Rate	DIOC118	442,000	DIOC120	104,000								546,000
Misc Preparation	DIOC130	35,000										35,000
Rts	DIOC135	55,000	DIOC135	0	STMA125	0			PCOMA125	0		55,000
Fuel	DIOC135	82,000	DIOC130	0					PCOMA130	0		82,000
Water for Drilling (Not For Water)	DIOC140	5,000	DIOC135	0	STMA125	24,000			PCOMA135	0		29,000
Mud & Additives	DIOC145	200,000										200,000
Surface Rentals	DIOC130	104,000	DIOC140	0	STMA140	185,000	CONL140	2,000	PCOMA140	30,900		325,900
Downhole Rentals	DIOC135	97,000			STMA145	0			PCOMA145	0		97,000
Wellbore Labor					STMA141	0			PCOMA141	13,440		13,440
Wellbore Evaluation (DST, Coring, etc)	DIOC140	0			STMA150	0	CONL150	37,500	PCOMA150	0		37,500
Well Logging	DIOC170	18,000										18,000
Open Hole Logging	DIOC180	0										0
Cementing & Plug Equipment	DIOC185	65,000	DIOC135	160,000	STMA180	4,000			PCOMA180	0		229,000
Wellbore Insulation	DIOC190	18,000	DIOC180	5,000	STMA185	0			PCOMA185	0		23,000
Coring Over	DIOC185	10,000	DIOC185	20,000	STMA170	0	CONL170	154,000	PCOMA170	0		184,000
Mechanical Labor	DIOC200	20,000	DIOC170	10,000	STMA175	0	CONL175	18,000	PCOMA175	0		48,000
Trucking/Transportation	DIOC205	18,000	DIOC175	8,000	STMA180	4,000	CONL180	12,000	PCOMA180	0		190,000
Supervision	DIOC210	88,000	DIOC180	16,000	STMA190	74,000	CONL190	10,000	PCOMA190	0		178,000
Trailer House/Camp/Catering	DIOC280	38,000	DIOC235	6,000	STMA280	28,000						130,000
Other Misc Expenses	DIOC220	5,000	DIOC190	0	STMA190	115,000						15,000
Overhead	DIOC225	10,000	DIOC185	5,000								0
Acetrical Cementing	DIOC231	0			STMA215	0			PCOMA215	0		75,000
MOS/ROMOS	DIOC240	75,000										225,000
Directional Drilling Services	DIOC245	225,000										72,000
Well Control	DIOC250	72,000										190,000
Well Control Equip (Emulating Services)	DIOC255	72,000	DIOC240	5,000	STMA240	81,000			PCOMA240	0		0
Fishing & Side-track Services	DIOC270	0	DIOC245	0	STMA245	0			PCOMA245	0		21,000
Completion Rig					STMA115	21,000			PCOMA115	0		368,000
CO2 Tubing Services					STMA280	368,000			PCOMA280	0		400,000
Completion Logging/Perforating/Wireline					STMA300	400,000			PCOMA300	0		96,000
Composite Plugs					STMA380	96,000			PCOMA380	0		2,806,000
Stimulation Pumping/Chemicals/Additives/Sand					STMA210	2,806,000			PCOMA210	0		702,000
Stimulation Water/Water Transfer/Water Storage					STMA305	702,000			PCOMA305	0		40,000
Classroom Owned Frac/Rental Equipment						40,000	CONL300	0				10,000
Liquid/Air/Drilling Cement	DIOC300	10,000					CONL305	21,580				6,000
Well Control Insurance	DIOC385	6,000										21,580
Major Construction Overhead	DIOC560	0			STMA580	0	CONL580	54,580				0
Well Test Operations Center							CONL585	3,500				54,580
H/A/L - Labor							CONL515	0				3,500
H/A/L - Supervision							CONL600	0				0
Survey							CONL605	0				0
SWD/Other - Labor							CONL605	0				0
SWD/Other - SUPERVISION	DIOC435	100,000	DIOC220	17,000	STMA320	257,000	CONL320	87,500	PCOMA320	0		461,500
Casing/Liner							CONL321	8,000				8,000
Casing/Liner	DIOC285	0	DIOC275	0								0
PBA Case												0
Total Drilling Cost		2,108,000		354,000		5,401,000		418,000		163,340		8,446,340
Water Pipe	DWEA150	0										0
Cementation Pipe	DWEA150	0										0
Water Slur	DWEA135	16,000										16,000
Surface Casing	DWEA140	47,000										47,000
Intermediate Casing 1	DWEA145	0										0
Intermediate Casing 2	DWEA155	0										0
Drilling User	DWEA160	0										0
Production Casing or Liner	DWEA160	484,000										484,000
Production Tie-back	DWEA165	0			STMT101	0			PCOMT105	0		0
Tubing					STMT105	51,000			PCOMT120	0		51,000
Wellhead, Tree, Chokes	DWEA115	20,000	DWEA120	25,000	STMT120	60,000						105,000
Uter Hanger, Isolation Packer	DWEA160	0	DWEA125	0	STMT400	28,000			PCOMT400	0		0
Packer, Mopples					STMT405	0			PCOMT405	0		28,000
Pumping Unit, Engine					STMT410	80,000			PCOMT410	0		0
Downhole Lift Equipment									PCOMT420	59,000		80,000
Surface Equipment									PCOMT425	0		59,000
Well Automation Materials												0
Total Tubing & Well Equipment Cost		80,000		300,000		238,000				59,000		870,000
PUC Lease Equipment							CONL400	183,000				183,000
Tanks, Tanks, Drags, Sails							CONL405	64,000				64,000
Battery Equipment							CONL410	173,000				173,000
Secondary Construction							CONL415	24,000				34,000
Overhead Power Distribution							CONL420	31,500				31,500
Facility Electrical							CONL425	96,500				96,500
Telecommunication Equipment							CONL430	20,000				0
Meters and Measuring Equipment							CONL435	30,000				20,000
Facility Line Pipe							CONL440	43,000				30,000
Lease Automation Materials							CONL445	7,500				43,000
PUC - Materials							CONL450	11,500				7,500
PUC - Line Pipe							CONL455	0				11,500
Lease Automation Materials							CONL460	0				0
Lease Automation Materials							CONL465	0				0
Total Tubing & Lease Equipment Cost		2,191,000		865,000		5,639,000		1,049,000		221,340		9,948,340



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
4H

AFE # 26621004

		BCP - Drilling		ACP - Drilling		Comp/Sec	
Description	Codes	Amount	Codes	Amount	Codes	Amount	
Roads & Location	DICC380	70,000			STBA100	10,000	
Drawings	DICC385	6,000					
Mud/Wells Disposal	DICC355	180,000			STBA355	62,000	
Day Rate	DICC175 16 days at \$26,000/day	442,000	DICC120 4 days at \$26,000/day	104,000			
Mud Preparation	DICC130	35,000					
Wells	DICC135	55,000	DICC125	0	STBA125	0	
Food	DICC135 1,500 gal/day at \$3.00/gal	82,000	DICC130	0			
Water for Drilling Rig (Dist Frac Water)	DICC140	5,000	DICC135	0	STBA125	24,000	
Mud & Additives	DICC145	200,000					
Surface Records	DICC150 Per Day (BCP)/day	104,000	DICC140	0	STBA140	189,000	
Downhole Records	DICC155	97,000			STBA145	0	
Flowback Labor					STBA141	0	
Automation Labor							
Formation Evaluation (DST, Coring, etc.)	DICC180	0			STBA150	0	
Mud Logging	DICC170 12 days at \$1,250/day	15,000					
Open Hole Logging	DICC180	0					
Conveying & Flow Equipment	DICC185	65,000	DICC135	160,000			
Tubular Inspection	DICC190	18,000	DICC160	5,000	STBA160	4,000	
Casing Crews	DICC195	10,000	DICC165	20,000	STBA165	0	
Mechanical Labor	DICC200	20,000	DICC170	10,000	STBA170	0	
Trucking/Transportation	DICC205	18,000	DICC175	8,000	STBA175	4,000	
Supplies	DICC210	80,000	DICC180	16,000	STBA180	74,000	
Trailer House/Camp/Catering	DICC215	39,000	DICC225	6,000	STBA220	28,000	
Other Misc Expenses	DICC220	5,000	DICC185	0	STBA190	115,000	
Overhead	DICC225	18,000	DICC195	5,000			
Thermal Drilling	DICC231	0			STBA215	0	
MUD/DRILL	DICC240	75,000					
Directional Drilling Services	DICC245	225,000					
Solids Control	DICC250	72,000					
Well Control Equip (Drilling Services)	DICC255	72,000	DICC240	5,000	STBA240	81,000	
Flaring & Silencing Services	DICC270	0	DICC245	0	STBA245	0	
Completion Rig					STBA215	21,000	
Cuttings Services					STBA250	368,000	
Completion Logging/Performance/Wellbore					STBA220	400,000	
Compressor Plugs					STBA230	96,000	
Stimulation					STBA210	2,926,000	
Stimulation Water/Water Transport/Water					STBA235	702,000	
Chemicals Owned/Leased/Equipment					STBA305	40,000	
Legal/Regulatory/Consulting	DICC280	10,000					
Well Control Insurance	DICC285 16.15%/yr	6,000					
After Construction Overhead							
Well Site Operations Center	DICC340	0			STBA380	0	
FLUGL - Labor							
FLUGL - Supervision							
Survey							
SWD/Other - Labor							
SWD/OTHER - SUPERVISION							
Contingency	DICC315 500 % of Drilling Intangibles	100,000	DICC320	17,000	STBA320	257,000	
Contingency							
M&A Costs	DICC355	0	DICC375	0			
Total Intangible Cost		2,108,000		256,000		1,407,000	
Drive Pipe	DWEL150	0					
Conductor Pipe	DWEL155	0					
Water Siding	DWEL155	16,000					
Surface Casing	DWEL140 9.5" - 1.875" at \$25.00/ft	47,000					
Intermediate Casing 1	DWEL145	0					
Intermediate Casing 2	DWEL155	0					
Drilling Liner	DWEL160	0					
Production Casing or Liner			DWEL300 5 1/2" - 13,400 ft at \$25.00/ft	484,000			
Production Tie-Back			DWEL165	0	STBA1501	0	
Tubing					STBA1505 2 7/8" - 7,250 ft at \$7.00/ft	51,000	
Wellhead, Tree, Chokes	DWEL115	20,000	DWEL120	25,000		60,000	
Liner Hangers, Isolation Packer	DWEL190	0	DWEL125	0			
Packer, Mopack					STBA1600	28,000	
Pumping Unit, Engine					STBA1605	0	
Downhole UT Equipment					STBA1610	80,000	
Surface Equipment							
Well Automation Materials							
Total Drilling - Well Equipment Cost		83,000		509,000		215,000	
N/C Lease Equipment							
Tanks, Tanks, Skids, Stairs							
Battery Equipment							
Secondary Compressors							
Overhead Power Distribution							
Facility Electrical							
Telecommunication Equipment							
Meters and Metering Equipment							
Facility Line Pipe							
Lease Accommodation Materials							
FLUGL - Materials							
FLUGL - Line Pipe							
SWD/Other - Materials							
SWD/OTHER - LINE PIPE							
Total Drilling - Lease Equipment Cost							
Total Estimated Cost		2,191,000		865,000		1,622,000	



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM

AFE # 26621004

4H

Description	Codes	Production Equip		Post Completion		Total	
		Amount	Codes	Amount	Cost	Amount	Cost
Roads & Location	CONL100	8,500	PCDM100	Post/Reel Clean Up		28,000	116,500
Damages	CONL105	1,000					7,000
Mud/Fields Disposal			PCDM255	6,000 BAYD for 60 days @ \$0.25/bbl		90,000	312,000
Day Run							546,000
Misc Preparation							35,000
Flts			PCDM125		0		55,000
Fuel			PCDM130		0		82,000
Winter for Drilling Rig (Not Frac Water)			PCDM135		0		29,000
Mud & Additives							200,000
Surface Rentals	CONL140	2,000	PCDM140	27,034 for Production Target of 30 Days	30,900		325,900
Downhole Rentals			PCDM145		0		97,000
Flowback Labor			PCDM147	15624 for Production Target of 14 Day	13,440		13,440
Automation Labor	CONL150	37,500	PCDM150		0		37,500
Formation Evaluation (DST, Coring, etc.)							0
Mud Logging							19,000
Open Hole Logging							0
Conveying & Reel Equipment							225,000
Tubular Inspections			PCDM160		0		27,000
Casing Crew							30,000
Mechanical Labor	CONL170	154,000	PCDM170		0		184,000
Tracking/Transportation	CONL175	79,000	PCDM175		0		45,000
Supervision	CONL180	12,000	PCDM180		0		190,000
Trailer Hauls/Camp/Catering							73,000
Other Misc Expenses	CONL190	10,000	PCDM190		0		130,000
Overhead							15,000
Remedial Cementing			PCDM215		0		0
MWD/POH/ACS							75,000
Directional Drilling Services							225,000
Solids Control							72,000
Well Control Equip (Enabling Services)			PCDM340		0		158,000
Fishing & Sidekick Services			PCDM345		0		0
Completion Rig			PCDM115		0		21,000
Coil Tubing Services			PCDM260		0		368,000
Completion Logging/Perforating/Wireline			PCDM200		0		400,000
Composite Plug			PCDM390		0		96,000
Distribution Pumping/Chemicals/Additives/Sand			PCDM270		0		2,926,000
Unassisted Water/Water Transfer/Water							702,000
Owner Owned Frac/Rentals Equipment			PCDM305		0		40,000
Legal/Regulatory/Compliance	CONL300	0					10,000
Well Control Insurance							6,000
Major Construction Overhead	CONL305	21,500					21,500
Real Time Operations Center							0
PLUG - Labor	CONL300	54,500					54,500
PLUG - Supervision	CONL305	3,500					3,500
Survey	CONL315	0					0
MWD/Other - Labor	CONL400	0					0
MWD/OTHER - SUPERVISION	CONL405	0					0
Contingency	CONL320	87,500	PCDM220		0		461,500
Contingency	CONL321	8,000					8,000
PMA Costs							0
Total Drilling Ops		478,000			362,340		8,446,340
Drill Pipe							0
Conductor Pipe							0
Water String							16,000
Surface Casing							47,000
Intermediate Casing 1							0
Intermediate Casing 2							0
Drilling Unit							484,000
Production Casing or Liner							0
Production Tie-back							0
Tubing			PCDM105		0		51,000
Wellhead, Tree, Chokes			PCDM130		0		105,000
Usher Hanger, Isolation Packer			PCDM160		0		0
Packer, Nipples			PCDM165		0		28,000
Pumping Unit, Engine			PCDM190		0		0
Downhole Lift Equipment			PCDM195		0		80,000
Surface Equipment			PCDM120	REC Owned Sand Separator	59,000		59,000
Well Annulation Materials			PCDM135		0		0
Total Drilling - Well Equipment Costs					59,000		670,000
N/C Lease Equipment	CONL400	183,000					183,000
Jacks, Tank, Steps, Stairs	CONL405	64,000					64,000
Heavy Equipment	CONL410	179,000					179,000
Secondary Control Systems	CONL415	24,000					24,000
Overhead Power Distribution	CONL420	31,500					31,500
Facility Electrical	CONL425	36,500					36,500
Telecommunication Equipment	CONL430	0					0
Meters and Metering Equipment	CONL435	20,000					20,000
Facility Line Pipe	CONL440	30,000					30,000
Lease Automation Materials	CONL445	43,000					43,000
PLUG - Materials	CONL550	7,500					7,500
PLUG - Line Pipe	CONL555	11,500					11,500
MWD/Other - Materials	CONL630	0					0
MWD/OTHER - LINE PIPE	CONL635	0					0
Total Drilling - Lease Equipment Costs		630,000					630,000
Total Estimated Costs		1,108,000			221,340		9,946,340



Authorization For Expenditure Drilling

AFE # 26621005

Company Entry

Date Prepared

4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 5H	Lea Prospect	300001-132.01	26621005
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
<input checked="" type="checkbox"/> New	Formation	Well Type	Td Measured Depth	Td Vertical Depth
<input type="checkbox"/> Supplement	Wolfcamp Lower	DEV	19,900	9,600
<input type="checkbox"/> Revision				

Purpose Drill and complete well

Description

Drilling Drill and complete a horizontal test. Drill to 450', set water string casing. Drill to 1900', set surface casing. Drill to 8830' (KOP). Drill curve at 12°/100' initial build rate to +/- 75 degrees and set casing at +/- 9455' MD. Finish curve at +/- 4°/100' to +/- 9340' TVD and drill a +/- 9180' long lateral in the Wolfcamp formation. Run and cement production liner. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,586,000		\$2,586,000
Completion Costs		\$6,225,840	\$6,225,840
Total Intangible Cost	\$2,586,000	\$6,225,840	\$8,811,840
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$376,000	\$569,000	\$945,000
Lease Equipment		\$203,500	\$203,500
Total Tangible Cost	\$376,000	\$772,500	\$1,148,500
Total Well Cost	\$2,962,000	\$6,998,340	\$9,960,340

Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Marketing Election

Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

Nonoperator Approval

Company	Approved By (Print Name)	Approved By (Signature)	Date
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NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

4/23/2019



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
5H

AFE # 26621005

Description	BCP - Drilling		ACP - Drilling		Comp/Stim		Production Equip		Post Completion		Total
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	
Roads & Location	DIOC100	95,000			STIM100	10,000	CON100	5,500	PCOM100	28,000	138,500
Damages	DIOC105	6,000					CON105	1,500			7,500
Aband/Placid Disposal	DIOC235	160,000			STIM235	62,000			PCOM235	75,000	297,000
Dry Rate	DIOC115	494,000	DIOC120	104,000							598,000
Mud Preparation	DIOC120	35,000									35,000
Wells	DIOC125	75,000	DIOC125	0	STIM125	0			PCOM125	0	75,000
Fluid	DIOC135	90,000	DIOC130	0					PCOM130	0	90,000
Water for Drilling Rig (Net Frac Water)	DIOC140	5,000	DIOC135	0	STIM135	24,000			PCOM135	0	29,000
Shut In Additives	DIOC145	198,000									198,000
Surface Rentals	DIOC150	112,000	DIOC140	0	STIM140	237,000	CON140	2,300	PCOM140	30,900	302,400
Downhole Rentals	DIOC155	142,000			STIM145	0			PCOM145	0	142,000
Flowback Labor					STIM141	0			PCOM141	13,440	13,440
Automation Labor							CON150	16,500	PCOM150	0	16,500
Formation Evaluation (DST, Coring, etc.)	DIOC160	0			STIM150	0					0
Mud Logging	DIOC160	22,000									22,000
Open Hole Logging	DIOC160	0									0
Cementing & Plug Equipment	DIOC165	145,000	DIOC155	63,000	STIM160	4,000			PCOM160	0	208,000
Subsidiary Inspections	DIOC190	50,000	DIOC160	5,000	STIM160	0					59,000
Casing Crews	DIOC195	20,000	DIOC165	13,000	STIM165	0					33,000
Mechanical Labor	DIOC200	20,000	DIOC170	10,000	STIM170	0	CON170	72,500	PCOM170	0	102,500
Trucking/Transportation	DIOC205	23,000	DIOC175	8,000	STIM175	4,000	CON175	8,500	PCOM175	0	45,500
Supervision	DIOC210	96,000	DIOC180	16,000	STIM180	94,000	CON180	3,500	PCOM180	0	209,500
Trailer House/Camp/Catering	DIOC280	42,000	DIOC255	6,000	STIM280	34,000					82,000
Other Misc Expenses	DIOC220	5,000	DIOC190	0	STIM190	155,000	CON190	19,500	PCOM190	0	173,500
Overhead	DIOC225	10,000	DIOC195	5,000							15,000
Remedial Cementing	DIOC231	0			STIM215	0			PCOM215	0	0
SUBS/ROM/DB	DIOC240	100,000									100,000
Directional Drilling Services	DIOC245	339,000									339,000
Safety Control	DIOC260	80,000									80,000
Well Control Equip (Snubbing Services)	DIOC265	80,000	DIOC240	5,000	STIM240	109,000			PCOM240	0	194,000
Logging & Sidetrack Services	DIOC270	0	DIOC245	0	STIM245	0			PCOM245	0	0
Completion Rig					STIM115	21,000			PCOM115	0	21,000
Coil Tubing Services					STIM260	368,000			PCOM260	0	368,000
Completion Logging/Perforating/Wireline					STIM200	432,000			PCOM200	0	432,000
Composite Plugs					STIM290	96,000			PCOM290	0	96,000
Stimulation Pumping/Chemicals/Additives/Sand					STIM210	2,926,000			PCOM210	0	2,926,000
Stimulation Water/Water Transfer/Water Storage					STIM295	702,000					702,000
General Owned Tool/Rental Equipment					STIM305	40,000			PCOM305	0	40,000
Legal/Regulatory/Compliance	DIOC300	10,000					CON300	0			10,000
Well Control Insurance	DIOC285	7,000									7,000
Major Construction Overhead					CON305	12,000					12,000
Real Time Operations Center	DIOC560	0			STIM560	0					0
PLUG - Labor					CON300	65,500					65,500
PLUG - Supervision					CON305	5,000					5,000
Survey					CON315	0					0
DWD/Other - Labor					CON305	0					0
DWD/OTHER - SUPERVISION					CON305	0					0
Contingency	DIOC435	128,000	DIOC220	12,000	STIM220	266,000	CON220	31,000	PCOM220	0	437,000
Contingency							CON320	10,000			10,000
ABA Costs	DIOC285	0	DIOC275	0							0
Total Ineligible Cost		2,586,000		247,000		5,584,000		247,500		147,340	8,810,840
Drive Pipe	DWEL190	0									0
Conductor Pipe	DWEL130	0									0
Water Boring	DWEL135	16,000									16,000
Surface Casing	DWEL140	48,000									48,000
Intermediate Casing 1	DWEL145	252,000									252,000
Intermediate Casing 2	DWEL155	0									0
Drilling Labor	DWEL160	0									0
Production Casing or Liner			DWEL100	148,000							148,000
Production Tie-Back			DWEL165	0	STIM181	0					0
Tubing					STIM105	71,000			PCOM105	0	71,000
Wellhead, Tree, Choker	DWEL115	20,000	DWEL130	25,000	STIM120	60,000			PCOM120	0	105,000
Liner Hanger, Isolation Packer	DWEL100	0	DWEL125	98,000							98,000
Packer, Hanger					STIM140	28,000			PCOM140	0	28,000
Pumping Unit, Engine					STIM145	0			PCOM145	0	0
Downhole Lift Equipment					STIM110	80,000			PCOM110	0	80,000
Surface Equipment									PCOM140	59,000	59,000
Well Automation Materials									PCOM145	0	0
Total Eligible - Well Equipment Cost		276,000		271,000		239,000				59,000	945,000
N/C Lease Equipment							CON140	48,000			48,000
Flares, Tanks, Skids, Stairs							CON145	0			0
Battery Equipment							CON140	60,500			60,500
Secondary Containments							CON145	9,500			9,500
Overhead Power Distribution							CON140	0			0
Facility Electrical							CON145	15,000			15,000
Telecommunication Equipment							CON145	0			0
Meters and Metering Equipment							CON145	15,500			15,500
Facility Line Pipe							CON145	10,000			10,000
Lease Automation Materials							CON145	19,000			19,000
PLUG - Materials							CON150	10,000			10,000
PLUG - Line Pipe							CON155	16,000			16,000
DWD/Other - Materials							CON150	0			0
DWD/OTHER - LINE PIPE							CON155	0			0
Total Eligible - Lease Equipment Cost								203,500			203,500
Total Estimated Cost		2,962,000		518,000		5,823,000		451,000		206,340	9,960,340



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
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AFE # 26621005

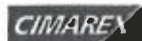
Description	BCP - Drilling		ACP - Drilling		Comp/Stim	
	Codes	Amount	Codes	Amount	Codes	Amount
Roads & Location	DHDC.100	95,000			STRA.100	10,000
Damages	DHDC.105	6,000				
Material/Block Disposal	DHDC.235	160,000			STRA.255	62,000
Day Rate	DHDC.115 16 days at \$26,000/day	494,000	DHDC.120 4 days at \$26,000/day	104,000		
Misc Preparation	DHDC.120	35,000				
Wells	DHDC.125	75,000	DHDC.125	0	STRA.125	0
Fluid	DHDC.135 1,300 gal/day at \$1.00/gal	90,000	DHDC.135	0	STRA.135	24,000
Water for Drilling Rig (pick frac water)	DHDC.140	5,000	DHDC.135	0		
Joint & Additives	DHDC.145	138,000	DHDC.140	0	STRA.140	237,000
Surface Rentals	DHDC.150 Per Day BCP/day	112,000	DHDC.140	0	STRA.145	0
Downhole Rentals	DHDC.155	142,000			STRA.141	0
Flowback Labor						
Automation Labor						
Formation Evaluation (DST, Coring, etc.)	DHDC.160	0			STRA.150	0
Mud Logging	DHDC.170 14 days at \$1,200/day	22,000				
Open Hole Logging	DHDC.180	0				
Conveying & Fluid Equipment	DHDC.185	145,000	DHDC.155	63,000		
Tubular Inspections	DHDC.190	50,000	DHDC.160	5,000	STRA.160	4,000
Casing Crews	DHDC.195	20,000	DHDC.165	13,000	STRA.165	0
Mechanical Labor	DHDC.200	20,000	DHDC.170	10,000	STRA.170	0
Trucking/Transportation	DHDC.205	25,000	DHDC.175	8,000	STRA.175	4,000
Supervision	DHDC.210	96,000	DHDC.180	16,000	STRA.180	94,000
Trailer House/Camp/Catering	DHDC.220	47,000	DHDC.185	6,000	STRA.185	34,000
Other Misc Expenses	DHDC.225	5,000	DHDC.190	0	STRA.190	155,000
Overhead	DHDC.230	10,000	DHDC.195	5,000		
Remedial Conveying	DHDC.231	0			STRA.215	0
MOB/DEM/DOB	DHDC.240	100,000				
Directional Drilling Services	DHDC.245	339,000				
Solids Control	DHDC.260	60,000				
Well Control Equip (Shooting Services)	DHDC.265	80,000	DHDC.240	5,000	STRA.240	109,000
Fishing & Sidetrack Services	DHDC.270	0	DHDC.245	0	STRA.245	0
Completion Rig					STRA.115	21,000
Coil Tubing Services					STRA.260	368,000
Corrosion Logging/Perforating/Wireline					STRA.200	432,000
Corrosive Plugs					STRA.230	96,000
Simulation					STRA.210	2,926,000
Simulation Water/Water Transfer/Water					STRA.235	702,000
Chemicals Owned/Tracked/Leased					STRA.305	40,000
Log/Lit/Logistics/Outlines	DHDC.300	10,000				
Well Control Insurance	DHDC.285	7,000				
Lease Construction Overhead						
Real Time Operations Center	DHDC.560	0			STRA.560	0
PLUG - Labor						
PLUG - Supervision						
Survey						
SWD/Other - Labor						
SWD/OTHER - SUPERVISION						
Contingency	DHDC.435 300 % of Drilling Intangibles	123,000	DHDC.220	12,000	STRA.220	266,000
Contingency						
P&A Costs	DHDC.295	0	DHDC.275	0		
Total Intangible Cost		2,586,000		247,000		5,594,000
Drive Pipe	DHWE.100	0				
Conveyance Pipe	DHWE.130	0				
Water String	DHWE.125	15,000				
Surface Casing	DHWE.140 9 5/8" - 1,300 ft at \$25.00/ft	48,000				
Intermediate Casing 1	DHWE.145 7" - 3,560 ft at \$28.00/ft	292,000				
Intermediate Casing 2	DHWE.155	0				
Drilling Liner	DHWE.160	0				
Production Casing or Liner			DHWE.100 4 1/2" - 11,350 ft at \$13.00/ft	148,000		
Production Tie-Back			DHWE.165	0	STRA.161	0
Tubing					STRA.165 3-1/2" - 2,530 ft at \$1.00/ft	71,000
Wellhead, Tree, Chokes	DHWE.115	20,000	DHWE.120	25,000	STRA.120	60,000
Liner Hanger, Isolation Packer	DHWE.190	0	DHWE.125	98,000		
Packer, Mophead					STRA.100	28,000
Pumping Unit, Engine					STRA.105	0
Downhole Lift Equipment					STRA.110	80,000
Surface Equipment						
Well Automation Materials						
Total Tangible - Well Equipment Cost		976,000		271,000		239,000
N/C Lease Equipment						
Tanks, Tanks Steps, Slat/s						
Battery Equipment						
Secondary Containment						
Overhead Power Distribution						
Facility Baricade						
Telecommunication Equipment						
Meters and Metering Equipment						
Facility Line Pipe						
Lease Automation Materials						
PLUG - Materials						
PLUG - Liner Pipe						
SWD/Other - Materials						
SWD/OTHER - LINER PIPE						
Total Tangible - Lease Equipment Cost		2,962,000		518,000		1,837,000
Total Estimated Cost		2,962,000		518,000		1,837,000



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
5H

AFE # 26621005

Description	Codes	Production Equip		Post Completion		Total	
		Amount	Codes	Amount	Codes	Amount	Cost
Roads & Location	CON190	5,500	PCOM190	First/Road Clean Up		28,000	138,500
Damper	CON195	1,500					7,500
Mud/Fluids Disposal			PCOM235	5,000 BWPD for 60 days @ 10.25/rel		75,000	297,000
Day Rate							598,000
Mud Preparation							35,000
Nits			PCOM125			0	75,000
Fuel			PCOM130			0	90,000
Water for Drilling Rig (Hot Frac Water)			PCOM135			0	28,000
Mud & Additives							198,000
Surface Rentals	CON140	2,500	PCOM140	\$1,032/rel for Production Target of 30 Days		30,900	382,400
Downhole Rentals			PCOM145			0	142,000
Flowback Labor			PCOM141	\$960/rel for Production Target of 14 Day		13,440	13,440
Automation Labor	CON150	16,500	PCOM150			0	16,500
Formation Evaluation (DST, Coring, etc.)							0
Mud Logging							22,000
Open Hole Logging							0
Cementing & Plug Equipment							208,000
Tubular Inspection			PCOM180			0	50,000
Coring Cranes							23,000
Mechanical Labor	CON170	72,500	PCOM170			0	102,500
Trucking/Transportation	CON175	8,500	PCOM175			0	45,500
Supervision	CON180	3,500	PCOM180			0	209,500
Trailer House/Camp/Catering							82,000
Other Misc Expenses	CON190	13,500	PCOM190			0	173,500
Overhead							15,000
Remedial Cementing			PCOM215			0	0
MOB/DEMO							100,000
Directional Drilling Services							339,000
Solids Control							80,000
Well Control Equip (Shrubbing Services)			PCOM240			0	194,000
Flaring & Bidsels Services			PCOM245			0	0
Completion Rig			PCOM215			0	21,000
Coil Tubing Services			PCOM260			0	368,000
Completion Logging/Perforating/Alone			PCOM200			0	432,000
Compass or Plug			PCOM130			0	96,000
Stimulation Pumping/Chemicals/Additives/Sand			PCOM210			0	2,926,000
Stimulation Water/Water Transfer/Water							702,000
Owner Owned Frac/Rents/ Equipment			PCOM305			0	40,000
Legal/Regulatory/Curve	CON300	0					10,000
Well Control Insurance							7,000
Major Construction Overhead	CON305	12,000					12,000
Rail Time Operations Center							0
PLUG - Labor	CON500	65,500					65,500
PLUG - Supervision	CON505	5,000					5,000
Survey	CON515	0					0
SWD/Other - Labor	CON600	0					0
SWD/OTHER - SUPERVISION	CON605	0					0
Contingency	CON620	31,000	PCOM220			0	432,000
Contingency	CON621	10,000					10,000
PSA Costs							0
Total Intangible Cost:		247,500				147,340	8,811,500
Drive Pipe							0
Conductor Pipe							0
Water String							16,000
Surface Casing							48,000
Intermediate Casing 1							292,000
Intermediate Casing 2							0
Drilling Liner							0
Production Casing or Liner							148,000
Production Tie-Back							0
Tubing			PCOMT105			0	71,000
Wellhead, Tree, Chokes			PCOMT120			0	105,000
Liner Hanger, Healdon Packer							98,000
Packer, Hanger			PCOMT400			0	28,000
Pumping Unit, Engine			PCOMT405			0	0
Downhole Lift Equipment			PCOMT410			0	80,000
Surface Equipment			PCOMT420	SEC Owned Sand Separator		59,000	59,000
Well Annulation Materials			PCOMT435			0	0
Total Tangible - Well Equipment Cost						59,000	945,000
N/C Lease Equipment	CON7400	48,000					48,000
Tanks, Tanks Skips, Stairs	CON7415	0					0
Booey Equipment	CON7410	60,500					60,500
Secondary Containment	CON7415	9,500					9,500
Overhead Power Distribution	CON7420	0					0
Feddy Electrical	CON7425	15,000					15,000
Telecommunication Equipment	CON7430	0					0
Meters and Metering Equipment	CON7435	15,500					15,500
Feddy Line POC	CON7440	10,000					10,000
Lease Automation Materials	CON7455	19,000					19,000
PLUG - Materials	CON7530	10,000					10,000
PLUG - Line Pipe	CON7535	16,000					16,000
SWD/OTHER - Materials	CON7560	0					0
SWD/OTHER - LINE PIPE	CON7565	0					0
Total Tangible - Lease Equipment Cost		203,500					203,500
Total Estimated Cost:		451,000				286,340	9,969,340



Authorization For Expenditure Drilling

AFE # 26621006

Company Entry

Date Prepared
4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 6H	Lea Prospect	300001-133.01	26621006
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
<input checked="" type="checkbox"/> New	Formation	Well Type	Td Measured Depth	Td Vertical Depth
<input type="checkbox"/> Supplement	Wolfcamp Lower	DEV	19,900	9,600
<input type="checkbox"/> Revision				

Purpose Drill and complete well

Description

Drilling Drill and complete a horizontal test. Drill to 450', set water string casing. Drill to 1900', set surface casing. Drill to 8830' (KOP). Drill curve at 12"/100' initial build rate to +/- 75 degrees and set casing at +/- 9455' MD. Finish curve at +/- 4"/100' to +/- 9340' TVD and drill a +/- 9180' long lateral in the Wolfcamp formation. Run and cement production liner. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,586,000		\$2,586,000
Completion Costs		\$6,225,840	\$6,225,840
Total Intangible Cost	\$2,586,000	\$6,225,840	\$8,811,840
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$376,000	\$569,000	\$945,000
Lease Equipment		\$203,500	\$203,500
Total Tangible Cost	\$376,000	\$772,500	\$1,148,500
Total Well Cost	\$2,962,000	\$6,998,340	\$9,960,340

Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Marketing Election

Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

Nonoperator Approval

Company	Approved By (Print Name)	Approved By (Signature)	Date

NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

4/23/2019



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
6H

AFE # 26621006

Description	BCP - Drilling		ACI - Drilling		Comp/Stm		Production Equip		Post Completion		Total	
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Cost	Cost
Roads & Location	DIC1100	95,000			STM1100	10,000	CON1100	5,500	PCOM1100	28,000		138,500
Damages	DIC1105	6,000					CON1105	1,500				7,500
Mud/Fluids Disposal	DIC1235	160,000			STM1235	62,000			PCOM1235	75,000		297,000
Day Rate	DIC1115	434,000	DIC1130	104,000								538,000
Misc Preparation	DIC1120	35,000										35,000
Bits	DIC1125	75,000	DIC1125	0	STM1125	0			PCOM1125	0		75,000
Fuel	DIC1135	90,000	DIC1130	0					PCOM1130	0		90,000
Water for Drilling Rig (Not Frac Water)	DIC1140	5,000	DIC1135	0	STM1135	24,000			PCOM1135	0		29,000
Mud & Additives	DIC1145	198,000										198,000
Surface Rentals	DIC1150	112,000	DIC1145	0	STM1145	237,000	CON1140	2,500	PCOM1140	30,900		382,400
Downhole Rentals	DIC1155	142,000			STM1145	0			PCOM1145	0		142,000
Flowback Labor					STM1145	0			PCOM1141	13,440		13,440
Automation Labor							CON1150	16,500	PCOM1150	0		16,500
Formation Evaluation (DST, Coring, etc.)	DIC1160	0			STM1150	0						0
Mud Logging	DIC1170	22,000										22,000
Open Hole Logging	DIC1180	0										0
Cementing & Plug Equipment	DIC1185	145,000	DIC1135	63,000								208,000
Tubular Inspections	DIC1190	50,000	DIC1160	5,000	STM1160	4,000			PCOM1160	0		59,000
Casing Gravel	DIC1195	20,000	DIC1165	13,000	STM1165	0						33,000
Mechanical Labor	DIC1200	20,000	DIC1170	10,000	STM1170	0	CON1170	72,500	PCOM1170	0		102,500
Trucking/Transportation	DIC1205	25,000	DIC1175	8,000	STM1175	4,000	CON1175	8,500	PCOM1175	0		45,500
Suppelson	DIC1210	96,000	DIC1180	16,000	STM1180	94,000	CON1180	3,500	PCOM1180	0		209,500
Trailer House/Camp/Catering	DIC1280	42,000	DIC1235	6,000	STM1280	34,000						82,000
Other Misc Expenses	DIC1220	5,000	DIC1190	0	STM1190	155,000	CON1190	13,500	PCOM1190	0		173,500
Overhead	DIC1225	10,000	DIC1195	5,000								15,000
Remedial Cementing	DIC1231	0			STM1215	0			PCOM1215	0		0
LOG/DIAGN	DIC1240	100,000										100,000
Directional Drilling Services	DIC1245	339,000										339,000
Solids Control	DIC1260	80,000										80,000
Well Control Equip (Shudding Services)	DIC1265	80,000	DIC1240	5,000	STM1240	109,000			PCOM1240	0		194,000
Fishing & Sidekick Services	DIC1270	0	DIC1245	0	STM1245	0			PCOM1245	0		0
Completion Rig					STM1250	21,000			PCOM1250	0		21,000
Coff Tending Services					STM1260	368,000			PCOM1260	0		368,000
Completion Logging/Perforating/Wireline					STM1280	432,000			PCOM1280	0		432,000
Composite Plug					STM1280	36,000			PCOM1280	0		36,000
Simulation Pumping/Chemicals/Additives/Sand					STM1210	2,926,000			PCOM1210	0		2,926,000
Simulation Water/Mud Transfer/Water Storage					STM1295	702,000						702,000
Company Owned Frac/Rental Equipment					STM1305	40,000			PCOM1305	0		40,000
Legal/Regulatory/Curtive	DIC1310	10,000					CON1300	0				10,000
Well Control Insurance	DIC1315	7,000					CON1305	12,000				19,000
Major Construction Overhead												0
Real Time Operations Center	DIC1360	0			STM1360	0						0
FLUG - Labor							CON1320	65,500				65,500
FLUG - Supervision							CON1325	5,000				5,000
Survey							CON1335	0				0
SWD/Other - Labor							CON1340	0				0
SWD/OTHER - SUPERVISION							CON1345	0				0
Contingency	DIC1315	123,000	DIC1320	12,000	STM1320	266,000	CON1320	31,000	PCOM1320	0		432,000
Contingency							CON1325	10,000				10,000
Ind A Costs	DIC1395	0	DIC1375	0								0
Total Incomplete Cost		2,512,000		271,000		5,883,000		267,500		147,340		8,811,840
Drive Pipe	DWEB1150	0										0
Conductor Pipe	DWEB1130	0										0
Water String	DWEB1135	16,000										16,000
Surface Casing	DWEB1140	48,000										48,000
Intermediate Casing 1	DWEB1145	252,000										252,000
Intermediate Casing 2	DWEB1155	0										0
Drilling Liner	DWEB1160	0										0
Production Casing or Liner			DWEB1100	148,000								148,000
Production Tie-Back			DWEB1165	0	STM1101	0						0
Tubing					STM1105	71,000			PCOM1105	0		71,000
Wellhead, Tree, Chokes	DWEB1115	21,000	DWEB1120	25,000	STM1120	60,000			PCOM1120	0		106,000
Liner Hanger, Isolation Packer	DWEB1100	0	DWEB1125	98,000								98,000
Packer, Nipples					STM1140	28,000			PCOM1140	0		28,000
Pumping Unit, Engine					STM1145	0			PCOM1145	0		0
Downhole UH Equipment					STM1110	80,000			PCOM1110	0		80,000
Surface Equipment									PCOM1120	59,000		59,000
Well Automation Materials									PCOM1135	0		0
Local Tangle - Well Equipment Cost		376,000		271,000		239,000				59,000		945,000
N/C Lease Equipment							CON1160	48,000				48,000
Tanks, Tanks Barge, Scales							CON1165	0				0
Battery Equipment							CON1170	60,500				60,500
Secondary Containment							CON1175	9,500				9,500
Overhead Power Distribution							CON1180	0				0
Facility Electrical							CON1185	15,000				15,000
Telecommunication Equipment							CON1190	0				0
Meters and Metering Equipment							CON1195	15,500				15,500
Facility Line Pipe							CON1200	10,000				10,000
Lease Automation Materials							CON1205	19,000				19,000
FLUG - Materials							CON1210	10,000				10,000
FLUG - Line Pipe							CON1215	16,000				16,000
SWD/Other - Materials							CON1220	0				0
SWD/OTHER - LINE PIPE							CON1225	0				0
Total Tangle - Lease Equipment Cost								203,500				203,500
Total Estimated Cost:		2,912,000		518,000		5,883,000		457,000		206,340		9,966,340



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
6H

AFE # 26621006

Description	Codes	Amount	Codes	Amount	Codes	Amount
Roads & Location	DHDC100	95,000			STBA1100	10,000
Dewatering	DHDC105	6,000				
Material/Fluids Disposal	DHDC115	160,000			STBA1215	62,000
Day Rate	DHDC115	16 days at \$24,000/day	DHDC120	4 days at \$24,000/day		
Misc Preparation	DHDC120	35,000				
Wells	DHDC125	75,000	DHDC125	0	STBA1125	0
Fuel	DHDC135	1,800 gal/day at \$3.00/gal	DHDC130	0		
Mixer for Drilling Rig (Plus Frac Water)	DHDC140	5,000	DHDC135	0	STBA1135	24,000
Food & Address	DHDC145	158,000				
Surface Rentals	DHDC150	112,000	DHDC140	0	STBA1140	237,000
Downhole Rentals	DHDC155	142,000			STBA1145	0
Flowback Labor					STBA1141	0
Assessment Labor					STBA1150	0
Formation Evaluation (DST, Coring, etc)	DHDC160	0				
Well Logging	DHDC170	34 days at \$1,200/day				
Open Hole Logging	DHDC180	0				
Cementing & Floor Equipment	DHDC185	145,000	DHDC155	63,000		
Tubular Inspections	DHDC190	50,000	DHDC160	5,000	STBA1160	4,000
Coring Crews	DHDC195	20,000	DHDC165	13,000	STBA1165	0
Mechanical Labor	DHDC200	20,000	DHDC170	10,000	STBA1170	0
Trucking/Transportation	DHDC205	25,000	DHDC175	8,000	STBA1175	4,000
Supervision	DHDC210	95,000	DHDC180	16,000	STBA1180	94,000
Trailer House/Camp/Catering	DHDC220	42,000	DHDC255	6,000	STBA1280	34,000
Other Misc Expenses	DHDC225	5,000	DHDC190	0	STBA1190	155,000
Overhead	DHDC235	10,000	DHDC195	5,000		
Fluorinated Cementing	DHDC231	0			STBA1215	0
Fluorinated Cement	DHDC240	100,000				
Directional Drilling Services	DHDC245	338,000				
Solids Control	DHDC260	80,000				
Well Control Equip (Shrubbing Services)	DHDC265	80,000	DHDC240	5,000	STBA1340	109,000
Fishing & Sidetrack Services	DHDC270	0	DHDC245	0	STBA1245	0
Completion Rig					STBA1115	21,000
Coil Tubing Services					STBA1260	368,000
Completion Logging/Perforating/Wireline					STBA1200	432,000
Compressor Plugs					STBA1300	96,000
Simulation					STBA1210	2,926,000
Simulation Water/Mixer Transfer/Water					STBA1385	702,000
Owner Owned Free/Mental Equipment					STBA1305	40,000
Legal/Regulatory/Curtain	DHDC300	10,000				
Well Control Insurance	DHDC385	\$0.55/r				
Major Construction Overhead	DHDC580	0			STBA1580	0
Real Time Operations Center						
FLUG - Labor						
FLUG - Supervision						
Survey						
SWD/Other - Labor						
SWD/OTHER - SUPERVISION	DHDC485	500 % of Drilling Intangibles	DHDC330	12,000	STBA1220	266,000
Contingency	DHDC385	0	DHDC375	0		
Contingency	DHDC385	0				
MBA Costs						
Total Intangibles		2,586,000		247,000		5,584,000
Drill Pipe	DHWR130	0				
Conductor Pipe	DHWR130	0				
Water String	DHWR135	16,000				
Surface Casing	DHWR140	9 5/8" - 13,000 ft at \$25.00/ft				
Intermediate Casing 1	DHWR145	7" - 8,500 ft at \$28.00/ft				
Intermediate Casing 2	DHWR155	0				
Drilling Liner	DHWR160	0				
Production Casing or Liner			DHWR100	4 1/2" - 11,350 ft at \$13.00/ft	148,000	
Production Tie-Back			DHWR165	0	STBA1101	0
Tubing					STBA1105	71,000
Wellhead, Tree, Chokes	DHWR115	20,000	DHWR120	25,000	STBA1120	60,000
Liner Hanger, Isolation Packer	DHWR180	0	DHWR125	98,000		
Packer, Nipples					STBA1180	28,000
Pumping Unit, Engine					STBA1105	0
Downhole URT Equipment					STBA1110	80,000
Surface Equipment						
Well Automation Materials						
Total Tangible - Well Equipment Cost		376,000				238,000
N/C Lease Equipment						
Tanks, Tanks Skips, Stairs						
Battery Equipment						
Secondary Containment						
Overhead Power Distribution						
Facility Electrical						
Telecommunication Equipment						
Meters and Metering Equipment						
Facility Line Pipe						
Lease Automation Materials						
FLUG - Materials						
FLUG - Line Pipe						
SWD/Other - Materials						
SWD/OTHER - LINE PIPE						
Total Tangible - Lease Equipment Cost						
Total Estimated Cost		12,842,000		818,000		13,660,000



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM

AFE # 26621006

6H

Description	Code	Production Equip.		Post Completion		Total	
		Amount	Code	Amount	Code	Amount	Cost
Roads & Location	CON.160	5,500	PCOM.130	28,000		138,500	
Damages	CON.165	1,500				7,500	
Mud/Muds Disposal			PCOM.255	5,000 BHPD for 60 days @ \$0.25/bbl		297,000	
Day Rate						598,000	
Misc Preparation						35,000	
Sits			PCOM.125	0		75,000	
Fuel			PCOM.130	0		90,000	
Mixer for Drilling Alg (Heat Proc. Water)			PCOM.135	0		29,000	
Mud & Additives						198,000	
Surface Rentals	CON.140	2,500	PCOM.140	\$1,020/d for Production Target at 30 Days	30,500	382,400	
Downhole Rentals			PCOM.145	0		142,000	
Flowback Labor			PCOM.141	\$950/d for Production Target of 14 Day	13,440	13,440	
Automation Labor	CON.150	16,500	PCOM.150	0		16,500	
Formation Evaluation (GST, Coring, etc.)						0	
Mud Logging						22,000	
Open Hole Logging						0	
Cementing & Plug Equipment						208,000	
Tubular Inspections			PCOM.160	0		59,000	
Casing Crews						33,000	
Mechanical Labor	CON.170	72,500	PCOM.170	0		102,500	
Tracking/Transportation	CON.175	8,500	PCOM.175	0		45,500	
Supervision	CON.180	3,500	PCOM.180	0		209,500	
Trailer House/Camp/Catering						82,000	
Other Misc Expense:	CON.190	13,500	PCOM.190	0		173,500	
Overhead						15,000	
Remedial Cementing			PCOM.215	0		0	
MISC/DAMGS						100,000	
Directional Drilling Services						339,000	
Solids Control						80,000	
Well Control Equip (Grubbing Services)			PCOM.240	0		194,000	
Flare & Slatrack Services			PCOM.245	0		0	
Completion Rig			PCOM.115	0		21,000	
Coff Tubing Services			PCOM.260	0		360,000	
Completion Logging/Perforating/Wireline			PCOM.260	0		432,000	
Composite Plugs			PCOM.290	0		96,000	
Stimulation Pumping/Chemicals/Additives/Sand			PCOM.210	0		2,826,000	
Stimulation Water/Water Transfer/Water						702,000	
Cimarex Owned Frac/Prestal Equipment			PCOM.385	0		40,000	
Legal/Regulatory/Compliance	CON.380	0				10,000	
Well Control Insurance						7,000	
Major Construction Overhead	CON.385	12,000				12,000	
Real Time Operations Center						0	
PLUG - Labor	CON.580	65,000				65,500	
PLUG - Supervision	CON.585	5,000				5,000	
Survey	CON.595	0				0	
SWQ/Other - Labor	CON.680	0				0	
SWQ/OTHER - SUPERVISION	CON.685	0				0	
Contingency	CON.220	31,000	PCOM.220	0		432,000	
Casualty	CON.221	10,000				10,000	
P&A Costs						0	
Total Intangible Cost		203,500		147,340		8,811,000	
Drive Pipe						0	
Conductor Pipe						0	
Water Siding						16,000	
Surface Casing						48,000	
Intermediate Casing 1						292,000	
Intermediate Casing 2						0	
Drilling Liner						0	
Production Casing or Liner						148,000	
Production Tie-Back						0	
Tubing			PCOM.105	0		71,000	
Wellhead, Tree, Chokes			PCOM.120	0		105,000	
Liner Hanger, Isolation Packer						58,000	
Packer, Nipples			PCOM.140	0		28,000	
Pumping Unit, Engine			PCOM.145	0		0	
Downhole UR Equipment			PCOM.170	0		80,000	
Surface Equipment			PCOM.180	59,000		59,000	
Well Automation Materials			PCOM.155	0		0	
Total Tangible - Well Equipment Cost				59,000		845,000	
N/C Lease Equipment	CON.140	48,000				48,000	
Tanks, Tanks Steps, Skids	CON.145	0				0	
Battery Equipment	CON.150	60,500				60,500	
Secondary Circulations	CON.155	9,500				9,500	
Overhead Power Distribution	CON.160	0				0	
Facility Electrical	CON.165	15,000				15,000	
Telecommunication Equipment	CON.170	0				0	
Meters and Metering Equipment	CON.175	15,500				15,500	
Feedly Line Pipe	CON.180	10,000				10,000	
Lease Automation Materials	CON.185	18,000				18,000	
PLUG - Materials	CON.190	10,000				10,000	
PLUG - Line Pipe	CON.195	16,000				16,000	
SWQ/Other - Materials	CON.200	0				0	
SWQ/OTHER - LINE PIPE	CON.205	0				0	
Total Tangible - Lease Equipment Cost		203,500				203,500	
Total Estimated Cost		457,000		206,340		9,860,340	



Authorization For Expenditure Drilling

AFE # 26621007

Company Entity

Date Prepared
4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 7H	Carlsbad Bone Spring Prospect	300001-134.01	26621007
County, State	Location		Estimated Spud	Estimated Completion
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM		1/1/2021	2/1/2021
<input checked="" type="checkbox"/> New <input type="checkbox"/> Supplement <input type="checkbox"/> Revision	Formation	Well Type	Td Measured Depth	Td Vertical Depth
	Wolfcamp Lower	DEV	19,900	9,600

Purpose Drill and complete well

Description

Drilling Drill and complete a horizontal test. Drill to 450', set water string casing. Drill to 1900', set surface casing. Drill to 8830' (KOP). Drill curve at 12"/100' initial build rate to +/- 75 degrees and set casing at +/- 9455' MD. Finish curve at +/- 4"/100' to +/- 9340' TVD and drill a +/- 9180' long lateral in the Wolfcamp formation. Run and cement production liner. Stage frac. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,586,000		\$2,586,000
Completion Costs		\$6,225,840	\$6,225,840
Total Intangible Cost	\$2,586,000	\$6,225,840	\$8,811,840
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$376,000	\$569,000	\$945,000
Lease Equipment		\$203,500	\$203,500
Total Tangible Cost	\$376,000	\$772,500	\$1,148,500
Total Well Cost	\$2,962,000	\$6,998,340	\$9,960,340

Comments On Well Costs

1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Well Control Insurance

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Marketing Election

Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

Comments on AFE

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

Nonoperator Approval			
Company	Approved By (Print Name)	Approved By (Signature)	Date

NOTICE TO NONOPERATOR: Costs shown on this form are estimates only. By executing this AFE, the consenting party agrees to pay its proportionate share of actual costs incurred. Overhead will be charged in accordance with the Joint Operating Agreement.

4/23/2019



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM

AFE # 26621007

7H

Description	DCP - Drilling		ACP - Drilling		Comp/Stop		Production Equip		Post Completion		Total
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	
Roads & Location	DIC100	95,000			STRA100	10,000		5,500	PCOM100	28,000	138,500
Damages	DIC105	6,000									7,500
Mud/Fluids Disposal	DIC235	160,000			STRA235	62,000		1,500	PCOM235	75,000	297,000
Day Rate	DIC115	494,000	DIC120	104,000							598,000
Mud Preparation	DIC120	35,000									35,000
SPS	DIC125	75,000	DIC125	0	STRA125	0			PCOM125	0	75,000
Fuel	DIC135	90,000	DIC130	0					PCOM130	0	90,000
Water for Drilling Rig (Hot Fac Water)	DIC140	5,000	DIC135	0	STRA135	24,000			PCOM135	0	29,000
Mud & Additives	DIC145	198,000									198,000
Surface Rentals	DIC150	112,000	DIC140	0	STRA140	237,000	CON140	2,500	PCOM140	30,900	582,400
Downhole Rentals	DIC155	142,000			STRA145	0			PCOM145	0	142,000
Flowback Labor					STRA141	0			PCOM141	13,440	13,440
Automation Labor							CON150	16,500	PCOM150	0	16,500
Formation Evaluation (DST, Coring, etc.)	DIC160	0			STRA150	0					0
Mud Logging	DIC170	22,000									22,000
Open Hole Logging	DIC180	0									0
Cementing & Plug Equipment	DIC185	145,000	DIC185	60,000							205,000
Tubular Inspections	DIC190	50,000	DIC160	5,000	STRA160	4,000			PCOM160	0	59,000
Casing Cures	DIC195	20,000	DIC165	13,000	STRA165	0					33,000
Mechanical Labor	DIC200	20,000	DIC170	10,000	STRA170	0	CON170	72,500	PCOM170	0	102,500
Mechanical/Transportation	DIC205	25,000	DIC175	8,000	STRA175	4,000	CON175	8,500	PCOM175	0	45,500
Supervision	DIC210	96,000	DIC180	16,000	STRA180	94,000	CON180	3,500	PCOM180	0	209,500
Water House/Camp/Catering	DIC280	42,000	DIC235	6,000	STRA280	34,000					82,000
Other Misc Expenses	DIC220	5,000	DIC190	0	STRA190	155,000	CON190	13,500	PCOM190	0	173,500
Overhead	DIC225	10,000	DIC195	5,000							15,000
Rentals/Cementing	DIC231	0			STRA215	0			PCOM215	0	0
WATER/STRA	DIC240	100,000									100,000
Directional Drilling Services	DIC245	339,000									339,000
Salids Control	DIC280	80,000									80,000
Well Cement Equip Grubbing Services	DIC266	80,000	DIC240	5,000	STRA240	108,000			PCOM240	0	194,000
Plugging & Sealed Services	DIC270	0	DIC245	0	STRA245	0			PCOM245	0	0
Completion Rig					STRA115	21,000			PCOM115	0	21,000
Cut Tubing Services					STRA260	368,000			PCOM260	0	368,000
Completion Logging/Perforating/Wireline					STRA200	432,000			PCOM200	0	432,000
Cementing Plug					STRA390	96,000			PCOM390	0	96,000
Simulation Pumping/Chemicals/Additives/Sand					STRA210	2,926,000			PCOM210	0	2,926,000
Simulation Water/Water Transfer/Water Storage					STRA395	702,000					702,000
Owner Owned Frac/Rentals Equipment					STRA305	40,000			PCOM305	0	40,000
Legal/Regulatory/Consult	DIC300	10,000					CON300	0			10,000
Well Control Insurance	DIC285	7,000									7,000
Major Construction Overhead							CON305	12,000			12,000
Real Time Operations Center	DIC560	0			STRA560	0					0
FLU/L - Labor							CON380	65,500			65,500
FLU/L - Supervision							CON385	5,000			5,000
Survey							CON395	0			0
SWD/Other - Labor							CON390	0			0
SWD/Other - SUPERVISOR							CON395	0			0
Contingency	DIC405	128,000	DIC320	12,000	STRA320	266,000	CON320	31,000	PCOM320	0	437,000
Contingency							CON325	10,000			10,000
PIA Costs	DIC285	0	DIC275	0							0
Total Drilling Cost		2,586,000		247,000		5,584,000		247,500		147,340	8,671,840
Drive Pipe	DWE150	0									0
Conductor Pipe	DWE130	0									0
Water String	DWE125	16,000									16,000
Surface Casing	DWE140	48,000									48,000
Intermediate Casing 1	DWE145	292,000									292,000
Intermediate Casing 2	DWE155	0									0
Drilling Liner	DWE160	0									0
Production Casing or Liner			DWEA100	148,000							148,000
Production Tie-Back			DWEA165	0	STMT101	0					0
Tubing					STMT105	71,000			PCOM105	0	71,000
ANWBMA, Tree, Chokes	DWE115	20,000	DWEA120	25,000	STMT120	60,000			PCOM120	0	105,000
Liner Hanger, Isolation Packer	DWE100	0	DWEA125	98,000							98,000
Packer, Nipples					STMT400	28,000			PCOM400	0	28,000
Pumping Unit Engine					STMT405	0			PCOM405	0	0
Downhole LRI Equipment					STMT410	80,000			PCOM410	0	80,000
Surface Equipment									PCOM430	59,000	59,000
Well Automation Materials									PCOM435	0	0
Total Tieback - Well Equipment Cost		276,000		271,000		239,000				59,000	945,000
WELLBORE EQUIPMENT							CON400	48,000			48,000
Tanks, Tanks, Stairs							CON405	0			0
Inventory Equipment							CON410	60,500			60,500
Secondary Containment							CON415	9,500			9,500
Overhead Power Distribution							CON420	0			0
Facility Electrical							CON425	15,000			15,000
Telecommunication Equipment							CON428	0			0
Meters and Metering Equipment							CON435	15,500			15,500
Wellbore Line Pipe							CON438	10,000			10,000
Lease Automation Materials							CON435	19,000			19,000
FLU/L - Materials							CON438	10,000			10,000
FLU/L - Line Pipe							CON435	16,000			16,000
SWD/Other - Materials							CON438	0			0
SWD/OTHER - LINE PIPE							CON435	0			0
Total Tieback - Well Equipment Cost								203,500			203,500
Total Estimated Cost		2,962,000		518,000		5,823,000		451,000		206,340	9,960,340



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM
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AFE # 26621007

BCP - Drilling			ACF - Drilling			Completion		
Description	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount
Leads & Location	DIOC180	95,000			STBA180			10,000
Permitting	DIOC185	6,000						
Mud/Water Disposal	DIOC285	160,000			STBA285			62,000
Drill Rate	DIOC115 18 days at \$28,000/day	494,000	DIOC120 4 days at \$26,000/day	104,000				
Mud Preparation	DIOC180	35,000						
Bits	DIOC125	75,000	DIOC125	0	STBA125			0
Tool	DIOC135 1,800 gal/day at \$1.00/gal	90,000	DIOC130	0				
Water for Drilling Rig (Not Frac Water)	DIOC140	5,000	DIOC135	0	STBA135			24,000
Mud & Additives	DIOC145	198,000						
Surface Rentals	DIOC180 1 Per Day BCP/day	112,000	DIOC140	0	STBA140			237,000
Downhole Rentals	DIOC195	142,000			STBA145			0
Flowback Labor					STBA141			0
Automation Labor								
Formation Evaluation (DST, Coring, etc.)	DIOC180	0			STBA150			0
Mud Logging	DIOC170 14 days at \$1,500/day	22,000						
Open Hole Logging	DIOC180	0						
Cementing B Floor Equipment	DIOC185	145,000	DIOC155	63,000				
Tubular Inspectors	DIOC190	50,000	DIOC160	5,000	STBA160			4,000
Casing Cams	DIOC195	20,000	DIOC165	13,000	STBA165			0
Mechanical Labor	DIOC200	20,000	DIOC170	10,000	STBA170			0
Trucking/Transportation	DIOC205	25,000	DIOC175	8,000	STBA175			4,000
Supervision	DIOC210	96,000	DIOC180	16,000	STBA180			94,000
Trailer House/Camp/Catering	DIOC280	42,000	DIOC235	6,000	STBA280			34,000
Other Misc Expenses	DIOC280	5,000	DIOC190	0	STBA190			153,000
Overhead	DIOC225	10,000	DIOC195	5,000				
Remedial Cementing	DIOC281	0			STBA215			0
M/OB/D&M/OB	DIOC240	100,000						
Directional Drilling Services	DIOC245	338,000						
Solids Control	DIOC280	80,000						
Well Control Equip (Snubbing Services)	DIOC285	80,000	DIOC240	5,000	STBA240			109,000
Wellbore Sidetrack Services	DIOC270	0	DIOC245	0	STBA245			0
Completion Rig								
Coil Tubing Services								
Completion Logging/Perforating/Wireline								
Completion Plugs								
Chemical								
Schumaker Water/Water Transfer/Water								
Cummins Owned Frac/Rental Equipment								
Log/Regulatory/Compliance	DIOC300	10,000						
Well Control Insurance	DIOC285 \$0.35/ft	7,000						
Major Construction Overhead								
Real Time Operations Center	DIOC560	0			STBA560			0
PLUG - Labor								
PLUG - Supervision								
Survey								
SWD/Other - Labor								
SWD/OTHER - SUPERVISION								
Contingency	DIOC435 500 % of Drilling Intangibles	123,000	DIOC220	12,000	STBA220			266,000
Contingency								
PLA Costs	DIOC285	0	DIOC275	0				
Total Intangible Cost		2,584,000		247,000				5,584,000
Drive Pipe	DWE1150	0						
Conductor Pipe	DWE1130	0						
Water String	DWE1135	16,000						
Surface Casing	DWE1140 9 5/8" - 1,900ft at \$25.00/ft	48,000						
Intermediate Casing 1	DWE1145 7" - 9,500ft at \$28.00/ft	292,000						
Intermediate Casing 2	DWE1155	0						
Drilling Liner	DWE1160	0						
Production Casing or Liner			DWEA100 4 1/2" - 11,350ft at \$13.00/ft	148,000				
Production Tie-back			DWEA145	0	STMT101			0
Tubing					STMT105 3-1/2" - 7,350ft at \$9.00/ft			71,000
Wellhead, Tree, Chokes	DWE1115	23,000	DWEA120	25,000	STMT120			60,000
Liner Hanger, Isolation Packer	DWE1100	0	DWEA125	88,000				
Packer, Nipples					STMT400			28,000
Pumping Unit, Engine					STMT405			0
Downhole LH Equipment					STMT410			80,000
Surface Equipment								
Well Automation Materials								
Total Tangible - Well Equipment Cost		376,000		271,000				230,000
M/C Lease Equipment								
Pumps, Tanks, Steps, Stairs								
Wellbore Equipment								
Powerline Construction								
Overhead Power Distribution								
Facility Electrical								
Telecommunication Equipment								
Meters and Metering Equipment								
Facility Line Pipe								
Lease Automation Materials								
PLUG - Materials								
PLUG - Line Pipe								
SWD/Other - Materials								
SWD/OTHER - LINE PIPE								
Total Tangible - Lease Equipment Cost								
Total Estimated Cost		3,960,000		818,000				5,823,000



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM

AFE # 26621007

7H

		Production Equip.		Post Completion		Total	
Description	Codes	Amount	Codes	Amount	Cost		
Personnel & Location	CONL300	5,500	PCOML100	Prod/Reed Clean Up	28,000	138,500	
Damages	CONL305	1,500			7,500		
Mud/Pit/Loss Disposal			PCOML255	15,000 BWPD for 60 days @ \$0.25/bbl	75,000	257,000	
Day Rate					596,000		
Mud Preparation					35,000		
Shut			PCOML125		0	75,000	
Fuel			PCOML130		0	90,000	
Water for Drilling Rig (Not Frac Water)			PCOML135		0	29,000	
Mud/Bt Additives						198,000	
Surface Rentals	CONL140	2,500	PCOML140	\$1,680/M for Production Target of 30 Days	30,900	382,400	
Downhole Rentals			PCOML145		0	142,000	
Flareback Labor			PCOML141	\$960/M for Production Target of 14 Day	13,440	13,440	
Automation Labor	CONL150	16,500	PCOML150		0	16,500	
Formation Evaluation (DST, Coring, etc.)						0	
Shut Logging						22,000	
Open Hole Logging						0	
Cementing & Plug Equipment						208,000	
Tubular Inspections			PCOML160		0	58,000	
Casing Crows						33,000	
Mechanical Labor	CONL170	72,500	PCOML170		0	102,500	
Trucking/Transportation	CONL175	8,500	PCOML175		0	45,500	
Supervision	CONL180	3,500	PCOML180		0	209,500	
Trailer Hauler/Camp/Catering						82,800	
Other Misc Expenses	CONL190	13,500	PCOML190		0	178,500	
Overhead						15,000	
Remedial Cementing			PCOML215		0	0	
MOB/DOD/DOS						100,000	
Directional Drilling Services						338,000	
Solids Control						80,000	
Well Control Equip (Snubbing Services)			PCOML240		0	194,000	
Fishing & Sidetrack Services			PCOML245		0	0	
Completion Rig			PCOML115		0	21,000	
Coil Tubing Services			PCOML280		0	368,000	
Completion Logging/Perforating/Wireline			PCOML300		0	432,000	
Compressive Plugs			PCOML390		0	56,000	
Stimulation Pumping/Chemicals/Additives/Sand			PCOML210		0	2,826,000	
Stimulation Water/Water Transfer/Water						702,000	
Company Owned Frac/Rental Equipment			PCOML385		0	40,000	
Large Regulatory/Combiwe	CONL300	0				10,000	
Well Control Insurance						7,000	
Major Construction Overhead	CONL305	12,000				12,000	
Prec Time Operations Center						0	
FLUGL - Labor	CONL500	65,500				65,500	
FLUGL - Supervision	CONL505	5,000				5,000	
Burner	CONL515	0				0	
SWD/Other - Labor	CONL600	0				0	
SWD/OTHER - SUPERVISION	CONL605	0				0	
Contingency	CONL220	31,000	PCOML220		0	432,000	
Contingency	CONL221	10,000				10,000	
FLUGL Costs						0	
Total Intangible Cost					147,340	8,811,840	
Casing Pipe						0	
Completion Pipe						0	
Water String						16,000	
Surface Casing						48,000	
Intermediate Casing 1						292,000	
Intermediate Casing 2						0	
Drilling Liner						0	
Production Casing or Liner						148,000	
Production Tie-Back						0	
Tubing			PCOML105		0	71,000	
Wellhead, Tree, Chokes			PCOML120		0	105,000	
Sliver Hanger, Isolation Packer						98,000	
Packer, Nipples			PCOML400		0	28,000	
Pumping Unit, Engine			PCOML405		0	0	
Downhole Lift Equipment			PCOML410		0	80,000	
Surface Equipment			PCOML420	SEC Owned Sand Separator	59,000	59,000	
Well Automation Materials			PCOML435		0	0	
Total Tangible - Well Equipment Cost					59,000	945,000	
N/C Lease Equipment	CONL400	48,000				48,000	
Tanks, Tanks Steps, Stairs	CONL405	0				0	
Battery Equipment	CONL410	60,500				60,500	
Secondary Containments	CONL415	9,500				9,500	
Overhead Power Distribution	CONL420	0				0	
Facility Electrical	CONL425	15,000				15,000	
Telecommunication Equipment	CONL430	0				0	
Address and Metering Equipment	CONL435	15,500				15,500	
Pipeline Line Pipe	CONL435	10,000				10,000	
Lease Automation Materials	CONL435	19,000				19,000	
FLUGL - Materials	CONL530	10,000				10,000	
FLUGL - Line Pipe	CONL535	16,000				16,000	
SWD/Other - Materials	CONL630	0				0	
SWD/OTHER - LINE PIPE	CONL635	0				0	
Total Tangible - Lease Equipment Cost		203,500				203,500	
Total Estimated Cost		451,880			206,340	9,960,340	

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

**APPLICATION OF CIMAREX
ENERGY CO. FOR COMPULSORY
POOLING, EDDY COUNTY,
NEW MEXICO**

CASE NO. 20590

AFFIDAVIT OF HARRISON HASTINGS

STATE OF TEXAS)
) ss.
COUNTY OF MIDLAND)

Harrison Hastings, being duly sworn, deposes and states:

1. I am over the age of 18, I am a geologist for Cimarex Energy Co. ("Cimarex"), and have personal knowledge of the matters stated herein. I have been qualified by the Oil Conservation Division ("Division") as an expert petroleum geologist and my credentials were accepted as a matter of record by the Division.

2. I conducted a geological study of the area that encompasses the horizontal spacing unit that is the subject of Cimarex's application in this case and am familiar with the geological matters involved in this case.

3. This case includes a Wolfcamp proposed horizontal spacing unit located in the W/2 of Section 34 and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico, which is the focus of my study area. This proposed spacing unit is dedicated to the **Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, and 7H** wells.

4. As part of my study, I have prepared the following geological exhibits with respect to the horizontal spacing units for this case that are attached to my affidavit and described below:

EXHIBIT B

- a. **Exhibit B.1** is a Deep Structure Map on the top of the Wolfcamp formation. This map identifies the sections to be developed with a red shaded rectangle. It also shows that the structure dips to the east-northeast.
- b. **Exhibit B.2** is a Winerack Diagram that includes the Wolfcamp formation. This diagram identifies the Wolfcamp formation in purple, and the proposed wells with green circles labeled by well number. It also shows that the wells will be 330' from the proposed unit boundaries and orthodox.
- c. **Exhibit B.3** is a Cross-Section Locator Map outlining the Wolfcamp horizontal spacing unit being pooled that is the subject of this application; and referencing the location of Stratigraphic Cross Section A-A'. It identifies a line of cross-section, running from A to A', as well as the cross-section well names.
- d. **Exhibit B.4** is a Gross Interval Isopach Map of the Upper Wolfcamp (Top Wolfcamp to Wolfcamp A2.) It shows that the formation is relatively uniform across the proposed well unit. It also shows the location of cross-section A-A'.
- e. **Exhibit B.5** is a Stratigraphic Cross Section hung on the top of the Wolfcamp Fm. The well logs on the cross-section give a representative sample of the Upper Wolfcamp formation in the area. The target zones for the wells are the Wolfcamp Y Sand and Wolfcamp A Shale, and those zones are consistent across the unit. The planned well-paths for these wells are indicated by two blue dashed lines, and the letters 'LZ'.
- f. **Exhibit B.6** is a Cross-Section Locator Map outlining the Wolfcamp horizontal spacing unit being pooled that is the subject of this application; and referencing the location of Stratigraphic Cross Section B-B'. It identifies a line of cross-section, running from B to B', as well as the cross-section well names.
- g. **Exhibit B.7** is a Gross Interval Isopach Map of the Lower Wolfcamp (Top Wolfcamp C to Wolfcamp D5.) It shows that the formation is relatively uniform across the proposed well unit. It also shows the location of cross-section B-B'.
- h. **Exhibit B.8** is a Stratigraphic Cross Section hung on the top of the Wolfcamp 'C'. The well logs on the cross-section give a representative sample of the Lower Wolfcamp formation in the area. The target zones for the wells are the Wolfcamp 'C' Shale and Wolfcamp 'D' Shale, and those zones are consistent across the unit. The planned well-paths for these wells are indicated by two sets of blue dashed lines, and the letters 'LZ'.

5. Based upon my study as illustrated in these exhibits, my education and training, and my knowledge of the geology in this area, it is my expert opinion that:

- a. The horizontal spacing unit in this case is justified from a geologic standpoint.

b. There are no structural impediments or faulting that will interfere with the proposed horizontal development.

c. Each quarter quarter section in the unit will contribute more or less equally to production.

6. The preferred well orientation in this area is either north to south or east to west.

This is due to the fact that regional max horizontal stress orientation in this area runs approximately N45E.

7. The producing interval for each of the wells in this case will be orthodox and will comply with the Division's set back requirements.

8. Pursuant to Rule 1-011 NMRA (2019), I declare and affirm under penalty of perjury under the laws of the State of New Mexico that the foregoing statements are true and correct.

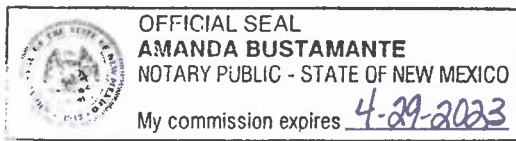
[Signature Page to Follow]

18544
Harrison Hastings

SUBSCRIBED AND SWORN to before me this 10th day of July 2019 by Harrison Hastings, on behalf of Cimarex Energy Co.

Amanda Bustamante
Notary Public

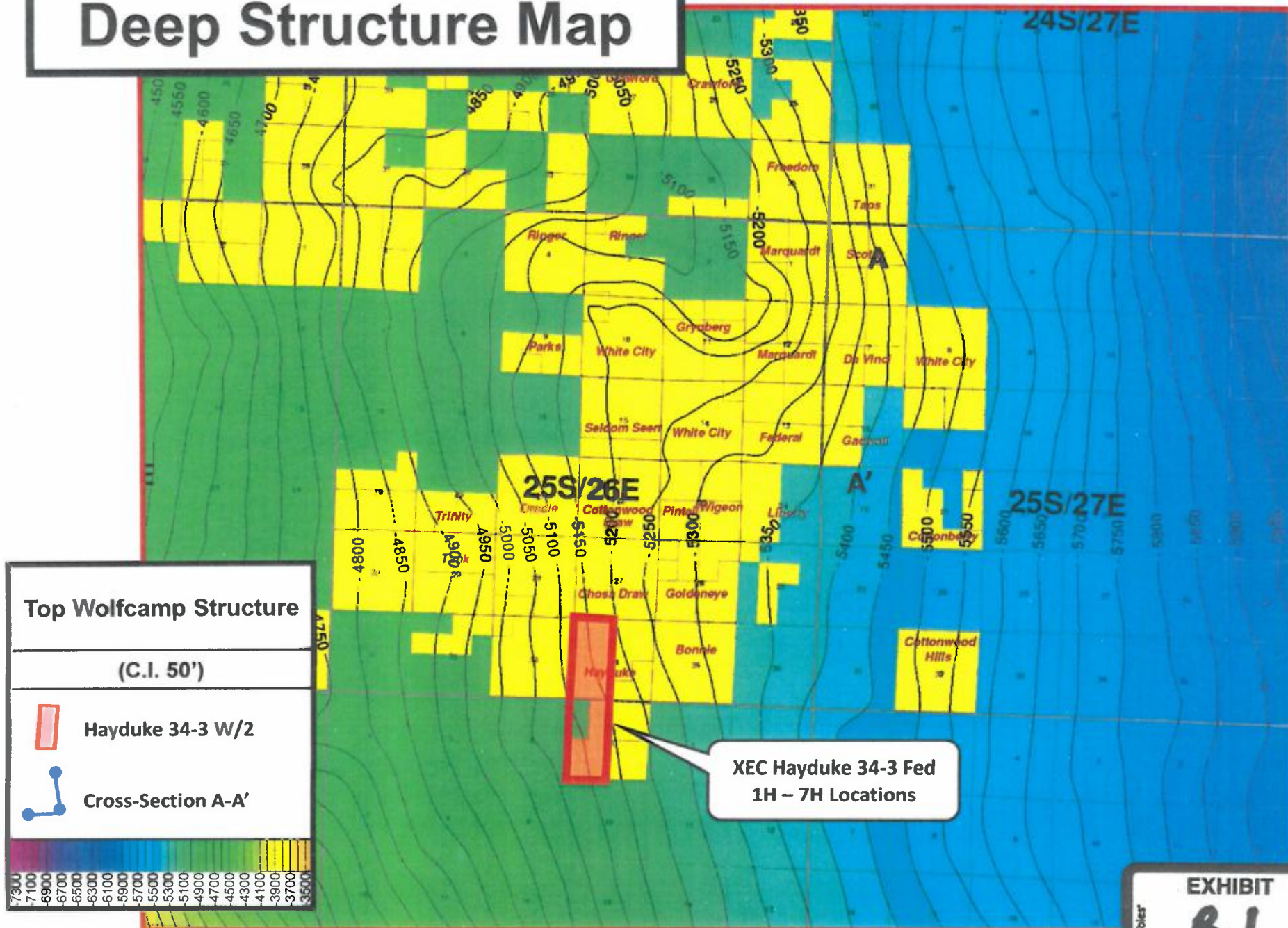
My commission expires: 4-29-2023



Hayduke 34-3 Fed 1H – 7H

Wolfcamp Fm. Geology Exhibits

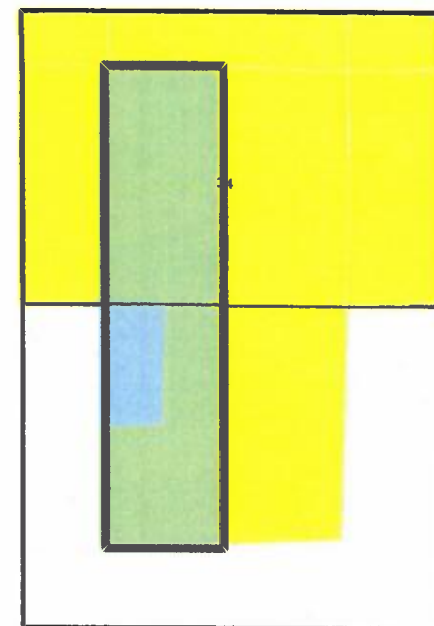
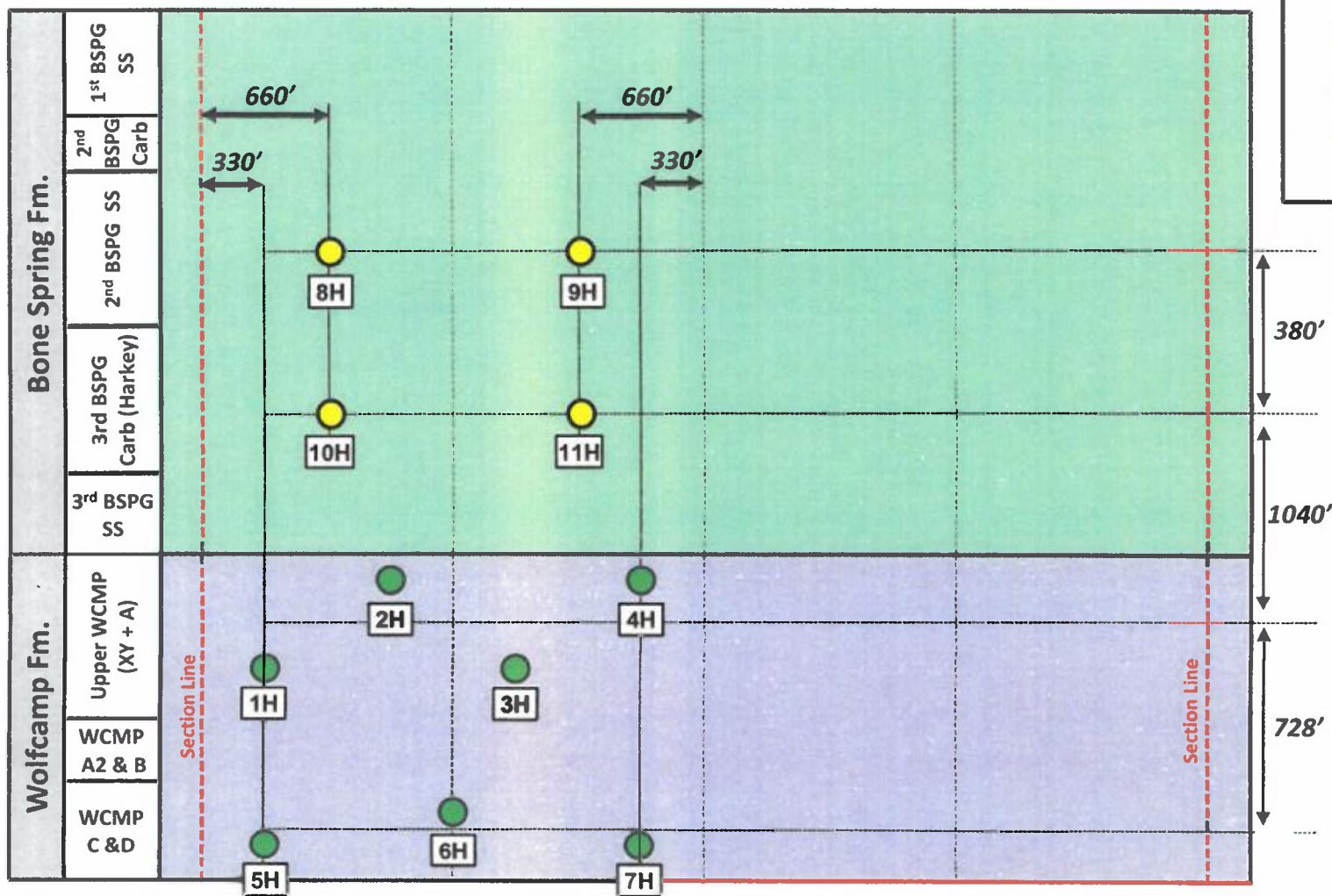
Deep Structure Map



XEC Hayduke 34-3 Fed 1H – 11H Winerack

Sec 34 - T25S/R26E & Sec 3 - T26S/26E

Eddy Co., NM



Hayduke 34-3 W/2

380'

1040'

728'

EXHIBIT

B.2

Upper Wolfcamp (1H-4H)

24S/27E



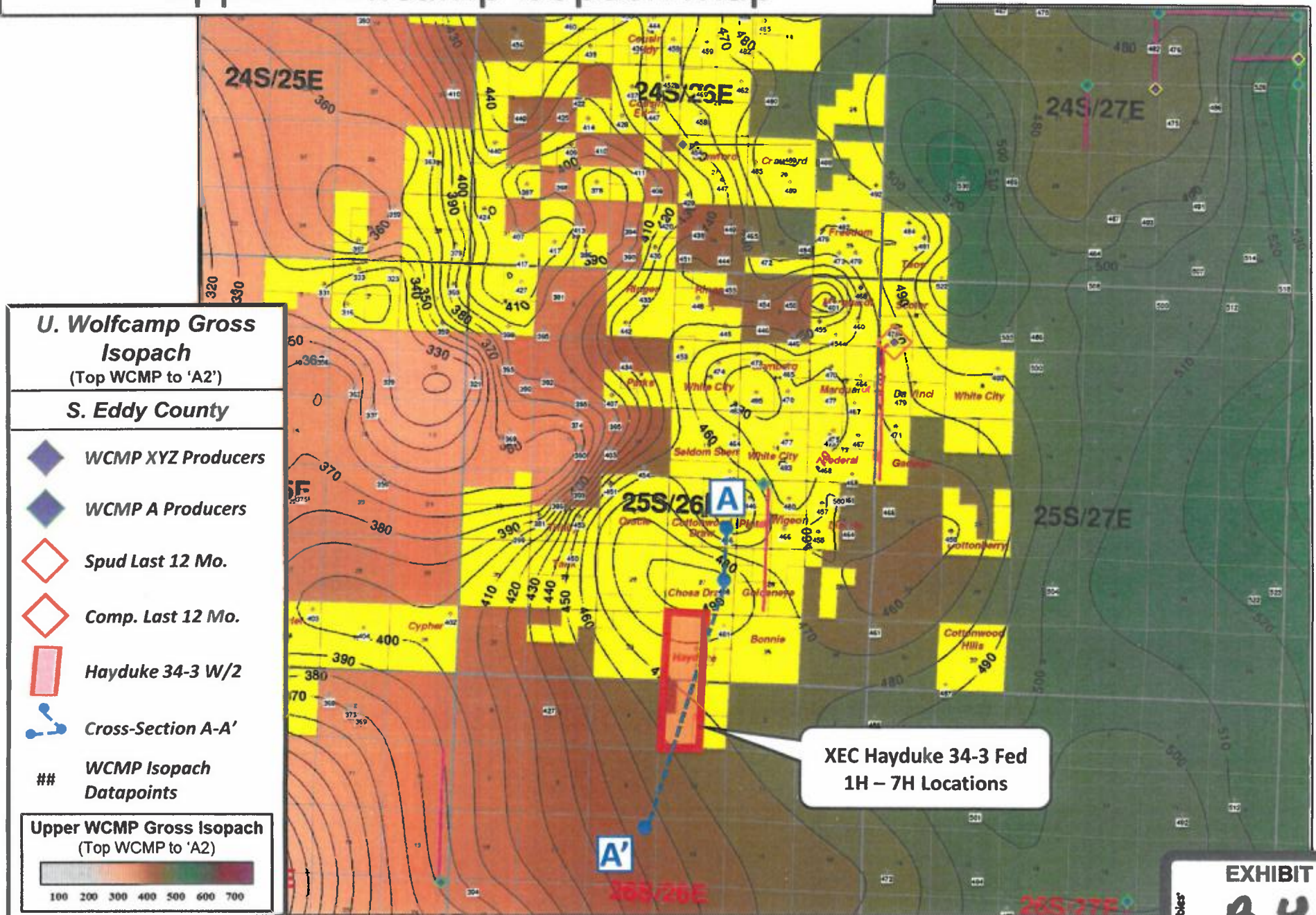
A'

EXHIBIT

B.3

1-800-828-8888

Upper Wolfcamp Isopach Map

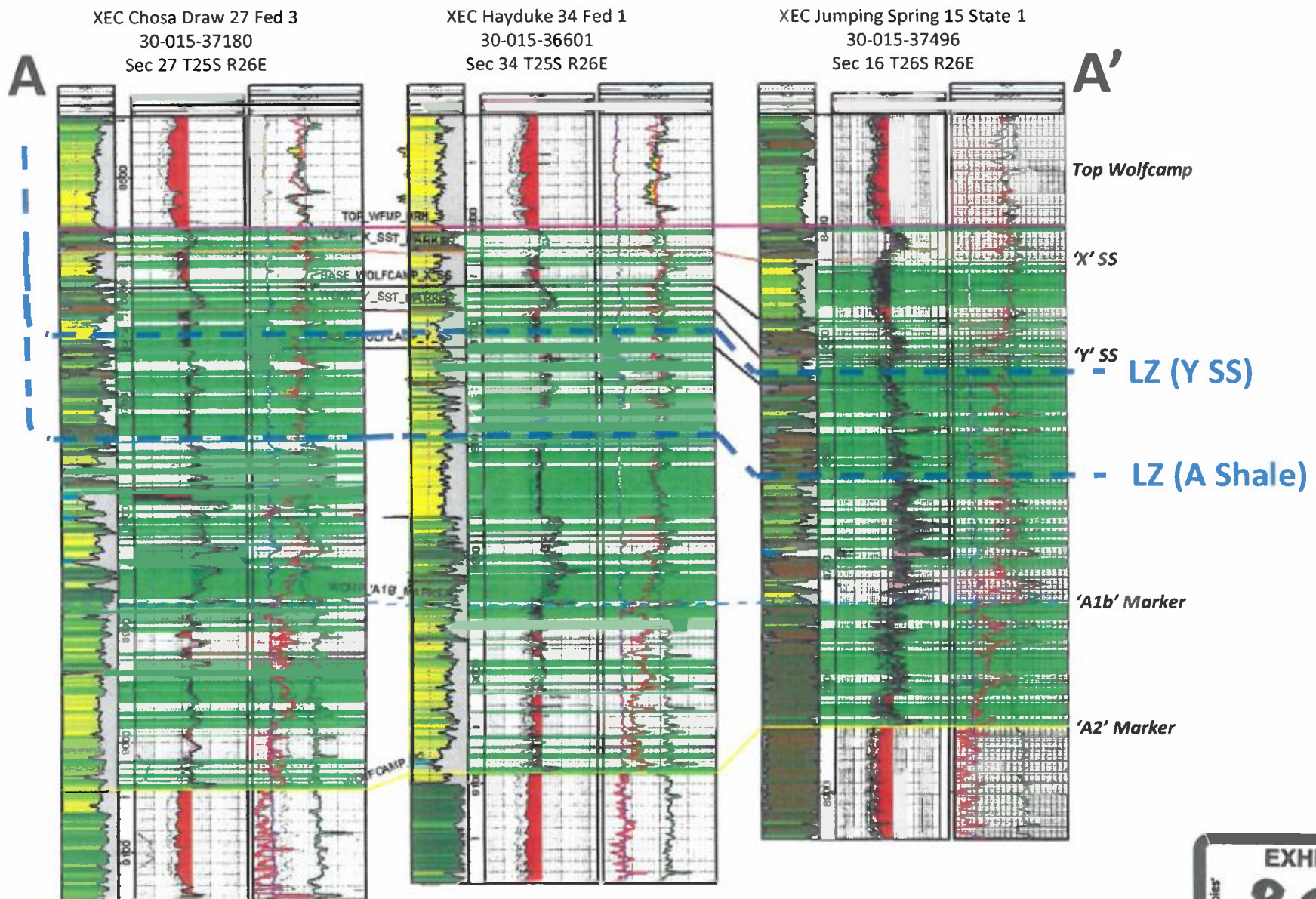


EXHIBIT

B.4

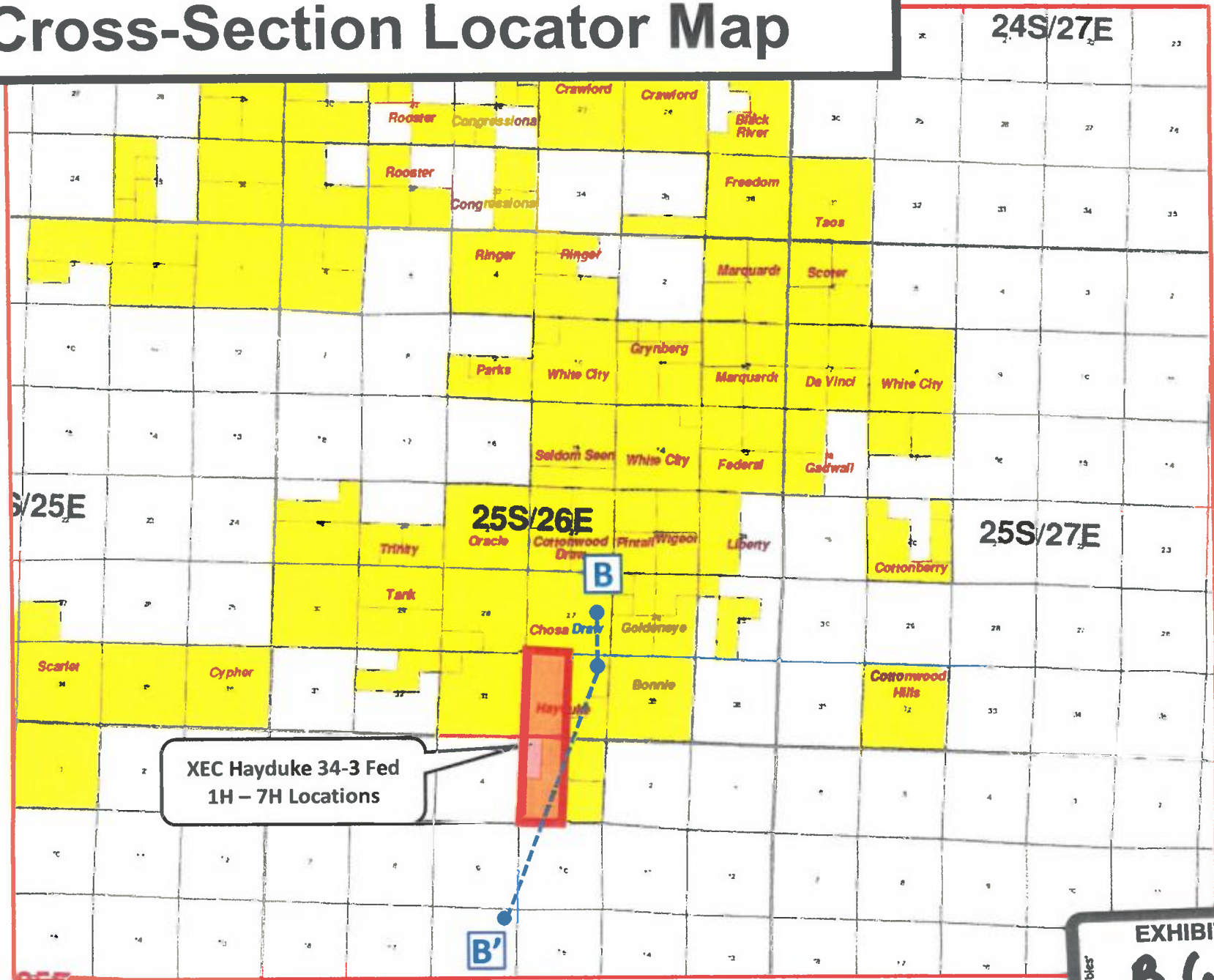
tabbles

Upper WCMP N-S Cross-Section A-A'



Lower Wolfcamp (5H-7H)

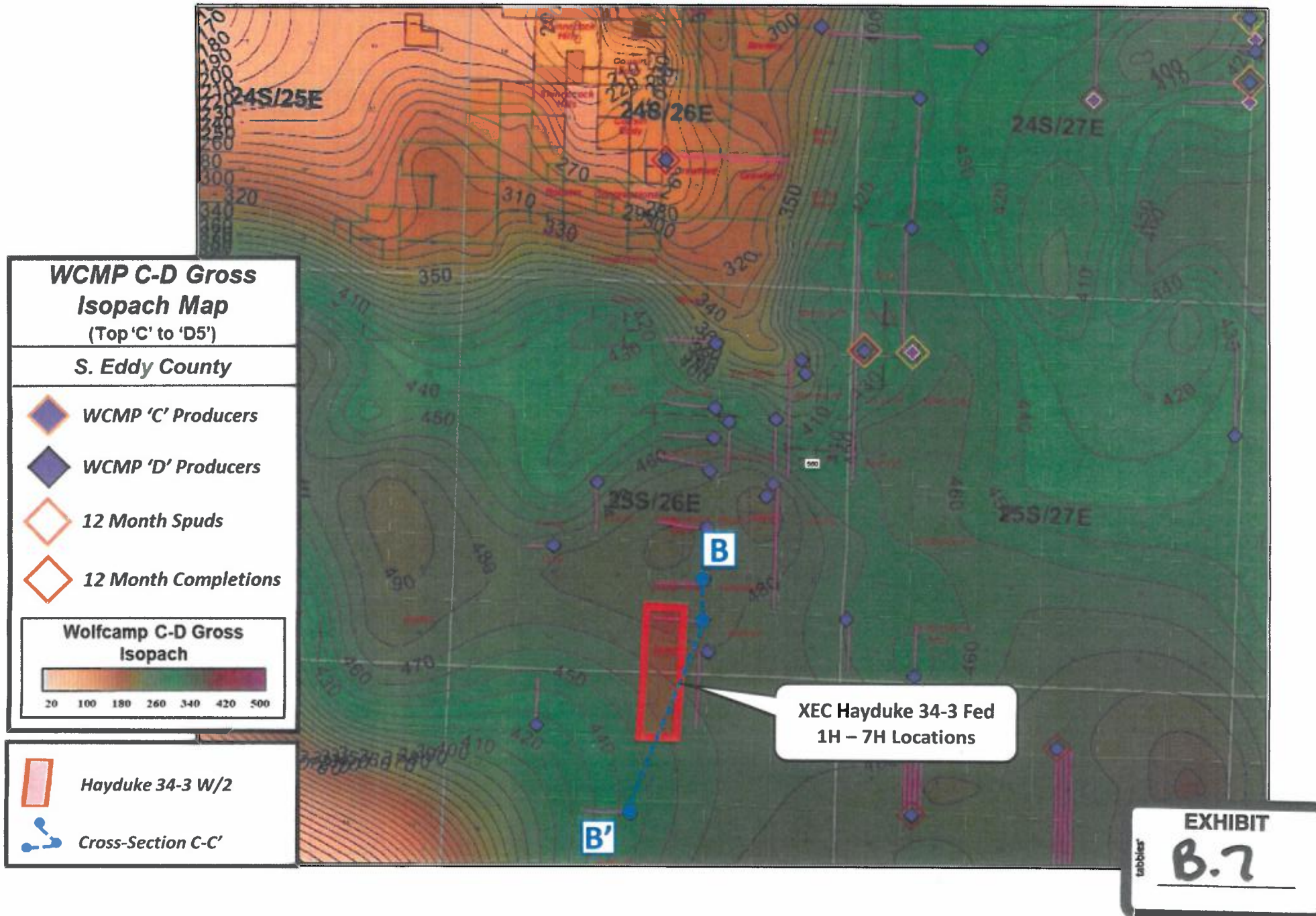
Cross-Section Locator Map



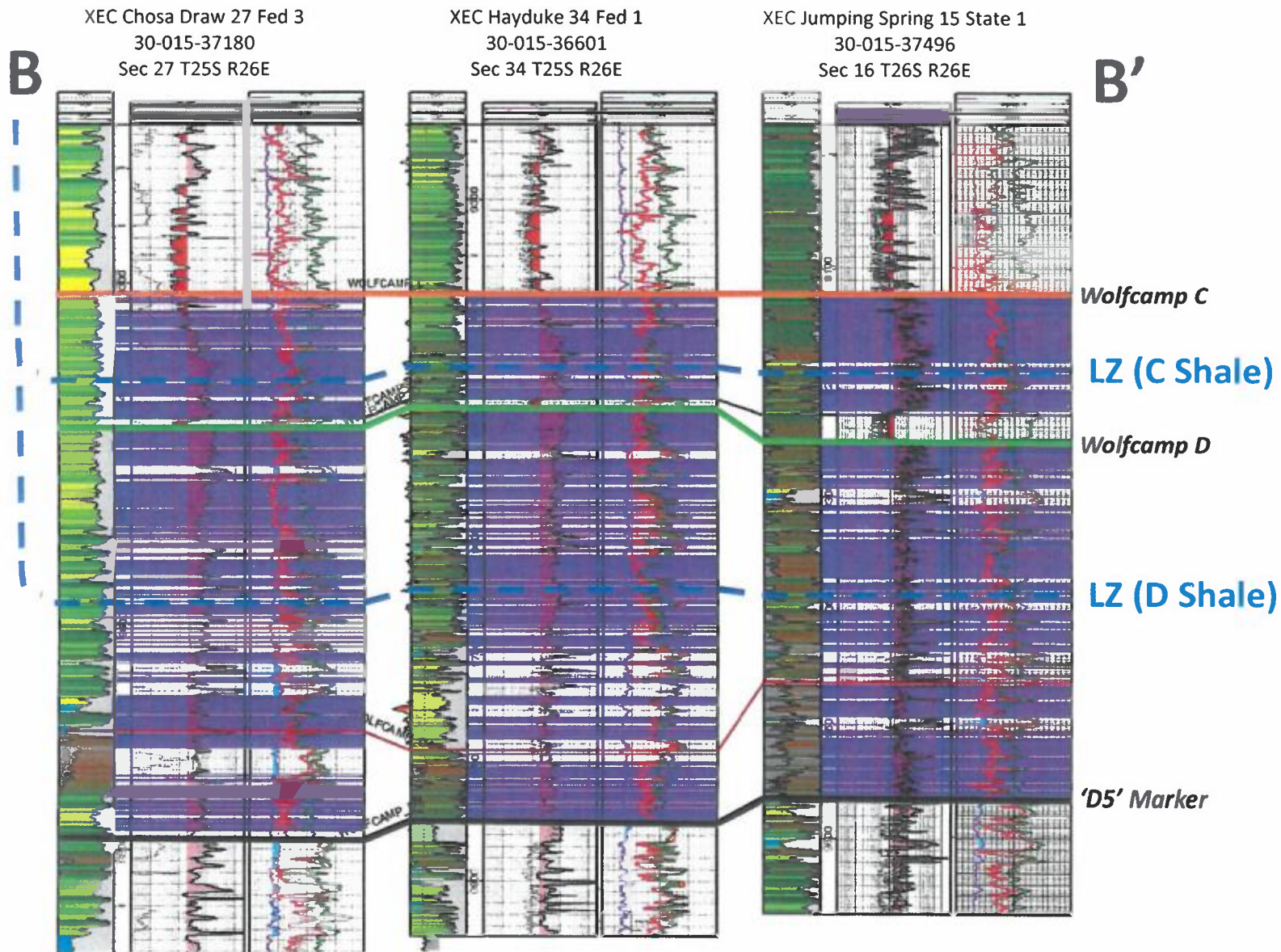
XEC Hayduke 34-3 Fed
1H - 7H Locations

EXHIBIT
B.6

Lower Wolfcamp Isopach Map



Lower Wolfcamp N-S Cross-Section B-B'



Hayduke 34-3 Fed 1H – 7H

Wolfcamp Fm. Geology Exhibits

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

**APPLICATION OF CIMAREX
ENERGY CO. FOR COMPULSORY
POOLING, EDDY COUNTY,
NEW MEXICO**

CASE NO. 20590

AFFIDAVIT

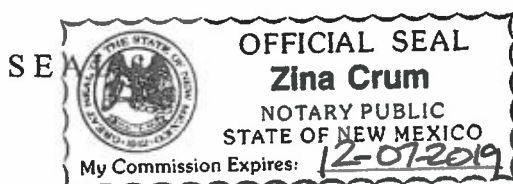
STATE OF NEW MEXICO)
)ss.
COUNTY OF BERNALILLO)

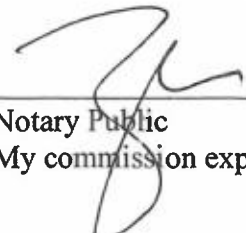
Lance D. Hough, attorney in fact and authorized representative of Cimarex Energy Co., the Applicant herein, being first duly sworn, upon oath, states that the above-referenced Application was provided under the notice letters, and that proof of mailing, receipts of mailings, and publication are attached hereto. After notice of the application was mailed to all previously identified interest holders, an additional potential overriding royalty interest holder was discovered and notice was mailed to his last known address on July 8, 2019. Cimarex Energy Co. has conducted a good faith, diligent effort to find the names and correct addresses for the interest owners entitled to receive notice of the application filed herein, and provide notice to each at their last known address.



Lance D. Hough

SUBSCRIBED AND SWORN to before me this 10 day of July 2019 by Lance D. Hough.





Notary Public
My commission expires: 12-07-2019



Zina Crum
Modrall Sperling
500 4th Street NW
Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED MAIL
06/21/2019



14-74
8H-
NO. 20590
NO 20591

Firm Mailing Book ID: 169626

Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
1	9314 8699 0430 0060 5098 20	Irwin E Vinnik & Reva Sandra Vinnik 5062 E Princeton Ave Englewood CO 80110	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
2	9314 8699 0430 0060 5098 37	Celeste C Grynberg 5000 S Quebec St., Ste 500 Denver CO 80237	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
3	9314 8699 0430 0060 5098 44	Robert N. Enfield, Trustee Robert N. Enfield Trust c/o Wells Fargo Bank PO Box 41779 Austin TX 78704	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
4	9314 8699 0430 0060 5098 51	Engfield-Coffield Family Revocable Trust PO Box 8028 Santa Fe NM 87504	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
5	9314 8699 0430 0060 5098 68	Howard A Rubin, Inc 623 1/2 Camino Rancheros Santa Fe NM 87505	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
6	9314 8699 0430 0060 5098 75	Jerune Allen 245 Nicklaus Drive SE Rio Rancho NM 87124	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
7	9314 8699 0430 0060 5098 82	Legacy Reserves Operating LP PO Box 10848 Midland TX 79702	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
8	9314 8699 0430 0060 5098 99	Chevron U.S.A. 6301 Deauville Blvd Midland TX 79706	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
9	9314 8699 0430 0060 5099 05	Mountain Lion Oil & Gas LLC 7941 Katy freeway #117 Houston TX 77024	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
10	9314 8699 0430 0060 5099 12	EOG Resources, Inc. P.O. Box 4362 Houston TX 77210	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
11	9314 8699 0430 0060 5099 29	Bryan Bell Family LLC c/o Frank Robert Janusa PO Box 24591 New Orleans LA 70184	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
12	9314 8699 0430 0060 5099 36	Rubie Crosby Bell Family LLC c/o Frank Robert Janusa PO Box 24591 New Orleans LA 70184	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
13	9314 8699 0430 0060 5099 43	The Estate of Jerune Allen John A Budagher Pers Rep 3500 Comanche Rd NE Bldg B Albuquerque NM 87107	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
14	9314 8699 0430 0060 5099 50	DMA, Inc 9 Ambleside Drive Belcair FL 33756	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice

Zina Crum
Modrall Sperling
500 4th Street NW
Suite 1000
Albuquerque NM 87102

PS Form 3877
Type of Mailing: **CERTIFIED MAIL**
06/21/2019



Firm Mailing Book ID: 169626

Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
15	9314 8699 0430 0060 5099 67	Charmar, LLC c/o Vikki H Smith 4815 Vista Del Oso Ct NE Albuquerque NM 87109	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
16	9314 8699 0430 0060 5099 74	Lisa M. Enfield, Trustee of Lisa M. Enfield Trust 405 Camino Manzano Santa Fe NM 87505	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
17	9314 8699 0430 0060 5099 81	MLE, LLC PO Box 1683 Santa Fe NM 87504	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
18	9314 8699 0430 0060 5099 98	Richard C. Deason 1301 N Havenhurst #217 West Hollywood CA 90046	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
19	9314 8699 0430 0060 5100 00	Ronald H. Mayer, Trustee of Ronald and Martha Mayer PO Box 2391 Roswell NM 88202	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
20	9314 8699 0430 0060 5100 17	SAP, LLC 4901 Whitney Lane Roswell NM 88203	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
21	9314 8699 0430 0060 5100 24	Barbara Carol Deason 2233 Rock Bridge Ct Yukon OK 73099	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
22	9314 8699 0430 0060 5100 31	Thomas D. Deason 3407 Essex Ave Lubbock TX 79407	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
23	9314 8699 0430 0060 5100 48	Oxy Y-1 Company 5 Greenway Plaza Houston TX 77046	\$1.30	\$3.50	\$1.60	\$0.00	82762-0128 Notice
Totals:			\$29.90	\$80.50	\$36.80	\$0.00	
Grand Total:						\$147.20	

List Number of Pieces
Listed by Sender

Total Number of Pieces
Received at Post Office

Postmaster:
Name of receiving employee

Dated:

23



Zina Crum
Modrall Sperling
500 4th Street NW
Suite 1000
Albuquerque NM 87102

PS Form 3877
Type of Mailing: CERTIFIED MAIL
06/21/2019



Firm Mailing Book ID: 169665

Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
1	9314 8699 0430 0060 5213 89	Macondo Fund IV, LLC P.O. Box 4216 Midland TX 79704	\$0.50	\$3.50	\$1.60	\$0.00	82762-0128
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			Grand Total:		\$5.60		

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Listed by Sender

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Postmaster:
Name of receiving employee

Dated:

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Transaction Report Details - CertifiedPro.net

Firm Mail Book ID: 169626

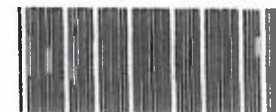
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9314869904300060510048	2019-06-21 10:13 AM	Oxy Y-1 Company		5 Greenway Plaza	Houston	TX	77046	Delivered	Return Receipt - Electronic, Certified Mail	06-25-2019
9314869904300060510031	2019-06-21 10:13 AM	Thomas D. Deason		3407 Essex Ave	Lubbock	TX	79407	Delivered	Return Receipt - Electronic, Certified Mail	06-26-2019
9314869904300060510024	2019-06-21 10:13 AM	Barbara Carol Deason		2233 Rock Bridge Ct	Yukon	OK	73099	Delivered	Return Receipt - Electronic, Certified Mail	06-25-2019
9314869904300060510017	2019-06-21 10:13 AM	SAP, LLC		4901 Whitney Lane	Roswell	NM	88203	Delivered	Return Receipt - Electronic, Certified Mail	06-29-2019
9314869904300060510000	2019-06-21 10:13 AM	Ronald H. Mayer, Trustee of	Ronald and Martha Mayer	PO Box 2391	Roswell	NM	88202	Delivered	Return Receipt - Electronic, Certified Mail	07-03-2019
9314869904300060509998	2019-06-21 10:13 AM	Richard C. Deason		1301 N Havenhurst #217	West Hollywood	CA	90046	Delivered	Return Receipt - Electronic, Certified Mail	06-24-2019
9314869904300060509981	2019-06-21 10:13 AM	MLE, LLC		PO Box 1683	Santa Fe	NM	87504	Delivered	Return Receipt - Electronic, Certified Mail	06-24-2019
9314869904300060509974	2019-06-21 10:13 AM	Lisa M. Enfield, Trustee of	Lisa M. Enfield Trust	405 Camino Manzano	Santa Fe	NM	87505	Delivered	Return Receipt - Electronic, Certified Mail	06-24-2019
9314869904300060509967	2019-06-21 10:13 AM	Charmar, LLC	c/o Vilki H Smith	4815 Vista Del Oso Ct NE	Albuquerque	NM	87109	Delivered	Return Receipt - Electronic, Certified Mail	06-22-2019
9314869904300060509950	2019-06-21 10:13 AM	DMA, Inc		9 Ambleside Drive	Bolton	FL	33756	Mailed	Return Receipt - Electronic, Certified Mail	
9314869904300060509943	2019-06-21 10:13 AM	The Estate of Jerune Allen	John A Budagher Pers Rep	3500 Comanche Rd NE Bldg B	Albuquerque	NM	87107	Delivered	Return Receipt - Electronic, Certified Mail	06-24-2019
9314869904300060509936	2019-06-21 10:13 AM	Rubie Crosby Bell Family LLC	c/o Frank Robert Janusa	PO Box 24591	New Orleans	LA	70184	Delivered	Return Receipt - Electronic, Certified Mail	06-27-2019
9314869904300060509929	2019-06-21 10:13 AM	Bryan Bell Family LLC	c/o Frank Robert Janusa	PO Box 24591	New Orleans	LA	70184	Delivered	Return Receipt - Electronic, Certified Mail	06-27-2019
9314869904300060509912	2019-06-21 10:13 AM	EOG Resources, Inc.		P.O. Box 4362	Houston	TX	77210	Delivered	Return Receipt - Electronic, Certified Mail	06-28-2019
9314869904300060509905	2019-06-21 10:13 AM	Mountain Lion Oil & Gas LLC		7941 Katy freeway #117	Houston	TX	77024	Delivered	Return Receipt - Electronic, Certified Mail	06-24-2019
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9314869904300060509882	2019-06-21 10:13 AM	Legacy Reserves Operating LP		PO Box 10848	Midland	TX	79702	Delivered	Return Receipt - Electronic, Certified Mail	06-26-2019
9314869904300060509875	2019-06-21 10:13 AM	Jerune Allen		245 Nicklaus Drive SE	Rio Rancho	NM	87124	Delivered	Return Receipt - Electronic, Certified Mail	07-05-2019
9314869904300060509868	2019-06-21 10:13 AM	Howard A Rubin, Inc		623 1/2 Camino Rancheros	Santa Fe	NM	87505	To be Returned	Return Receipt - Electronic, Certified Mail	
9314869904300060509851	2019-06-21 10:13 AM	Engfield-Coffield Family Revocable Trust		PO Box 8028	Santa Fe	NM	87504	Forwarded	Return Receipt - Electronic, Certified Mail	
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Zina Crum
Modrall Sperling
500 4th Street NW
Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED MAIL
07/08/2019



Firm Mailing Book ID: 170393

Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
1	9314 8699 0430 0060 9434 26	Jack J. Greenburg 1050 17th Street, Suite 1950 Denver CO 80265	\$1.30	\$3.50	\$1.60	\$0.00	82762-0183 Hayduke
Totals:			\$1.30	\$3.50	\$1.60	\$0.00	
			Grand Total:			\$6.40	

List Number of Pieces
Listed by Sender

Total Number of Pieces
Received at Post Office

Postmaster:
Name of receiving employee

Dated:

1



Recipient:
JAMES C. GRIFFIN
10-5 Fair Street, Suite 300
Durham, NC 27605

Sender:
 From: "Gordon, David" <dgordon@att.net>
 To: "David Gordon" <davidgordon@att.net>
 Subject: RE: [REDACTED]

Transaction created by: 20110004
User ID: 20110
Firm Mailing Book ID: 170294
Batch ID:

USPS Article Number: 954266804200000001002
Return Receipt Article Number: N/A (11/01/10)

Service Options:	Return Receipt - Electronic Certified Mail
Mail Service:	Certified
Reference #:	82762-0183 Hayduke
Postage:	\$1.30
Fees:	\$5.10
Status:	Mailed
Custom Field 1:	82762-0183 Hayduke
Custom Field 2:	82762-0183 Hayduke
Custom Field 3:	82762-0183 Hayduke

Event Description
 National Conference
 JSPS - Confidential
 USIA - Confidential
 JSPS - Confidential

Event Date
07-08-2019 11:23 AM
07-08-2019 03:10 PM
12-08-2019 09:01 PM
07-08-2019 09:10 PM

Details
[MAIL] - Firm Mailing Book 179393 generated by zinacrum
[USPS] - PRESHIPMENT INFO SENT USPS AWAITS ITEM at TEMECULA CA
[USPS] - PROCESSED THROUGH USPS FACILITY at ALBUQUERQUE,NM
[USPS] - DEPART USPS FACILITY at ALBUQUERQUE,NM

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Tracking Number: 9314869904300060943426

Remove X

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July 9, 2019
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CARLSBAD
CURRENT-ARGUS

AFFIDAVIT OF PUBLICATION

Ad No.
0001289788

MODRALL SPERLING ROEHL HARRIS & SISK
500 4TH ST NW STE 1000

ALBUQUERQUE NM 87102

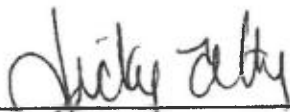
I, a legal clerk of the **Carlsbad Current-Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

06/27/19



Legal Clerk

Subscribed and sworn before me this
27th of June 2019.



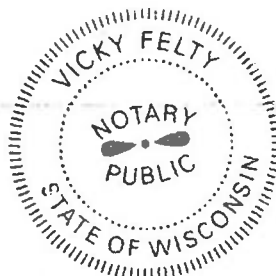
State of WI, County of Brown
NOTARY PUBLIC

9-19-21

My Commission Expires

CASE NO. 20590: Notice to all affected parties, as well as the heirs and devisees of, IRWIN E VINNIK AND REVEN SANDA VINNIK; CELESTEC GRYNBERG; ROBERT N. ENFIELD TRUSTEE ROBERT N. ENFIELD TRUST; ENGFIELD-COFFIELD FAMILY REVOCABLE TRUST; HOWARD A. RUBIN, INC.; JERUNE ALLEN; LEGACY RESERVES OPERATING LP; CHEVRON U.S.A.; MOUNTAIN LION OIL & GAS LLC; EOG RESOURCES INC.; BRYAN BELL FAMILY LLC; RUBIE CROSBY BELL FAMILY LLC; THE ESTATE OF JERUNE ALLEN; DMA, INC.; CHARMAR, LLC; LISAM. ENFIELD, TRUSTEES OF LISA M. ENFIELD TRUST; MLE, LLC; RICHARD C. DEASON; RONALD H. MAYER, TRUSTEES OF RONALD MARTHA MAYER; SAP, LLC; BARBARA CAROL DEASON; THOMAS D. DEASON OXY Y-1 COMPANY; and MACONDO FUND IV, LLC, of Cimarex Energy Co.'s application for approval of compulsory pooling, Eddy County, New Mexico. The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at **8:15 a.m. on July 11, 2019**. Applicant seeks an order from the Division: (1) to the extent necessary, approving the creation of a 640-acre, more or less, Wolfcamp horizontal spacing unit; and, (2) pooling all uncommitted mineral interests within a Wolfcamp horizontal spacing unit underlying the W/2 of Section 34, Township 25 South, Range 26 East, and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico. This spacing unit will be dedicated to the **Hayduke 34-3 Federal Com 1H, 2H, 3H, 4H, 5H, 6H, and 7H** wells, to be horizontally drilled. The producing area for these wells will be orthodox. Also to be considered will be the cost of drilling and completing said wells, the allocation of these costs as well as the actual operating costs and charges for supervision, designation of Cimarex as operator of the wells, and a 200% charge for risk involved in drilling said wells. Said area is located approximately 8.5 miles southeast of Whites City, New Mexico.

June 27, 2019



CARLSBAD
CURRENT-ARGUS

AFFIDAVIT OF PUBLICATION

Ad No.
0001289789

MODRALL SPERLING ROEHL HARRIS & SISK
500 4TH ST NW STE 1000

ALBUQUERQUE NM 87102

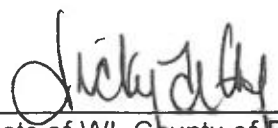
I, a legal clerk of the **Carlsbad Current-Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

06/27/19



Legal Clerk

Subscribed and sworn before me this
27th of June 2019.



State of WI, County of Brown
NOTARY PUBLIC



My Commission Expires

CASE NO. 20591: Notice to all affected parties, as well as the heirs and devisees of, IRWIN E VINNIK AND REVEN SANDA VINNIK; CELESTEC GRYNBERG; ROBERT N. ENFIELD TRUSTEE ROBERT N. ENFIELD TRUST; ENFIELD-COFFIELD FAMILY REVOCABLE TRUST; HOWARD A. RUBIN, INC.; JERUNE ALLEN; LEGACY RESERVES OPERATING LP; CHEVRON U.S.A.; MOUNTAIN LION OIL & GAS LLC; EOG RESOURCES INC.; BRYAN BELL FAMILY LLC; RUBIE CROSBY BELL FAMILY LLC; THE ESTATE OF JERUNE ALLEN; DMA, INC.; CHARMAR, LLC; LISA M. ENFIELD TRUSTEE OF LISA M. ENFIELD TRUST; MLE, LLC; RICHARD C. DEASON; RONALD H. MAYER, TRUSTEE OF RONALD MARTHA MAYER; SAP, LLC; BARBARA CAROL DEASON; THOMAS D. DEASON OXY Y-1 COMPANY; and MACONDO FUND IV, LLC, of Cimarex Energy Co.'s application for approval of compulsory pooling, Eddy County, New Mexico. The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at **8:15 a.m. on July 11, 2019. Applicant seeks an order from the Division: (1) to the extent necessary, approving the creation of a 640-acre, more or less, Bone Spring horizontal spacing unit; and, (2) pooling all uncommitted mineral interests within a Bone Spring horizontal spacing unit underlying the W/2 of Section 34, Township 25 South, Range 26 East, and W/2 of Section 3, Township 26 South, Range 26 East, NMPM, Eddy County, New Mexico. This spacing unit will be dedicated to the **Hayduke 34-3 Federal Com 8H, 9H, 10H, and 11H** wells, to be horizontally drilled. The producing area for these wells will be orthodox. Also to be considered will be the cost of drilling and completing said wells, the allocation of these costs as well as the actual operating costs and charges for supervision, designation of Cimarex as operator of the wells, and a 200% charge for risk involved in drilling said wells. Said area is located approximately 8.5 miles southeast of Whites City, New Mexico.**

June 27, 2019

