Before the Oil Conservation Division Examiner Hearing August 9, 2018

Case No. 16306 & 16307

Flowmaster Fee 24-34-15 WA 6H and Flowmaster Fee 24-34-15 WA 14H Flowmaster Fee 24-34-15 WXY 2H, Flowmaster Fee 24-34-15 WD 3H,



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

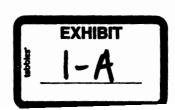
APPLICATION OF MARATHON
OIL PERMIAN LLC FOR APPROVAL
OF A NON-STANDARD SPACING
AND PRORATION UNIT,
NON-STANDARD LOCATIONS, AND
COMPULSORY POOLING,
LEA COUNTY, NEW MEXICO.

CASE NO.	

APPLICATION

Marathon Oil Permian LLC ("Marathon"), OGRID Number 372098, 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: (1) creating a 320-acre, more or less, spacing and proration unit covering the W/2 of Section 15, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico; (2) approving non-standard locations; and, (3) pooling all mineral interests in the Wolfcamp formation underlying the standard spacing and proration unit. In support of this application, Marathon states as follows:

- 1. Marathon is an interest owner in the subject lands and has a right to drill a well thereon.
- 2. Marathon seeks to dedicate the W/2 of Section 15, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico to the proposed wells to form a 320-acre, more or less, spacing and proration unit.



- 3. Marathon plans to drill the Flowmaster Fee 24-34-15 WXY 2H, Flowmaster Fee 24-34-15 WA 6H, and Flowmaster Fee 24-34-15 WA 14H wells within the proposed spacing unit to a depth sufficient to test the Wolfcamp formation. These wells will be horizontally drilled using the same drilling rig.
- 4. These wells will be located within the Antelope Ridge, Wolfcamp Pool (Pool Code 2220), which is oil pool that is subject to 330 foot setback requirements.
 - 5. Marathon is requesting the approval of non-standard locations for the wells.
- 6. The Flowmaster Fee 24-34-15 WXY 2H will have a first take point located at 200 feet from the South line and 1,318 feet from the West line of Section 15, and a last take point located at 200 feet from the North line and 1,323 feet from the West line of Section 15.
- 7. The Flowmaster Fee 24-34-15 WA 6H will have a first take point located at 200 feet from the North line and 330 feet from the West line of Section 15, and a last take point located at 200 feet from the South line and 330 feet from the West line of Section 15.
- 8. The Flowmaster Fee 24-34-15 WA 14H will have a first take point located at 200 feet from the South line and 2,315 feet from the West line of Section 15, and a last take point located at 200 feet from the North line and 2,317 feet from the West line of Section 15.
- 9. Marathon 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.
- 10. The creation of a non-standard spacing and proration unit, pooling of all interests, and the approval of non-standard locations within the Wolfcamp formation underlying the proposed spacing unit will prevent the drilling of unnecessary wells, prevent waste and protect correlative rights.

WHEREFORE, Marathon requests this application be set for hearing before an

Examiner of the Oil Conservation Division on July 12, 2018, and after notice and hearing as

required by law, the Division enter its order:

A. Creating a spacing and proration unit in the Wolfcamp formation

comprised of the W/2 of Section 15, Township 24 South, Range 34 East, NMPM, Lea County,

New Mexico;

B. Approving non-standard locations (as needed);

C. Pooling all mineral interests in the Wolfcamp formation underlying this

standard spacing and proration unit;

D. Designating Marathon as operator of this unit and the wells to be drilled

thereon;

E. Authorizing Marathon to recover its costs of drilling, equipping and

completing these wells;

F. Approving actual operating charges and costs charged for supervision,

together with a provision adjusting the rates pursuant to the COPAS accounting procedure; and

G. Setting a 200% charge for the risk involved in drilling and completing the

wells in the event a working interest owner elects not to participate in the wells.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS

& SISK, P.A.

By:

Jennifer Bradfute

Deana M. Bennett

3

Post Office Box 2168
500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

case No. _______: Application of Marathon Oil Permian LLC for approval of a non-standard spacing and proration unit, non-standard locations, and compulsory pooling, Lea County, New Mexico. Applicant seeks an order from the Division: (1) creating a standard 320-acre, more or less, spacing and proration unit in covering the W/2 of Section 15, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico; (2) approving non-standard locations; and, (3) pooling all mineral interests in the Wolfcamp formation underlying this proposed standard spacing and proration unit. This proposed standard spacing and proration unit will be the unit for the Flowmaster Fee 24-34-15 WXY 2H, Flowmaster Fee 24-34-15 WA 6H, and Flowmaster Fee 24-34-15 WA 14H wells, to be horizontally drilled. The producing areas for these wells will contain unorthodox locations. 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 Marathon as operator of the wells, and a 200% charge for risk involved in drilling said wells. Said area is located approximately 17 miles northwest of Jal, New Mexico.

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

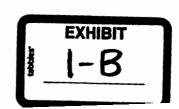
APPLICATION OF MARATHON
OIL PERMIAN LLC FOR APPROVAL
OF NON-STANDARD LOCATIONS AND
COMPULSORY POOLING,
LEA COUNTY, NEW MEXICO.

CASE NO.	
CASE NO.	

APPLICATION

Marathon Oil Permian LLC ("Marathon"), OGRID Number 372098, 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: (1) creating a 320-acre, more or less, spacing and proration unit covering the W/2 of Section 15, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico; (2) approving non-standard locations; and, (3) pooling all mineral interests in the Wolfcamp formation underlying the standard spacing and proration unit. In support of this application, Marathon states as follows:

- 1. Marathon is an interest owner in the subject lands and has a right to drill a well thereon.
- Marathon seeks to dedicate the W/2 of Section 15, Township 24 South, Range 34
 East, NMPM, Lea County, New Mexico to the proposed wells to form a 320-acre, more or less, spacing and proration unit.
- 3. Marathon plans to drill the Flowmaster Fee 24-34-15 WD 3H well within the proposed spacing unit to a depth sufficient to test the Wolfcamp formation. This well will be



located within the Fairview Mills; Wolfcamp Gas Pool (Pool Code 76560), which is gas pool that is subject to 660 foot setback requirements.

- 4. Marathon is requesting the approval of non-standard locations for the well.
- 5. The Flowmaster Fee 24-34-15 WD 3H will have a first take point located at 200 feet from the North line and 330' feet from the West line of Section 15, and a last take point located at 200 feet from the South line and 330 feet from the West line of Section 15.
- 6. Marathon 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 well or to otherwise commit their interests to the well.
- 7. The pooling of all interests and the approval of non-standard locations within the Wolfcamp formation underlying the proposed spacing unit will prevent the drilling of unnecessary wells, prevent waste and protect correlative rights.

WHEREFORE, Marathon requests this application be set for hearing before an Examiner of the Oil Conservation Division on July 12, 2018, and after notice and hearing as required by law, the Division enter its order:

- A. Creating a spacing and proration unit in the Wolfcamp formation comprised of the W/2 of Section 15, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico;
 - B. Approving non-standard locations (as needed);
- C. Pooling all mineral interests in the Wolfcamp formation underlying this standard spacing and proration unit;
- D. Designating Marathon as operator of this unit and the wells to be drilled thereon;

- E. Authorizing Marathon to recover its costs of drilling, equipping and completing these wells;
- F. Approving actual operating charges and costs charged for supervision, together with a provision adjusting the rates pursuant to the COPAS accounting procedure; and
- G. Setting a 200% charge for the risk involved in drilling and completing the wells in the event a working interest owner elects not to participate in the wells.

Respectfully submitted,

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

By: Ford F. DeBrine Ir

Jennifer Bradfute

Deana M. Bennett Post Office Box 2168

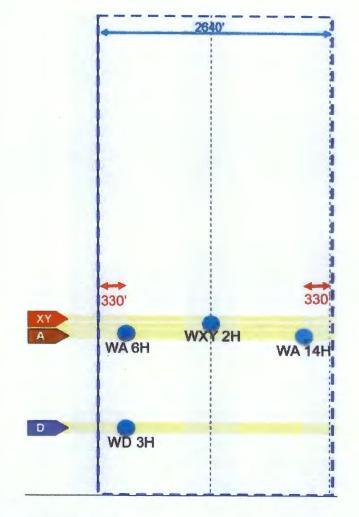
500 Fourth Street NW, Suite 1000

Albuquerque, New Mexico 87103-2168

Telephone: 505.848.1800 Attorneys for Applicant case No. _______: Application of Marathon Oil Permian LLC for approval of non-standard locations and compulsory pooling, Lea County, New Mexico. Applicant seeks an order from the Division: (1) creating a standard 320-acre, more or less, spacing and proration unit in covering the W/2 of Section 15, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico; (2) approving non-standard locations; and, (3) pooling all mineral interests in the Wolfcamp formation underlying this proposed standard spacing and proration unit. This proposed standard spacing and proration unit will be the unit for the Flowmaster Fee 24-34-15 WD 3H well, to be horizontally drilled. The producing areas for this well will contain unorthodox locations. Also to be considered will be the cost of drilling and completing said well, the allocation of these costs as well as the actual operating costs and charges for supervision, designation of Marathon as operator of the well, and a 200% charge for risk involved in drilling said well. Said area is located approximately 17 miles northwest of Jal, New Mexico.

Flowmaster Fee 24 34 15 Unit Development









District I 1625 N. French Dr., Hobbs, NM 88240 Phone: (575) 393-6161 Fax: (575) 393-0720 District II 811 S. First St., Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 District III 1000 Rio Bruzos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170 District IV 1220 S. St. Francis Dr., Santa Fc, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462

12 Dedicated Acres

320.00

Consolidation Code

13 Joint or Infill

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

Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

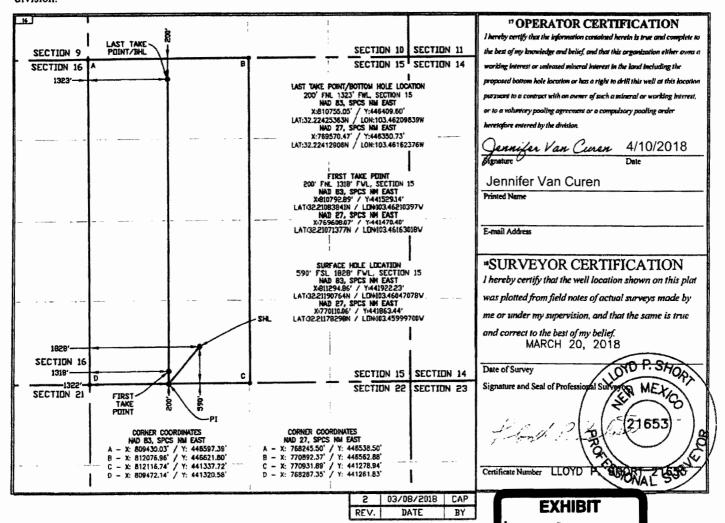
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

•	API Numbe	r		² Pool Code	1	³ Pool Name					
				2220		ANTELOPE RIDGE; WOLFCAMP					
⁴ Property Code ⁵ Property Name ⁶ W						Well Number					
			F	FLOWMA:	STER FEE	24-34-15 V	VXY			2H	
⁷ OGRID					⁸ Operator					Elevation	
3720	98			MARA	ATHON OIL	PERMIAN LLO	<u> </u>		3519'		
	» Surface Location										
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East	/West line	County	
N	15	245	34E		590	SOUTH	1828	WE:	ST	LEA	
	" Bottom Hole Location If Different From Surface										
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East	/West line	County	
С	15	245	34E		200	NORTH	1323	WE:	ST	LEA	

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

15 Order No.



District I
1625 N, French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV

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

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

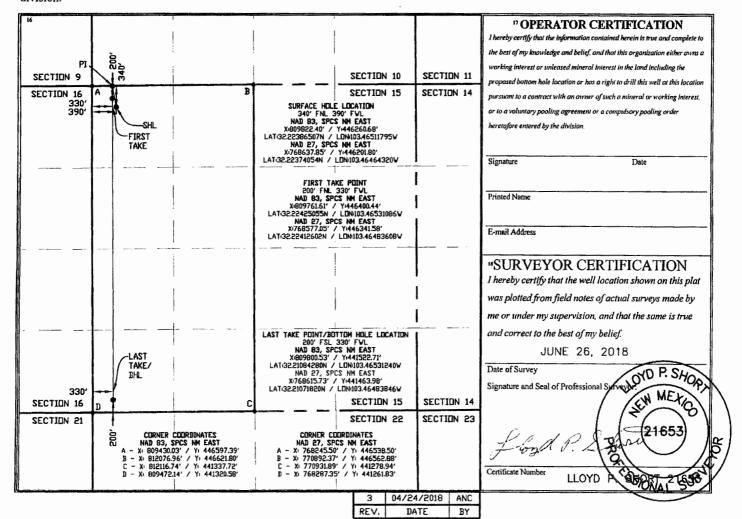
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WELL LOCATION AND ACREAGE DEDICATION PLAT

1 1/	API Numbe	er ² Pool Code			de	³ Pool Name					
				2220		ANTELOPE RIDGE; WOLFCAMP					- 1
⁴ Property C	ty Code SProperty Name SW						Well Number	r			
				FLOWM	ASTER FEE	24-34-15	WA			6H	[
⁷ OGRID N	lo.				8 Operator	Name				⁹ Elevation	
372098	В _			MARA	THON OIL	PERMIAN LLC				3523'	
	" Surface Location										
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East	/West line		County
D	15	T245	R34E		340	NORTH	390	WES	Τ	LEA	
			"Be	ottom Ho	ole Location I	f Different Fron	n Surface				
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East	/West line		County
М	15	T24S	R34E		200	SOUTH	330	WES	T	LEA	
12 Dedicated Acres	13 Joint of	r Infill	¹⁴ Consolidation	Code 15 O	rder No.						
320.00											

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WELL LOCATION AND ACREAGE DEDICATION PLAT

² Pool Code		Pool Name							
2220	ANTE	ANTELOPE RIDGE; WOLFCAMP							
	⁵ Property Name			Well Number					
FLOWMASTER FEE 24-34-15 WA 14H									
OGRID No. Operator Name									
372098 MARATHON OIL PERMIAN LLC									
¹⁰ Surface Location									
nship Range Let Idn	Feet from the North/South lin	e Feet from the	East/West line	County					
24S R34E	589 SOUTH	1918	WEST	LEA					
	2220 FLOWMAS MARA nship Range Lot Idn	2220 ANTE FLOWMASTER FEE 24-34-15 FORWASTER FEE 24-34-15	2220 ANTELOPE RIDGE FLOWMASTER FEE 24-34-15 WA FOR OPERATOR OF THE PROPERTY NAME MARATHON OIL PERMIAN LLC 10 Surface Location Inship Range Lot Idn Feet from the North/South line Feet from the	2220 ANTELOPE RIDGE; WOLFCAME FLOWMASTER FEE 24-34-15 WA FOPERATOR Name MARATHON OIL PERMIAN LLC Surface Location Inship Range Lot Idn Feet from the North/South line Feet from the East/West line					

" Bottom Hole Location If Different From Surface									
UL or let no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
С	15	T24S	R34E		200	NORTH	2317	WEST	LEA
12 Dedicated Acres	13 Joint of	r Infill 14	Consolidation	Code 15 Or	der No.				
320.00				ļ					

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

SECTION 9 A		L/LAST - '0	В	SECTION 10	SEC. 11	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location
SECTION 16	23	17'	330'	SECTION 15	SEC. 14	pursuant to a contract with an owner of such a mineral or working interest,
a a a a a a a a a a a a a a a a a a a				TAKE POINT/BOTTOM HOLE 100' FNL 2317' FWL, SECTIO NAD 83, SPCS NM EAST X:811748.48' / Y:446418. 2:22425653N / LON:103.45 NAD 27, SPCS NM EAST X:770553.87' / Y:446359.	N 15 76' 888592W	or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature Date
			LATES	2.22413202N / LON:103.45		Printed Name
				71831 1902 FUND 200' FSL 2315' FWL, SECTIC NAD 83, SPCS NM EAS' X:811785.24' / Y:441535. 12.21083394N / LON:103.45 NAD 27, SPCS NM EAST	58' 889555W	E-mail Address
			LAT: 3	X:770600.39' / Y:441476. 12:21070928N / LON:103.45	83'	"SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by
+	· · · · · · · · · · · · · · · · · · ·			SURFACE HOLE LOCATION 589' FSL 1918' FWL, SECTION NAD 83, SPCS NM EAS' X:811385.06' / Y:441921.	N 15	me or under my supervision, and that the same is true and correct to the best of my belief.
	1918'—	SHL		52.21190496N / LON:103.46 NAD 27, SPCS NM EAS' X:770200.26' / Y:441863. 52.21178030N / LON:103.45	19'	JUNE 26, 2018 Date of Survey Signature and Seal of Professional Survey OVD P. SHOP
SECTION 16	2311'		POINT 330'	SECTION 15	SEC. 14	Signature and Seal of Professional Surveyor MEXIO
SECTION 21 D	CORNER COOR NAD 83, SPCS A — X: 809430.03', B — X: 81207c.96', C — X: 812116.74', D — X: 809472.14'	NM EAST / Y: 446597.39' / Y: 446621.80' / Y: 441337.72'	NAD A - X: 76 B - X: 77 C - X: 77	SECTION 22 INER COORDINATES 27, SPCS NM EAST 3245.50' / Y: 44653.50' 0992.37' / Y: 446562.88' 19931.89' / Y: 441261.83' 287.35' / Y: 441261.83'	SEC. 23	Certificate Number LLOYD A STRONG 2 6.58
				2 04/23/2 REV. DATE		

District.1
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District.IV
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Phone: (505) 476-3460 Fax: (505) 476-3462

1 API Number

245

⁴ Consolidation Code

Joint or Infili

¹² Dedicated Acres 320.00

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

Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

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LEA

3 Pool Name

330

WEST

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 Pool Code

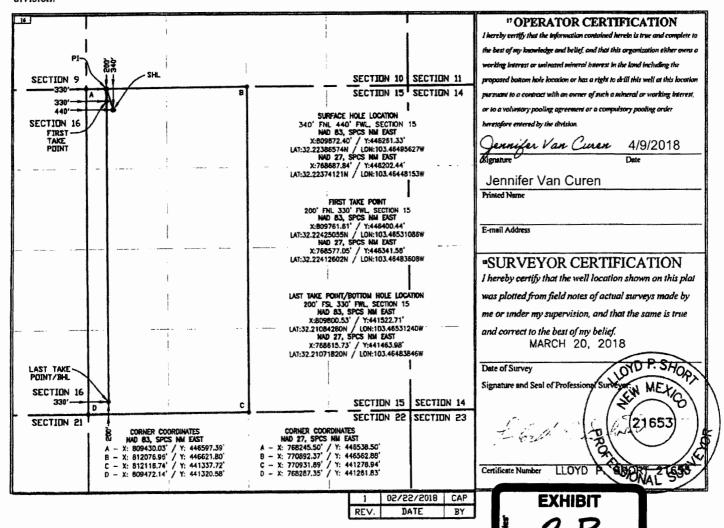
				76560		FAIRVIE	V MILLS; W	OLFCAMP	(GAS)	
⁴ Property	⁴ Property Code ⁵ Property Name								Weil Number	
			F	LOWMAS	STER FEE	24-34-15 W	/D		3H	
	OGRID No. Operator Name MARATHON OIL PERMIAN LLC								*Elevation 3523	
.,					* Surface I	ocation				
UL or lot no.	Section	Township	Range	Lot Jdn	Feet from the	North/South line	Feet from the	East/West li	ne County	
D	15	245	34E		340	NORTH	440	WEST	LEA	
	•	•	" Bot	tom Hole	Location If	Different From	Surface			
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West li	ne County	

SOUTH

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

200

Order No.



Lease Tract Map

Flowmaster Fee 24-34-15 WXY 2H, Flowmaster Fee 24-34-15 WD 3H, Flowmaster Fee 24-34-15 WA 6H and Flowmaster Fee 24-34-15 WA 14H

W/2 of Section 15, 24S-34E - 320 acres

Tract 1: Fee Acreage 10 9 Tract 1 16 24S 34E 23 22 Marathon Oil

Summary of Interests

Flowmaster Fee 24-34-15 WXY 2H, Flowmaster Fee 24-34-15 WD 3H, Flowmaster Fee 24-34-15 WA 6H and Flowmaster Fee 24-34-15 WA 14H

Committed Working Interest: Marathon Oil Permian LLC Chevron USA, Inc. MRC Permian LKE, Co.	65.416997% 28.226563% 0.7812500%	94.424810%
Uncommitted Working Interest: Tap Rock Resources, LLC	5.325190%	5.325190%
Unleased Mineral Interest: West Texas A&M University Ohio State University	0.125000% 0.125000%	0.250000%



Ryan Gyllenband Land Professional



Marathon Oil Permian LLC

5555 San Felipe Street Houston, TX 77056 Telephone: 713.296.2453 Mobile: 281.684.7389 Fax: 713.513.4006 mrgyllenband@marathonoil.com

April 20, 2018

VIA CERTIFIED RETURN RECEIPT MAIL

West Texas A&M University c/o The Texas A&M University System – Office of General Counsel Attn: J.L. Burke Estate 301 Tarrow Street, 6th Floor College Station, TX 77840-7896

Re: Flowmaster Fee 2H, 3H, 6H & 14H Well Proposals

Section 15, T24S-R34E Lea County, New Mexico

Dear West Texas A&M University:

Marathon Oil Permian LLC ("Marathon") shows you with 0.40 unleased net mineral acres in the W/2 of Section 15, 24S-34E. As an unleased mineral owner, Marathon would like to offer you the opportunity to lease your minerals to Marathon at the below lease terms:

- •
- •
- •

This offer to lease terminates May 25, 2018 and is subject to due diligence and title verification satisfactory to Marathon. Should you be agreeable to this offer to lease, please sign the lease form included in this proposal in the presence of a notary and return to my attention at the address listed above.

Marathon proposes the drilling of the following wells located in the W/2 of Section 15, 24S-34E, Lea County, New Mexico to be drilled from 2 different surface pad locations. Should you not elect to lease, Marathon would also like to offer you the opportunity to participate in the drilling of the wells as a working interest owner.

- Flowmaster Fee 24 34 15 WXY 2H with a proposed first take point located 200' FSL and 1,318' FWL of Section 15, 24S-34E, and a proposed last take point located 200' FNL and 1,323' FWL of Section 15, 24S-34E. The well will have a targeted interval located in the Wolfcamp Formation (~12,302' TVD) with a productive lateral length of approximately 4,620'. The total estimated drilling and completion cost is \$7,371,853 as shown in the attached AFE.
- Flowmaster Fee 24 34 15 WD 3H with a proposed first take point located 200' FNL and 330' FWL of Section 15, 24S-34E, and a proposed last take point located 200' FSL and 330' FWL of Section 15, 24S-34E. The well will have a targeted interval located in the Wolfcamp Formation (~13,344' TVD) with a productive lateral length of approximately 4,621'. The total estimated drilling and completion cost is \$7,452,203 as shown in the attached AFE.
- Flowmaster Fee 24 34 15 WA 6H with a proposed first take point located 200' FNL and 330' FWL of Section 15, 24S-34E, and a proposed last take point located 200' FSL and 330' FWL of Section 15, 24S-34E. The well will have a targeted interval located in the Wolfcamp Formation (~12,499' TVD) with a productive lateral length of approximately 4,621'. The total estimated drilling and completion cost is \$7,397,123 as shown in the attached AFE.



• Flowmaster Fee 24 34 15 WA 14H with a proposed first take point located 200' FSL and 2,315' FWL of Section 15, 24S-34E, and a proposed last take point located 200' FNL and 2,317' FWL of Section 15, 24S-34E. The well will have a targeted interval located in the Wolfcamp Formation (~12,483' TVD) with a productive lateral length of approximately 4,623'. The total estimated drilling and completion cost is \$7,372,933 as shown in the attached AFE.

These proposed locations and target depths are subject to change depending on any surface or subsurface concerns encountered. The AFEs represent an estimate of the costs that will be incurred to drill and complete the wells, but those electing to participate in the wells are responsible for their proportionate share of the actual costs incurred.

MRO proposes drilling the well under the terms of the 1989 AAPL JOA and a form of this JOA will be sent to you following this proposal. The JOA will have these general provisions:

- 100%/300%/300% non-consent penalty
- \$7,000/\$700 drilling and producing rates
- Contract area of W/2 Section 15, 24S-34E, covering all depths

Your estimated WI would be 0.125%.

If your election is to participate in the drilling and completion of the wells please sign and return a copy of this letter along with the enclosed AFE within thirty (30) days of receipt of this proposal.

Should you have any questions regarding this or other matters, please don't hesitate to contact me at the above listed numbers.

Sincerely,

Ryan Gyllenband

Flowmaster Fee 2H, 3H, 6H & 14H

	elects to participate in the drilling, completing, and equipping of the Flowmaster Fee 24 34 15 WXY 2H well. elects NOT to participate in the drilling, completing, and equipping of the Flowmaster
	Fee 24 34 15 WXY 2H well.
	elects to participate in the drilling, completing, and equipping of the Flowmaster Fee 24 34 15 WD 3H well.
	elects NOT to participate in the drilling, completing, and equipping of the Flowmaster Fee 24 34 15 WD 3H well.
	elects to participate in the drilling, completing, and equipping of the Flowmaster Fee 24 34 15 WA 6H well.
	elects NOT to participate in the drilling, completing, and equipping of the Flowmaster Fee 24 34 15 WA 6H well.
	elects to participate in the drilling, completing, and equipping of the Flowmaster Fee 24 34 15 WA 14H well.
	elects NOT to participate in the drilling, completing, and equipping of the Flowmaster Fee 24 34 15 WA 14H well.
	West Texas A&M University
Ву:	
Print Name:	
Title:	



AUTHORITY FOR EXPENDITURE EXPLORATION & PRODUCTION

Drilling Project #
Pad Project #
DATE: 1/0/1900

Permian Asset Te	am								
Field	0	Location 24, 34, 15	Rig 0						
Lease / Facility	Flowmaster Fee 24 34 15 WXY 2H		NEW MEXICO						
Operator	MARATHON OIL PERMIAN LLC		County/Parish LEA Estimated Start Date 28-Mar-2019						
		Estimated Start Date Estimated Completion Date							
Entimated	Gross Cost This AFE: \$7,371,853	•	20-741-2013						
Estimated	GIOSS COST THIS AFE. \$1,371,000								
Project Description	on & Reason for Expenditure:	Drill, Complete, & Equip a Horizontal Well							
testing, comple will include inst The well will be	eting, and equipping the well is \$7,37 callation of transitional and long term e drilled to a total vertical depth of 12	ith mullistage fracturing using plug and perf. The 71,853 as detailed in the provided authority for exp artificial lift systems. 2,302' and a total measured depth of 17,183', with an estimated 30 stages and approximately 2500 lb	penditure document. This nan estimated treatable						
Prepared By:	, JACOB BEATY, JOHN HASHMAN, MATT HENS	CHEN, TOMMY MAZAL/BILLY MOORE, ,							
The Regional Vice President Permian Asset Team									
	P	'articipant's Approval							
	Name of Company:								
	Signature:								
	Title:	Date:							

EXHIBIT 5-A

MARATHON OIL PERMIAN LLC AUTHORITY FOR EXPENDITURE DETAIL OF ESTIMATED WELL COSTS DATE 1/0/1900
DRILLING & LOCATION PREPARED BY JACOB BEATY
COMPLETION PREPARED BY JOHN HASHMAN
FACILITIES PREPARED BY MATT HENSCHEN
ARTIFICIAL LIFT PREPARED BY TOMMY MAZAL/BILLY F

Asset Team Field	PERMIAN 0 FORMATION: WOLFCAMP XY WILDCAT	EXPLORATION
Lease/Facility	Flowmaster Fee 24 34 15 WXY 2H DEVELOPMENT	RECOMPLETION
Location	LEA COUNTY X EXPLOITATION	WORKOVER
Prospect	RED HILLS	
Est Total Depth	17,183 Est Drilling Days 17183 Est Completion Days	5.5
LOCATION COST -	INTANGIBLE	
GL CODE	DESCRIPTION	ESTIMATED COST
7001270	Location and Access	33,750
7001250	Land Broker Fees and Services	37,500
	TOTAL LOCATION COST - INTANGIBLE	71,250
	-	
DRILLING COST - T	A NORF	
DAILLING COST - I	ANGULE	
7012050	Conductor Pipe	28,000
7012050	Surface Casing	40,000
7012050	intermediate Casing 1	147,000
7012050	Intermediate Casing 2	271,000
7012050	Production Casing	60,000
7012050	Drig Liner Hanger, Tleback Eq & Csg Accessories	55,000
7012550	Drilling Wellhead Equipment	70,000
7012040	Casing & Tubing Access	24,000
7012270	Miscelianeous MRO Materials	24,000
	TOTAL DRILLING - TANGIBLE	695,000
	_	733,000
ROCK TWENTERSHOOMS THAT PRINT		
DRILLING COST - II	NTANGIBLE	
7019200	Drilling Rig Mob/Demob	32,500
7019220	Drilling Rig - day work/tootage	531,563
7019040	Directional Drilling Services	195,500
7019020	Cement and Cementing Service Surface	15,000
7019020	Cement and Cementing Service Intermediate 1	25,000
7019020	Cement and Cementing Service Intermediate 2	60,000
7019020	Cement and Cementing Service Production	45,000
7019140	Mud Fluids & Services	82,000
7012310	Salids Control equipment	41,000
7012020	Bits	70,000
7019010	Casing Crew and Services	30,000
7016350	Fuel (Rig)	73,000
7019140	Fuel (Mud)	18,000
7001460	Water (non potable)	25,000
7019000	Well Logging Services	-
7019150	Mud Logging+geosteering	19,000
7019250	Stabilizers, Hole Openers, Underreamers (DH rentals)	15,000
7019110	Cesing inspection/cleaning	15,000
7019110	Drill pipe/collar inspection services	10,000
7016180	Freight - truck	25,000
7001460	Water hauling and disposal (includes soil farming)	135,000
7001440	Vacuum Trucks	20,000
7000030	Contract Labor - general	30,000
7018150	Rental Tools and Equipment (surface rentals)	94,500
7018150	Rig Equipment and Misc.	7,088
7001110	Telecommunications Services	10,000
7001120	Consulting Services	134,663
7001400	Safety and Environmental	10,000
7018120	Rental Buildings (trailers)	-
7019310	Coring (sidewalls & analysis)	
7011010	8% Contingency & Taxes	197,105
	TOTAL DRILLING - INTANGIBLE	\$1,965,918
	-	72,503,745
	TOTAL DRILLING COST	\$2,660,918
COMPLETION - TAN	IGIBLE	
7012580	Tubing	50,000
7012040	Tubing Accessories (nipple, wireline entry)	5,000
7012550	Wellhead Equip	5,000
7012560	Packers - Completion Equipment	37,000
	TOTAL COMPLETION - TANGIBLE	\$97,000

MARATHON OIL PER AUTHORITY FOR EXP	THE PARTY CLE	DATE 1/0/1900
DETAIL OF ESTIMATE		
Asset Team	PERMIAN	
Field	0 FORMATION: WOLFCAMP XY	
Lease/Facility	Flowmaster Fee 24 34 15 WXY 2H	
COMPLETION - IN	TANGIBLE	
	DESCRIPTION	ESTIMATED COST
GL CODE 7001270	Location and Access (dress location after rig move, set anchors)	5,000
7019220	Drilling Rig During Completion	35,000
7019140	Mud Fluids & Services	
7019030	Coiled Tubing Services (3 runs)	120,000
7019240 7019270	Snubbling Services Pulling/Swab Units	
7016350	Fuel (from drig)	
7019010	Casing Crew and Services	
7019020	Cement and Cementing Services	
7019080	Well Testing Services (flow hand & equip) Fracturing Services	2,300,000
7019320 7019330	Perforating	175,000
7019360	Wireline Services	10,000
7001460	Water Hauling & Disposal (frac fluids)	200,000
7016180	Freight - Truck (haul pipe; drig & compl)	10,000
7018150 7018150	BOP Rental & Testing Rental Tools and Equipment (Incl drig; lightplant, hydra-walk)	:
7018150	CT Downhole Rental Equipment (ie. Bit, BHA)	
7000030	Contract Labor - general	25,000
7001110	Telecommunications Services	90,000
7001400 7001120	Safety and Environmental Consulting Services	40,000
7018150	Zipper Manifold	110,000
7019300	Frack Stack Rentals	40,000
7016190	Freight (Transportation Services) Equipment Rental (w/o operator, frac tanks, lightplants)	65,000
7018150 7018120	Rental Buildings (trailers)	15,000
7000030	Contract Labor - Pumping (pump-down pumps)	15,000
7011010	8% Contingency & Taxes	274,200
	TOTAL COMPLETION - INTANGIBLE	\$3,654,200
	TOTAL CONTRACTOR ATTACAGE	43,034,240
and the same of th	TOTAL COMPLETION COST	\$3,751,200
	TOTAL CONTILLION COST	73,731,200
SURFACE EQUIPM	IENT - TANGIBLE	
3013350	Adica Malan Citation & Value	86 365
7012350 7006640	Misc. Piping, Fittings & Valves Company Labor & Burden	86,765
7000030	Contract Labor - General	69,528
7001110	Telecommunication equip (Telemetry)	
7012410	Une Pipe & Accessories	27,078
7012270 7008060	Miscellaneous Materials (containment system) SCADA	43,047
7016180	Freight - truck	-
7001190	Contract Engineering	29,116
7012290	Metering and instrumentation	250,831
7012290	I&E Materials	
7012200 7012200	Ges Treating Dehydration	
7012010	Compressor	•
7012350	Power	
7012610 7012440	Vapor Recovery Unit	
7012500	Separator & other pressure vessels Tanks	77,572 142,674
7012100	Heater Treater	12,997
7012640	Flare & Accessories	17,469
7000010 7000010	Electrical Labor Mechanical Labor	29,116
7012480	Rod Pumping unit & Pad	
7012180	Pumping Unit Engine	
7012350	Electrical Power (electrical cooperative construction costs)	23,293
	TOTAL SURFACE EQUIPMENT - TANGIBLE	\$809,485
-		
	TOTAL SURFACE EQUIPMENT COST	\$ 809,485
ARTIFICIAL LIFT		
7006640	Company Labor	3,000
7012180	Gas Uft Equipment	23,000
7012480	Rod Pumping, Sucker Rods & Rod Pump	
7012140 7019350	Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services	22,500
7012270	Materials & Supplies-Tangible	25,000
7012550	Surface Wellhead Equipment	3,000
7012390	Pig Launchers/Receivers & Rei Equip	
7011010	8% Contingency & Taxes	2,500
	TOTAL ARTIFICIAL LIFT	79,000
Company and Access		The second second second second second
	TOTAL ARTIFICIAL LIFT COST	\$ 79,000
	SUMMARY OF ESTIMATED DRILLING WELL COSTS	TOTAL COST
		. 51AC C031
	TOTAL LOCATION COST	\$ 71,250
	TOTAL DRILLING COST	\$ 2,660,918
	TOTAL COMPLETIONS COST	\$ 3,751,200
	TOTAL SURFACE EQUIPMENT COST	\$ 809,485
	TOTAL ARTIFICIAL LIFT COST	\$ 79,000
	GRAND TOTAL COST	\$7,371,853



Drilling Project #
Pad Project #
DATE: 1/0/1900

Permian Asset To	eam					
Field	0		Ĺ	ocation 24, 34, 15	Rig	NR6
Lease / Facility	Flowmaster Fee 24 34 15 W/				NEW MEXICO	
Operator	MARATHON OIL PERMIAN I	LC		County/Parish		
			E-	Estimated Start Date timated Completion Date		
Estimated	Gross Cost This AFE: \$7,	397 123	E	umated Completion Date	31-3811-1800	
		007,120				
Project Descript	ion & Reason for Expenditure:	Drill, Co	mplete, & Equip a Hor	izontal Well		_
testing, compli will include ins The well will b	anned to be drilled and comp eting, and equipping the well tallation of transitional and lo e drilled to a total vertical dep of 4,621' and will be complete	is \$7,397,123 as ing term artificial i oth of 12,499' and	detailed in the pro lift systems. I a total measured	ovided authority for exp depth of 17,320', with	penditure document an estimated treat	t. This
Prepared By:	JACOB BEATY, JOHN MASHMAN, N	VATT HENSCHEN, TOMM	AY MAZALABILLY MOORE,			, , , , , , , , , , , , , , , , , , ,
Tibe: Regio	Final Approval		1/18/18			
		Participan	nt's Approval			
	Name of Company:					
	Signature:					
	Title:		D	ate:		

EXHIBIT

5-B

MARATHON OIL PERMIAN LLC AUTHORITY FOR EXPENDITURE DETAIL OF ESTIMATED WELL COSTS

DATE	1/0/1900
DRILLING & LOCATION PREPARED BY	JACOB BEATY
COMPLETION PREPARED BY	JOHN HASHMAN
FACILITIES PREPARED BY	MATT HENSCHEN
ASTICICIAL LIST DREDADED BY	TOMBO MAZAL /BILLY

	AMITTALLETTICALLE	TOTAL MALAGORILA
Asset Team	PERMIAN	
Field	0 FORMATION: WOLFCAMP A WILDCAT	EXPLORATION
Lease/Facility	Flowmaster Fee 24 34 15 WA 6HDEVELOPMENT	RECOMPLETION
Location	LEA COUNTY X EXPLOITATION	WORKOVER
Prospect	RED HILLS	
Est Total Depth	17,320 Est Drilling Days 17320 Est Completion Days	5.5
LOCATION COST -	INTANCIDIE	**************************************
LOCATION COST -	INTANGIBLE	
GL CODE	DESCRIPTION	ESTIMATED COST
7001270	Location and Access	45,000
7001250	Land Broker Fees and Services	50,000
	TOTAL LOCATION COST - INTANGIBLE	95,000
Description of the last test to the last test test test test test test test t		
DRILLING COST - T	ANGIBLE	
7012050	Conductor Pipe	28,000
7012050	Surface Casing	40,000
7012050	Intermediate Casing 1	147,000
7012050	Intermediate Casing 2	271,000
7012050	Production Casing	61,000
		55,000
7012050	Drig Liner Hanger, Tleback Eq & Csg Accessories	
7012550	Drilling Wellhead Equipment	70,000
7012040	Casing & Tubing Access	24,000
7012270	Miscellaneous MRO Materials	
	TOTAL DRILLING - TANGIBLE	696,000
		A.V. (10.74
DRILLING COST - II	YTANGIBLE	
7019200	Drilling Rig Mob/Demob	43,333
7019220	Orilling Rig - day work/footage	540,000
7019040	Directional Drilling Services	195,500
7019020	Cement and Cementing Service Surface	15,000
7019020		25,000
7019020	Cement and Cementing Service Intermediate 2	60,000
7019020	Cement and Cementing Service Production	45,000
7019140	Mud Fluids & Services	82,000
7012310	Solids Control equipment	41,000
7012020	Bits	70,000
7019010	Casing Crew and Services	30,000
7016350	Fuel (Rig)	74,000
7019140	Fuel (Mud)	18,000
7001460	Water (non potable)	25,000
7019000	Well Logging Services	
7019150	Mud Logging+geosteering	19,000
7019250	Stabilizers, Hole Openers, Underreamers (DH rentals)	15,000
7019110	Casing inspection/cleaning	15,000
7019110	Drill pipe/collar inspection services	10,000
7016180	Freight - truck	25,000
7001460	Water hauling and disposal (includes soil farming)	135,000
7001440	Vacuum Tradis	20,000
7000030	Contract Labor - general	30,000
7018150	Rental Tools and Equipment (surface rentals)	96,000
7018150	Rig Equipment and Misc.	7,200
7001110	Telecommunications Services	10,000
7001120	Consulting Services	136,800
7001400	Safety and Environmental	
		10,000
7018120	Rental Buildings (trailers)	-
7019310	Coring (sidewalls & analysis)	<u>.</u>
7011010	B% Contingency & Taxes	199,107
	_	
	TOTAL DRILLING - INTANGIBLE	\$1,991,940
	TOTAL DRILLING COST	62 507 040
	TOTAL PARELING COST	\$2,687,940
COMPLETION - TAI	NGIBLE	
7012580	Tubing	50,000
7012040	Tubing Accessories (nipple, wireline entry)	5,000
7012550	Wellhead Equip	5,000
7012560	Packers - Completion Equipment	37,000
	TOTAL COMPLETION - TANGIBLE	\$97,000
		40.100

Asset Team PERMIAN

d se/Facility	0 FORMATION: WOLFCAMP A	
se/ Facility	Flowmaster Fee 24 34 15 WA 6H	
	FIGWRIANTE TEE 44 34 13 WA OR	
MPLETION - IN	TANGIBLE	
GL CODE	DESCRIPTION	ESTIMATED COS
7001270	Location and Access (dress location after rig move, set anchors)	5,0
7019220	Drilling Rig During Completion	35,0
7019140	Mud Fluids & Services	
7019030	Colled Tubing Services (3 runs)	120,0
7019240	Snubbing Services	
7019270	Pulling/Swab Units	
7016350	Fuel (from drig) Casing Crew and Services	
7019010 7019020	Cement and Cementing Services	
7019080	Well Testing Services (flow hand & equip)	125,0
7019320	Fracturing Services	2,300,0
7019330	Perforeting	175,
7019360	Wireline Services	10,
7001460	Water Hauling & Disposal (frac fluids)	200,
7016180	Freight - Truck (hauf pipe; drig & compl)	10,
7018150	BOP Rental & Testing	
7018150	Rental Tools and Equipment (Incl drig; lightplant, hydra-walk)	
7018150	CT Downhole Rental Equipment (le. Bit, BHA)	
7000030	Contract Labor - general	25,
7001110	Telecommunications Services	90,
7001400 7001120	Safety and Environmental Consulting Services	40,
7018150	Zipper Manifold	110,
7019300	Freck Stack Rentals	40,
7016190	Freight (Transportation Services)	
7018150	Equipment Rental (w/o operator, frac tanks, lightplants)	65,
7018120	Rental Buildings (trailers)	15,
7000030	Contract Labor - Pumping (pump-down pumps)	15,
7011010	8% Contingency & Taxes	274,
	TOTAL COMPLETION - INTANGIBLE	\$3,654
	TOTAL COMPLETION COST	\$3,751,2
RFACE EQUIPM	MENT - TANGIBLE	
7012350	Misc. Piping, Fittings & Valves	85,
7006640	Company Labor & Burden	
7000030	Contract Labor - General	67,
7001110	Telecommunication equip (Telemetry)	
7012410	Une Pipe & Accessories	27,
7012270	Miscellaneous Materials (containment system)	43,
7008060	SCADA	
7016180	Freight - truck	
7001190	Contract Engineering	29,
		227
7012290	Metering and Instrumentation	237,
7012290 7012290	I&E Materials	237,
7012290 7012290 7012200	IBE Materials Gas Treating	237,
7012290 7012290 7012200 7012200	I&E Materials Gas Treating Dehydration	237,
7012290 7012290 7012200 7012200 7012010	IBE Materials Gas Treating	237,
7012290 7012290 7012200 7012200	ISE Materials Gas Treating Dehydration Compressor	237,
7012290 7012290 7012200 7012200 7012010 7012350	I&E Materials Gas Treating Dehydration Compressor Power	
7012290 7012290 7012200 7012200 7012010 7012350 7012610	ISE Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit	66,
7012290 7012290 7012200 7012200 7012010 7012350 7012610 7012440	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels	66, 144,
7012290 7012290 7012200 7012200 701200 7012010 7012350 7012610 7012440 7012500	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks	66, 144, 17,
7012290 7012290 7012290 7012200 7012200 7012350 7012610 7012540 7012500 7012100 7012640 7000010	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor	66, 144, 17,
7012290 7012290 7012290 7012200 7012200 7012200 7012350 7012610 7012540 7012500 7012100 7012640 7000010 7000010	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories	66, 144, 17,
7012290 7012290 7012200 7012200 7012200 7012010 7012350 7012410 7012500 7012100 7012640 7000010 7000010 7000010 7012480	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad	66, 144, 17,
7012290 7012290 7012200 7012200 7012200 7012210 7012410 7012440 7012500 7012100 7012640 7000010 7000010 7000010 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit & Rad Pumping Unit Rigine	66, 144, 17, 11, 29,
7012290 7012290 7012200 7012200 7012200 7012200 7012210 7012410 7012500 7012100 7012640 700010 7000010 7000010 7012480	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad	66, 144, 17, 11, 29,
7012290 7012290 7012200 7012200 7012200 7012210 7012410 7012440 7012500 7012100 7012640 7000010 7000010 7000010 7012480 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit & Rad Pumping Unit Rigine	66, 144, 17, 11, 29, 23,
7012290 7012290 7012200 7012200 7012200 7012210 7012410 7012440 7012500 7012100 7012640 7000010 7000010 7000010 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit & End Electrical Power (electrical cooperative construction costs)	66, 144, 17, 11, 29, 23,
7012290 7012290 7012200 7012200 7012200 7012210 7012410 7012440 7012500 7012100 7012640 7000010 7000010 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit & End Electrical Power (electrical cooperative construction costs)	66, 144, 17, 11, 29,
7012290 7012290 7012200 7012200 7012200 7012210 7012410 7012440 7012500 7012100 7012640 7000010 7000010 7000010 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE	66, 144, 117, 11, 29, 23, \$781,
7012290 7012290 7012290 7012200 7012200 7012200 7012250 7012610 7012440 7012500 7012100 7012640 7000010 7000010 7012480 7012180 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE	66, 144, 117, 11, 29, 23, \$781,
7012290 7012290 7012290 7012200 7012200 7012010 7012350 7012610 7012500 7012500 7012640 7012640 7012640 7012500 7012640 7012500 7012640 7012500 7012650 7012500 7012500 7012500 7012500 7012500	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT COST	66, 144, 17, 11, 29, 23, 5783, 5783, 9
7012290 7012290 7012290 7012200 7012200 7012200 7012201 7012610 7012500 7012500 7012500 7012100 7012640 7000010 7000010 7000010 7012480 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST	66, 144, 17, 11, 29, 23, \$783,9
7012290 7012290 7012290 7012200 7012200 7012201 7012255 7012610 7012440 7012500 7012640 7000010 7000010 7000010 7012480 7012180 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST	66, 144, 17, 11, 29, 23, \$783,9
7012290 7012290 7012290 7012200 7012200 7012200 7012255 7012610 7012240 7012250 7012100 7012540 7012100 7012640 7000010 7000010 7000010 7000010 7012480 7012180 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST	66, 144, 17, 11, 29, 23, \$783,9
7012290 7012290 7012290 7012200 7012200 7012201 7012250 7012240 7012240 7012240 7012240 701240 701240 701240 701240 701240 701250 7012100 7012100 7012180 7012180 7012180 7012180 7012180 7012180 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump	66, 144, 17, 11, 29, 23, \$783,9
7012290 7012290 7012290 7012200 7012200 7012200 7012210 7012210 7012250 7012610 7012250 7012100 7012250 7012100 7012250 7012100 7012250 7012100 700010 7000010 7000010 7000010 7012480 7012180 7012180 7012180 7012180 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible	\$ 783,9
7012290 7012290 7012290 7012200 7012200 7012201 7012201 7012255 7012610 7012500 7012500 7012500 7012100 7012500 7012100 7000010 7000010 7000010 7012480 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas titl Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services	\$ 783,9
7012290 7012290 7012290 7012200 7012200 7012201 7012250 7012240 7012240 7012250 70122100 7012260 7012100 7012640 7000010 7012640 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible	\$ 783,9
7012290 7012290 7012290 7012200 7012200 7012200 7012200 7012255 7012610 7012250 7012100 7012250 7012100 7012250 7012100 7012250 7012100 7000010 7000010 7000010 7000010 7012480 7012280 7012280 7012280 7012280 7012280 7012280 7012270 7012550	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas tilt Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhaed Services Materials & Supplies-Tangible Surface Wellhaed Equipment	\$ 783,9 \$ 22, \$ 23, \$ 24, \$ 24, \$ 3, \$ 24, \$ 3,
7012290 7012290 7012290 7012200 7012200 7012200 7012201 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Libbor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes	\$ 783,9 \$ 23, \$ 783,9 22, \$ 23, \$ 23, \$ 23, 22, 23, 23,
7012290 7012290 7012290 7012200 7012200 7012200 7012200 7012350 7012610 7012500 7012500 7012100 7012500 7012100 7010010 7000010 7000010 700010 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Mechanical Labor Mechanical Labor Solution Electrical Cooperative Construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Receivers & Rel Equip	\$ 783,9 \$ 23, \$ 783,9 22, \$ 23, \$ 23, \$ 23, 22, 23, 23,
7012290 7012290 7012290 7012200 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Libbor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes	\$ 783,9 \$ 23, \$ 23, \$ 783,9 \$ 783,9
7012290 7012290 7012290 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping unit & Pad Pumping unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhad Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT	\$ 783,9 \$ 23, \$ 23, \$ 783,9 \$ 783,9
7012290 7012290 7012290 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Yapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas tilt Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhad Services Materials & Supplies-Tangible Surface Wellhadd Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT COST	\$ 783,9
7012290 7012290 7012290 7012200 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping unit & Pad Pumping unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhad Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT	\$ 783,9
7012290 7012290 7012290 7012200 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Yapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas tilt Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhad Services Materials & Supplies-Tangible Surface Wellhadd Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT COST	\$ 783,9 \$ 783,9 \$ 783,9 \$ 783,0 \$ 783,0 \$ 783,0 \$ 783,0 \$ 79,0
7012290 7012290 7012290 7012200 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping unit & Pad Pumping unit ingine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas tift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Racelvers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT COST SUMMARY OF ESTIMATED DRILLING WELL COSTS	\$ 783,9 \$ 783,9 \$ 783,9 \$ 783,9 \$ 783,9 \$ 783,9 \$ 783,9
7012290 7012290 7012290 7012200 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Libor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhaed Services Materials Supplies-Tangible Surface Wellhaed Equipment Pig Launchers/Racelvers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT TOTAL ARTIFICIAL LIFT COST SUMMARY OF ESTIMATED DRILLING WELL COSTS TOTAL LOCATION COST TOTAL DRILLING COST	\$ 79,0 TOTAL COST \$ 95,0 \$ 2,687,9
7012290 7012290 7012290 7012200 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Mechanical Labor Mechanical Subor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Weil Services-Weil/Weilhead Services Materials & Supplies-Tangible Surface Welthard Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT COST SUMMARY OF ESTIMATED DRILLING WELL COSTS TOTAL DRILLING COST TOTAL DRILLING COST TOTAL DRILLING COST	\$ 79,0 TOTAL COST \$ 95,0 \$ 3,751,2i
7012290 7012290 7012290 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas tith Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Esunchers/Receivers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT TOTAL ARTIFICIAL LIFT COST SUMMARY OF ESTIMATED DRILLING WELL COSTS TOTAL LOCATION COST TOTAL COMPLETIONS COST TOTAL SURFACE EQUIPMENT COST	\$ 783,9: \$ 783,9: \$ 783,9: \$ 783,9: \$ 79,0: TOTAL COST \$ 95,0: \$ 2,687,9: \$ 3,751,2: \$ 783,9:
7012290 7012290 7012290 7012200 7012200 7012200 7012350 7012610 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012180 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350 7012350	I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Mechanical Labor Mechanical Subor Rod Pumping Unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Weil Services-Weil/Weilhead Services Materials & Supplies-Tangible Surface Welthard Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT COST SUMMARY OF ESTIMATED DRILLING WELL COSTS TOTAL DRILLING COST TOTAL DRILLING COST TOTAL DRILLING COST	\$ 79,00 TOTAL COST \$ 95,00 \$ 2,687,94 \$ 3,751,20



AUTHORITY FOR EXPENDITURE EXPLORATION & PRODUCTION

Drilling Project #
Pad Project #
DATE: 1/0/1900

Permian Asset To) conting 24 24 45	Ria 480
Field	Flowmester Fee 24 34 15 WA 14H	Location 24, 34, 15	NEW MEXICO
Lease / Facility Operator	MARATHON OIL PERMIAN LLC	County/Parish	
Operator	IRACATION OLL I ENGLISH ELEC	Estimated Start Date	
		Estimated Completion Date	7-Jul-2019
Estimated	Gross Cost This AFE: \$7,372,933	name 19	
Project Descript	ion & Reason for Expenditure:	Drill, Complete, & Equip a Horizontal Well	
This well is pla	anned to be drilled and completed with	multistage fracturing using plug and perf. The	estimated cost of drilling,
		933 as detailed in the provided authority for exp	penditure document. This
	tallation of transitional and long term a		
		83' and a total measured depth of 17,363', with	
lateral length o	of 4,623" and will be completed with an	estimated 30 stages and approximately 2500 lb	os/π or proppant.
Prepared By:	, JACOB BEATY, JOHN HASHMAN, MATT HENSCH	EN, TOMMY MAZAL/BILLY MOORE, ,	
	A		
/ .	/Final Approval		
5	1/2	Date: 4/18/18	
Table. Regio	onal Vice President Permian Asset Team	Date	
	/		
	•		
	_		
	Par	ticipant's Approval	
	Name of		
	Company:		
	Signature:		
			•
	-		
	Title:	Date:	,

EXHIBIT

5-C

MARATHON OIL PERMIAN LLC AUTHORITY FOR EXPENDITURE DETAIL OF ESTIMATED WELL COSTS

DATE	1/0/1900
DRILLING & LOCATION PREPARED BY	JACOB BEATY
COMPLETION PREPARED BY	JOHN HASHMAN
FACILITIES PREPARED 8Y	MATT HENSCHEN
ADTICICIAL LIET DDEDAREN DV	TOMASEY SASTAL /BILLY

Asset Team	PERMIAN O FORMATION: WOLFCAMP A WILDCAT	EXPLORATION
Reid	0 FORMATION: WOLFCAMP A WILDCAT Flowmaster Fee 24 34 15 WA 14H DEVELOPMENT	RECOMPLETION
Lease/Facility Location	LEA COUNTY X EXPLOITATION	WORKOVER
Prospect	RED HILLS	
гіфэресс		
Est Total Depth	17,363 Est Drilling Days 17363 Est Comp	pletion Days 5.5
LOCATION COST	- INTANGIBLE	
GL CODE	DESCRIPTION	ESTIMATED COST
7001270	Location and Access	33,750
7001250	Land Broker Faes and Services	37,500
7001130	Company of the second s	
	TOTAL LOCATION COST - INTANGIBLE	71,250
DRILUNG COST -	TANGIBLE	
7012050	Conductor Pipe	28,000
7012050	Surface Casing	40,000
7012050	Intermediate Casing 1	147,000
7012050	Intermediate Casing 2	271,000
7012050	Production Casing	61,000
7012050	Drig Liner Hanger, Tieback Eq & Csg Accessories	55,000
7012550	Drilling Wellheed Equipment	70,000
7012040	Casing & Tubing Access	24,000
7012270	Miscellaneous MRO Materials	
702270	mascrianeous with materials	
	TOTAL DRILLING - TANGIBLE	696,000
DRILLING COST -	INTANGIBLE	
7019200	Drilling Rig Mob/Demob	32,500
7019220	Drilling Rig - day work/footage	531,563
7019040	Directional Drilling Services	195,500
7019020	Cament and Cementing Service Surface	15,000
7019020	Cement and Cementing Service Intermediate 1	25,000
7019020	Cement and Cementing Service Intermediate 2	60,000
7019020	Cement and Cementing Service Production	45,000
7019140	Mud Fluids & Services	82,000
7012310	Solids Control equipment	41,000
7012020	Bits	
7019010		
	Casing Crew and Services Fuel (Rig)	
7016350 7019140	Fuel (Mud)	73,000
		18,000
7001460	Water (non potable)	25,000
7019000	Well Logging Services	<u> </u>
7019150	Mud Logging+geosteering	19,000
7019250	Stabilizers, Hole Openers, Underreamers (DH rentals)	15,000
7019110	Casing Inspection/cleaning	15,000
7019110	Drill pipe/collar inspection services	10,000
7016180	Freight - truck	25,000
7001460	Water hauling and disposal (includes soil farming)	135,000
7001440	Vecuum Trucks	20,000
7000030	Contract Labor - general	30,000
7018150	Rental Tools and Equipment (surface rentals)	94,500
7018150	Rig Equipment and Misc.	7,088
7001110	Telecommunications Services	10,000
7001120	Consulting Services	134,663
7001400	Safety and Environmental	10,000
7018120	Rental Buildings (trailers)	10,000
7019310	Coring (sidewalls & analysis)	 :
7011010	8% Contingency & Taxes	197,185
	TOTAL DRILLING - INTANGIBLE	\$1,965,998
DV-44-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		
	TOTAL DRILLING COST	\$2,661,998
COMPLETION - TA		-
7012580	Tubing	50,000
7012040	Tubing Accessories (nipple, wireline entry)	5,000
7012550	Welthead Equip	5,000
7012560	Packers - Completion Equipment	37,000
	TOTAL COMMITTION TANCHE	
	TOTAL COMPLETION - TANGIBLE	\$97,000

MARATHON OIL PER	MIAN LLC	DATE 1/0/1900
AUTHORITY FOR EXP	ENDITURE	
DETAIL OF ESTIMATI	D WELL COSTS PERMIAN	
Field	O FORMATION: WOLFCAMP A	
Lease/Facility	Flowmaster Fee 24 34 15 WA 14H	
COMPLETION - IN	TANGIBLE	
GL CODE	DESCRIPTION	ESTIMATED COST
7001270 7019220	Location and Access (dress location after rig move, set anchors) Drilling Rig During Completion	5,000 35,000
7019140	Mud Fluids & Services	
7019030 7019240	Coiled Tubing Services (3 runs) Snubbing Services	120,000
7019270	Pulling/Swab Units	
7016350	Fuel (from drig)	•
7019010 7019020	Casing Crew and Services Cement and Cementing Services	
7019080	Well Testing Services (flow hand & equip)	125,000
7019320 7019330	Fracturing Services Perforating	2,300,000 175,000
7019360	Wireline Services	10,000
7001460	Water Haufing & Disposal (frac fluids)	200,000
7016180 7018150	Freight - Truck (hauf pipe; drig & compl) BOP Rental & Testing	10,000
7018150	Rental Tools and Equipment (incl drig; lightplant, hydra-walk)	
7018150 7000030	CT Downhole Rental Equipment (ie. Bit, BHA) Contract Labor - general	25,000
7001110	Telecommunications Services	90,000
7001400	Safety and Environmental	
7001120 7018150	Consulting Services Zipper Manifold	110,000
7019300	Frack Stack Rentals	40,000
7016190 7018150	Freight (Transportation Services) Equipment Rental (w/o operator, frac tanks, lightplants)	
7018120	Rental Buildings (trailers)	15,000
7000030	Contract Labor - Pumping (pump-down pumps)	15,000
7011010	8% Contingency & Taxes	274,200
	TOTAL COMPLETION - INTANGIBLE	\$3,654,200
Lie to the land of the state of		
	TOTAL COMPLETION COST	\$3,751,200
SUBSACE EQUIDA		
SURFACE EQUIPM	ENT - TANGIBLE	
•		96 760
7012350 7006640	Misc. Piping, Fittings & Valves Company Labor & Burden	86,765
7012350 7006640 7000030	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General	86,765 - 69,528
7012350 7006640	Misc. Piping, Fittings & Valves Company Labor & Burden	69,528
7012350 7006640 7000030 7001110 7012410 7012270	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system)	
7012350 7006640 7000030 7001110 7012410 7012270 7008060	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA	69,528
7012350 7006640 7000030 7001110 7012410 7012270	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system)	27,078 43,047
7012350 7006640 700030 7001110 7012410 7012270 7088060 7016180 7001190 7012290	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation	27,078 43,047
7012350 7006640 700030 7001110 7012410 7012270 7008060 7016180 7001190 7012290	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&I Materials	27,078 43,047 29,116 250,881
7012350 7006640 700030 7001110 7012410 7012270 7088060 7016180 7001190 7012290	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation	69,528 27,078 43,047 29,116
7012350 700640 700030 7000110 7012410 7012270 7008060 7016180 7001190 7012290 7012290 7012200 7012010	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&E Materials Gas Treeting Dehydration Compressor	27,078 43,047 29,116 250,881
7012350 700640 7000030 7001110 7012410 7012270 7008060 7001180 7001190 7012290 7012200	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&E Materials Ges Treeting Dehydration	27,078 43,047
7012350 700640 700030 7000110 7012410 7012270 7008060 7016180 7001190 7012290 7012290 7012200 7012010 7012010 7012550	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&t Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels	29,116 250,881
7012350 700640 700030 700110 7012410 7012270 7008060 7016180 7012290 7012290 7012290 7012200 7012200 7012350 7012350 7012440 7012500	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Acossories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and instrumentation I&E Materials Gas Treating Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks	27,078 43,047 29,116 250,881
7012350 700640 700030 700031 7001110 7012410 7012270 7008060 7016180 7001190 7012290 7012290 7012290 7012200 7012010 7012610 7012500 7012500 7012500 7012500 7012500 7012610 7012640	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and instrumentation Lik Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heaster Treater Flare & Accessories	29,116 250,881
7012350 700640 7000030 7001110 7012410 7012270 7008060 7016180 7012190 7012290 7012290 7012290 7012200 7012200 7012350 7012610 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accassories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation Ill& Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor	27,078 43,047 29,116 250,831
7012350 700640 700030 700031 7001110 7012410 7012270 7008060 7016180 7001190 7012290 7012290 7012290 7012200 7012010 7012610 7012500 7012500 7012500 7012500 7012500 7012610 7012640	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and instrumentation Lik Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heaster Treater Flare & Accessories	29,116 29,116 29,116 250,831 77,572 142,674 112,997
7012350 700640 7000030 7001110 7012410 7012270 7008060 7016180 7012290 7012290 7012290 7012290 7012200 7012200 7012350 7012410 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accassories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation Ill& Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping Unit Engine	29,116 29,116 29,116 250,831 77,572 142,674 112,997
7012350 700640 700030 7000110 7012410 7012270 701280 7016180 701190 7012290 7012290 7012290 7012200 7012000 7012010 7012500 7012500 7012640 7012640 7012640 7012640 7000010 7012680	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accassories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation Ill& Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Rigine Electrical Power (electrical cooperative construction costs)	29,116 29,116 29,116 250,831 77,572 142,674 112,997
7012350 700640 7000030 7001110 7012410 7012270 7008060 7016180 7012290 7012290 7012290 7012290 7012200 7012200 7012350 7012410 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accassories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation Ill& Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping Unit Engine	27,078 43,047 29,116 250,831
7012350 700640 7000030 7001110 7012410 7012270 7008060 7016180 7012290 7012290 7012290 7012290 7012200 7012200 7012350 7012410 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&E Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE	27,078 43,047 29,116 250,831
7012350 700640 7000030 7001110 7012410 7012270 7008060 7016180 7012290 7012290 7012290 7012290 7012200 7012200 7012350 7012410 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accassories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation Ill& Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Rigine Electrical Power (electrical cooperative construction costs)	77,571 12,974 12,9116 250,831 250,831 250,831 27,572 242,674 12,997 17,469 29,116
7012350 700640 7000030 7001110 7012410 7012270 7008060 7016180 7012290 7012290 7012290 7012290 7012200 7012200 7012350 7012410 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100 7012500 7012100	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&E Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE	27,078 43,047 29,116 250,831
7012350 700640 7000030 7000110 7012410 7012270 7008060 7016180 701190 7012290 7012290 7012200 7012200 7012200 7012010 7012350 70121610 7012440 7012500 7012100 7012410 7012480 7012480 7012480 7012350	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&E Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE	27,078 43,047 29,116 250,831 77,572 142,674 112,997 17,469 29,116 23,293 \$809,485
7012350 700640 700030 700031 7012410 7012270 7012270 7016180 7001190 7012290 7012290 7012200 7012200 7012210 701250 701250 7012550 7012440 7012500	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&E Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST	27,078 43,047 29,116 250,831
7012350 700640 700030 700110 7012410 7012270 7008060 7016180 7012190 7012290 7012290 7012290 7012200 7012200 7012350 7012610 7012500 7012610 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012500 7012640 7000010 7000010 7000010 7000010 7000010 7012480 7012350	Misc. Piping, Bittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation Like Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flane & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump	77,571 142,674 12,931 17,469 29,116 250,831 21,937 17,469 29,116 23,233 \$809,485
7012350 700640 700030 700030 7001110 7012410 7012270 7012270 7016180 7001190 7012290 7012290 7012290 7012200 7012200 7012210 7012500 7012550 7012440 7012500 7012500 7012550 7012500 7012550 7012500 7012550 7012500 7012500 7012500 7012500 7012500 7012500 7012400 700010 7012480 7012180 7012480 7012480 7012480 7012480 7012480 7012480 7012480 7012480 7012480	Misc. Piping, Bittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and instrumentation Lik Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (SSP) Well Services-Well/Weilhead Services	77,571 142,674 12,931 17,469 29,116 250,831 21,937 17,469 29,116 23,233 \$809,485
7012350 7006640 7000030 7000110 7012410 7012270 7008060 7016180 701190 7012290 7012290 7012290 7012200 7012200 7012010 701240 7012500 7012640 7012500 7012180 7012480 7012480 7012480 7012180 7012180 7012180 7012180 7012180 7012140 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012350	Misc. Piping, Bittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation Like Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flane & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESF) Well Services-Well/Wellhead Services Materials & Supplies-Tangible	27,078 43,047 29,116 250,831
7012350 700640 700030 700030 7001110 7012410 7012270 7012270 7016180 7001190 7012290 7012290 7012290 7012200 7012200 7012210 7012500 7012550 7012440 7012500 7012500 7012550 7012500 7012550 7012500 7012550 7012500 7012500 7012500 7012500 7012500 7012500 7012400 700010 7012480 7012180 7012480 7012480 7012480 7012480 7012480 7012480 7012480 7012480 7012480	Misc. Piping, Bittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and instrumentation Lik Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (SSP) Well Services-Well/Weilhead Services	27,078 43,047 29,116 250,831
7012350 700640 700030 700110 7012410 7012270 7008060 7016180 7012190 7012290 7012290 7012290 7012290 7012290 7012290 7012290 7012290 7012250 7012410 7012440 701250 7012410 7012440 701250 7012100 7000010 7000010 7000010 7000010 7000010 701240 701240 7012480 7012180 7012480 7012180	Misc. Piping, Bittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accassories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation Like Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Hester Treater Flare & Accessories Electrical Labor Mechanical Labor Rod Pumping Unit & Pad Pumping Unit Rigine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Welf/Weilhead Services Materials & Supplies-Tangible Surface Weilhead Equipment	27,078 43,047 29,116 250,831
7012350 7006640 7000030 7000110 7012410 7012270 7012270 701290 7012290 7012290 7012200 7012200 7012200 7012250 7012350 7012550 7012550 ARTIFICIAL LIFT 7006640 7012180 7012280 7012280 7012350 ARTIFICIAL LIFT 7006640 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012150 7012550 7012550	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and instrumentation I&E Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Lob Pumps (ESP) Well Services-Well/Weilhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Receivers & Rel Equip	\$ 809,485 \$ 809,485 \$ 3,000 22,500 2,500 2,500
7012350 7006640 7000030 7000110 7012410 7012270 7012270 701290 7012290 7012290 7012200 7012200 7012200 7012250 7012350 7012550 7012550 ARTIFICIAL LIFT 7006640 7012180 7012280 7012280 7012350 ARTIFICIAL LIFT 7006640 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012150 7012550 7012550	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and Instrumentation I&E Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Fiare & Accessories Electrical Labor Mcchanical Labor Mcchanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Both Starley Sucker Rods & Rod Pump Elect Sub Pumpis (ESP) Well Services-Well/Weilhead Services Materials & Supplies-Tangible Surface Weilhead Equipment Pig Launchers/Receivers & Rel Equip S% Contingency & Taxes TOTAL ARTIFICIAL LIFT	\$ 69,528
7012350 7006640 7000030 7000110 7012410 7012270 7012270 701290 7012290 7012290 7012200 7012200 7012200 7012250 7012350 7012550 7012550 ARTIFICIAL LIFT 7006640 7012180 7012280 7012280 7012350 ARTIFICIAL LIFT 7006640 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012180 7012150 7012550 7012550	Misc. Piping, Fittings & Valves Company Labor & Burden Contract Labor - General Telecommunication equip (Telemetry) Line Pipe & Accessories Miscellaneous Materials (containment system) SCADA Freight - truck Contract Engineering Metering and instrumentation I&E Materials Gas Treeting Dehydration Compressor Power Vapor Recovery Unit Separator & other pressure vessels Tanks Heater Treater Flare & Accessories Electrical Labor Mechanical Labor Mechanical Labor Rod Pumping unit & Pad Pumping Unit Engine Electrical Power (electrical cooperative construction costs) TOTAL SURFACE EQUIPMENT - TANGIBLE TOTAL SURFACE EQUIPMENT COST Company Labor Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Beet Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Receivers & Rel Equip B% Contingency & Taxes	\$ 809,485 \$ 809,485 \$ 3,000 22,500 2,500 2,500

TOTAL LOCATION COST

TOTAL DRILLING COST

TOTAL COMPLETIONS COST

TOTAL ARTIFICIAL LIFT COST

TOTAL SURFACE EQUIPMENT COST

GRAND TOTAL COST

71,250

2,661,998

3,751,200

809,485

79,000

\$7,372,933



Drilling Project #
Pad Project #
DATE: 1/0/1900

Permian Asset T	eam		1 1 04 04 45	m
Field	0 Flowmaster Fee 24 34 15 WD 3H		Location 24, 34, 15	Rig NR6
Lease / Facility Operator	MARATHON OIL PERMIAN LLC		County/Parish LE	W MEXICO
Орегаци	IDAG THOM OIL F LIGHDAN LLO		Estimated Start Date 20	
			Estimated Completion Date 22	
Estimated	d Gross Cost This AFE: \$7,452,2	:03	-	
Project Descript	tion & Reason for Expenditure:	Drill, Complete, & Equip a	Horizontal Well	
This well is pla	anned to be drilled and completed	with multistage fracturing	using plug and perf. The esti	mated cost of drilling.
	leting, and equipping the well is \$7			
	stallation of transitional and long te			
	e drilled to a total vertical depth of		ired depth of 18,216', with ar	estimated treatable
lateral length	of 4,621' and will be completed with	h an estimated 30 stages	and approximately 2500 lbs/ft	of proppant.
		•	.,	,,
Prepared By.	JACOB BEATY, JOHN HASHMAN, MATT HE	NSCHEN, TOMMY MAZAL/BILLY MO	ORE, ,	
	<i>l</i>			
	// Final Approval			
5		Date: 4/18/18		
Gile: Regio	nal Vice President Permian Asset Team	Date:		
1				
ţ	•			
		Participant's Approval		
		· uradipanto reprovar		
	Name of			
	Company:			
	Signature:			
	Orginature.			
	Title:		Date:	

EXHIBIT 5-D

MARATHON OIL PERMIAN LLC AUTHORITY FOR EXPENDITURE DETAIL OF ESTIMATED WELL COSTS DATE 1/0/1900

DRILLING & LOCATION PREPARED BY JACOB BEATY

COMPLETION PREPARED BY JOHIN HASHMAN

FACILITIES PREPARED BY MATT HENSCHEN

ARTIFICIAL LIFT PREPARED BY TOMMY MAZAL/BILLY N

Asset Team	PERMIAN	
Fleld		EXPLORATION
Lease/Facility	Flowmaster Fee 24 34 15 WD 3H DEVELOPMENT	RECOMPLETION
Location	LEA COUNTY X EXPLOITATION	WORKOVER
Prospect	RED HILLS	
Est Total Depth	18,216 Est Drilling Days 18216 Est Completion Days	5.5
LOCATION COST - II	NTANGIBLE	
GL CODE	DESCRIPTION	ESTIMATED COST
7001270	Location and Access	45,000
7001250	Land Broker Fees and Services	50,000
	TOTAL LOCATION COST - INTANGIBLE	95,000
DRILLING COST - TA	NGIBLE	
7012050	Conductor Pipe	28,000
7012050	Surface Casing	40,000
7012050	Intermediate Casing 1	147,000
7012050	Intermediate Casing 2	268,000
7012050	Production Casing	61,000
7012050	Drig Uner Hanger, Tieback Eq & Csg Accessories	55,000
7012550	Drilling Welihead Equipment	70,000
7012040	Casing & Tubing Access	24,000
7012270	Miscellaneous MRO Materials	
	TOTAL DRILLING - TANGIBLE	693,000
	-	
DRILLING COST - IN	TANGIBLE	
7019200	Drilling Rig Mob/Demob	43,333
7019220	Drilling Rig - day work/footage	562,500
7019040	Directional Drilling Services	205,000
7019020	Cement and Cementing Service Surface	15,000
7019020	Cement and Cementing Service Intermediate 1	40,000
7019020	Cement and Cementing Service Intermediate 2	60,000
7019020	Cement and Cementing Service Production	50,000
7019140	Mud Fluids & Services	68,000
7012310	Solids Control equipment	43,000
7012020	Bits	70,000
7019010	Casing Crew and Services	30,000
7016350 7019140	Fuel (Rig)	77,000
7001460	Fuel (Mud) Water (non potable)	18,000
7019000	Well Logging Services	25,000
7019150	Mud Logging+geosteering	20,000
7019250	Stabilizers, Hole Openers, Underreamers (DH rentals)	15,000
7019110	Casing inspection/cleaning	15,000
7019110	Drill pipe/collar inspection services	10,000
7016180	Freight - truck	25,000
7001460	Water haufing and disposal (includes soil farming)	135,000
7001440	Vacuum Trucks	20,000
7000030	Contract Labor - general	30,000
7018150	Rental Tools and Equipment (surface rentals)	100,000
7018150	Rig Equipment and Misc.	7,500
7001110	Telecommunications Services	10,000
7001120	Consulting Services	142,500
7001400	Safety and Environmental	10,000
7018120	Rental Buildings (trailers)	
7019310	Coring (sidewalls & analysis)	
7011010	8% Contingency & Taxes	203,187
	TOTAL DRILLING - INTANGIBLE _	\$2,050,020
X market and a second a second and a second	TOTAL DRILLING COST	\$2,743,020
COMPLETION - TAN	GIBLE	
7012500	Tubias	
7012580 7012040	Tubing	50,000
7012040	Tubing Accessories (nipple, wireline entry) Welinead Equip	5,000
7012560	Packers - Completion Equipment	5,000
7 744,500	Control of the contro	37,000
	TOTAL COMPLETION - TANGIBLE	\$97,000

MARATHON OIL PE		DATE 1/0/1900
AUTHORITY FOR EX DETAIL OF ESTIMAT		
Asset Te≥m Field	PERMIAN 0 FORMATION: WOLFCAMP D	
Lease/Facility	Flowmaster Fee 24 34 15 WD 3H	
COMPLETION - II	TANGIBLE	
GL CODE	DESCRIPTION	ESTIMATED COST
7001270 7019220	Location and Access (dress location after rig move, set anchors) Drilling Rig During Completion	5,000 35,000
7019140	Mud Fluids & Services	-
7019030	Colled Tubing Services (3 runs) Snubbing Services	120,000
7019240 7019270	Pulling/Sweb Units	
7016350	Fuel (from drig)	
7019010 7019020	Casing Crew and Services Cement and Cementing Services	
7019080	Well Testing Services (flow hand & equip)	125,000
7019320 7019330	Fracturing Services Perforating	2,300,000 175,000
7019360	Wireline Services	10,000
7001460	Water Hauling & Disposal (frac fluids)	200,000
7016180 7018150	Freight - Truck (haul pipe; drig & compl) BOP Rental & Testing	10,000
7018150	Rental Tools and Equipment (Incl drig; lightplant, hydra-walk)	
7018150 7000030	CT Downhole Rental Equipment (le. Bit, BHA) Contract Labor - general	25,000
7001110	Telecommunications Services	90,000
7001400 7001120	Safety and Environmental Consulting Services	40,000
7018150	Zipper Manifold	110,000
7019300 7016190	Frack Stack Rentals Freight (Transportation Services)	40,000
7018150	Equipment Rental (w/o operator, frac tanks, lightplants)	65,000
7018120	Rental Buildings (trailers)	15,000
7000030 7011010	Contract Labor - Pumping (pump-down pumps) 8% Contingency & Taxes	15,000 274,200
	TOTAL COMPLETION - INTANGIBLE	\$3,654,200
	TOTAL COMPLETION COST	\$3,751,200
		73,731,200
SURFACE EQUIPM	IENT - TANGIBLE	
7012350	Misc. Piping, Fittings & Valves	85,794
7006640 7000030	Company Labor & Burden Contract Labor - General	
7001110	Telecommunication equip (Telemetry)	67,540
7012410	Line Pipe & Accessories	27,951
7012270 7008060	Miscellaneous Materials (containment system) SCADA	43,227
7016180	Freight - truck	
7001190 7012290	Contract Engineering Metering and instrumentation	29,116 237,079
7012290	I&E Materials	
7012200 7012200	Gas Treating Dehydration	
7012010	Compressor	
7012350 7012610	Power Vapor Recovery Unit	
7012440	Separator & other pressure vessels	66,998
7012500	Tanks	144,894
7012100 7012640	Heater Treater Flare & Accessories	17,330 11,646
7000010	Electrical Labor	29,116
7000010 7012480	Mechanical Labor Rod Pumping unit & Pad	
7012180	Pumping Unit Engine	:
7012350	Electrical Power (electrical cooperative construction costs)	23,293
	TOTAL SURFACE EQUIPMENT - TANGIBLE	\$783,983
	TOTAL SURFACE EQUIPMENT COST	\$783,983
RTIFICIAL LIFT		
7006640	Company Labor	3,000
7006640 7012180	Gas Lift Equipment	3,000 23,000
7006640	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP)	
7006640 7012180 7012480 7012140 7019350	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services	23,000
7006640 7012180 7012480 7012140	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP)	23,000
7006640 7012180 7012480 7012140 7019350 7012270 7012550 7012390	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Weil Services-Well/Weilhead Services Materials & Supplies-Tangible Surface Weilhead Equipment Pig Launchers/Receivers & Rel Equip	23,000
7006640 7012180 7012480 7012140 7019350 7012270 7012550	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment	23,000
7006640 7012180 7012480 7012140 7019350 7012270 7012550 7012390	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Weil Services-Well/Weilhead Services Materials & Supplies-Tangible Surface Weilhead Equipment Pig Launchers/Receivers & Rel Equip	23,000
7012180 7012480 7012140 7019350 7012270 7012550 7012390	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes	23,000
7006640 7012180 7012480 7012140 7019350 7012270 7012550 7012390	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well-Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes	23,000
7006640 7012180 7012480 7012140 7019350 7012270 7012550 7012390	Gas Lift Equipment Rod Pumping, Sucker Rods & Rod Pump Elect Sub Pumps (ESP) Well Services-Well/Wellhead Services Materials & Supplies-Tangible Surface Wellhead Equipment Pig Launchers/Receivers & Rel Equip 8% Contingency & Taxes TOTAL ARTIFICIAL LIFT COST	23,000

TOTAL COMPLETIONS COST TOTAL SURFACE EQUIPMENT COST TOTAL ARTIFICIAL LIFT COST

GRAND TOTAL COST

3,751,200 783,983

79,000

\$7,452,203

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

APPLICATION OF MARATHON
OIL PERMIAN LLC FOR APPROVAL
OF A NON-STANDARD SPACING
AND PRORATION UNIT,
NON-STANDARD LOCATIONS, AND
COMPULSORY POOLING,
LEA COUNTY, NEW MEXICO

CASE NO. 16306

APPLICATION OF MARATHON
OIL PERMIAN LLC FOR APPROVAL
OF NON-STANDARD LOCATIONS AND
COMPULSORY POOLING,
LEA COUNTY, NEW MEXICO

CASE NO. 16307

AFFIDAVIT

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

Jennifer L. Bradfute, attorney in fact and authorized representative of Marathon Oil Permian LLC, the Applicant herein, being first duly sworn, upon oath, states that the above-referenced Application was provided under the notice letter and that proof of receipt is attached hereto.

Jenniter L. Bradfute

SUBSCRIBED AND SWORN to before me this 7th day of August, 2018 by Jennifer L. Bradfute.

Notary Public

My commission expires: 1/29/2022

EXHIBIT ____

	Unit Owner to be Force Pooled	
Name	Address 1	Address 2
Chevron U.S.A. Inc.	6301 Deauville Blvd.	Midland, TX 79706
Tap Rock Resources, LLC	602 Park Point Drive, Suite 200	Golden, CO 80401
MRC Permian LKE, Co.	5400 LBJ Freeway	Dallas, TX 75240
West Texas A&M University c/o The Texas A&M U		Sundy IN 19210
Office of General Counsel	301 Tarrow Street, 6th Floor	College Station, TX 77840-7896
Ohio State University	190 N. Oval Mall	Columbus, OH 43210
One state oniversity	130 K. Ovar Maii	Columbus, OTI 45220
	ORRI Owners in Unit	
Name	Address 1	Address 2
MO Oil, LLC	P.O. Box 429	Roswell, NM 88202
Foundation Minerals	4000 N. Big Spring, Suite 310	Midland, TX 79705
Mavros Minerals, LLC	4000 N. Big Spring, Suite 310	Midland, TX 79705
Oak Valley Land & Mineral, LP	4000 N. Big Spring, Suite 310	Midland, TX 79705
-,		
	Offset Owners	
COG Operating LLC	One Concho Center, 600 W Illinois Avenue	Midland, TX 79701
COG Production, LLC	One Concho Center, 600 W Illinois Avenue	Midland, TX 79701
EOG Resources Inc.	5509 Champions Drive	Midland, TX 79706
EOG Y Resources Inc.	5509 Champions Drive	Midland, TX 79706
EOG A Resources Inc.	5509 Champions Drive	Midland, TX 79706
EOG M Resources Inc.	5509 Champions Drive	Midland, TX 79706
OXY USA Inc.	5 Greeway Plaza, Suite 110	Houston, TX 77046
OXY USA WTP, LLC	5 Greeway Plaza, Suite 110	Houston, TX 77046
OXY Y-1 Company	5 Greeway Plaza, Suite 110	Houston, TX 77046
Centennial Resource Production, LLC	1001 17th Street, Suite 1800	Denver, CO 80202
Chevron USA, Inc.	6301 Deauville Blvd.	Midland, TX 79706
Synergy Land Group LLC	P.O. Box 82009	Lafayette, LA 70598
Energen Resources Corp.	605 Richard Arrington, Jr. Blvd	North Birmingham, AL 35203
Bergfeld Land & Minerals Group LLC	305 S. Broadway Ave., Suite 304	Tyler, TX 75702
Tap Rock Resources, LLC	602 Park Point Drive, Suite 200	Golden, CO 80401
Shamrock Royalty LLC	200 W. Highway 6	Woodway, TX 76712
Y-20 II, LLC	P.O. Box 2078	Abline, TX 79604
Yakka III, LLC	P.O. Box 2078	Abline, TX 79604
Crood Fund I LP	1018 North 5th	Abline, TX 79601
Chisos Mineral, LLC	1111 Bagby Street, Suite 2150	Houston, TX 77002
Llano Natural Resources	4920 S. Loop 289, Suite 206	Lubbock, TX 79414
Darbe Daniels Nokes	28820 Grayfox Street	Malibu, CA 90265
Keith Pratt Daniels	912 E 530 N	Heber City, UT 84032
Foundation Minerals, LLC	4000 N. Big Spring, Suite 310	Midland, TX 79705
Mavros Minerals, LLC	4000 N. Big Spring, Suite 310	Midland, TX 79705
Oak Valley Mineral & Land, LP	4000 N. Big Spring, Suite 310	Midland, TX 79705
Pamela Dennis Dial	2106 Oxford Ave.	Austin, TX 78704
Estate of Cyle Britton Atwood	8723 Silverhill Lane	Austin, TX 78759
Aguinnah Resources LLC	110 W Louisiana, Suite 404	Midland, TX 79701

Robert E. Landreth	110 W Louisiana, Suite 404	Midland, TX 79701
Advance Energy Partners LLC	11490 Westheimer Road, Suite 950	Houston TX 77077

Flowmaster

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

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PS Form 3877

Type of Mailing: CERTIFIED 06/20/2018



Firm Mailing Book ID: 145758

Line	Article Number	Name, Street & P.O. Address	Postage	Fee	R.R.Fee	Reference	Rest.Del.Fee Contents
1	9314 8699 0430 0047 8977 28	Advance Energy Partners LLC 11490 Westheimer Road, Suite 950	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
2	9314 8699 0430 0047 8977 35	Houston TX 77077 Aquinnah Resources LLC 110 W Louisiana, Suite 404 Midland TX 79701	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
3	9314 8699 0430 0047 8977 42		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
4	9314 8699 0430 0047 8977 59	Centennial Resource Production, LLC 1001 17th Street, Suite 1800 Denver CO 80202	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
5	9314 8699 0430 0047 8977 66	Chevron U.S.A. Inc. 6301 Deauville Blvd. Midland TX 79706	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
6	9314 8699 0430 0047 8977 73	Chevron USA, Inc. 6301 Deauville Blvd. Midland TX 79706	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
7	9314 8699 0430 0047 8977 80	Chisos Mineral, LLC 1111 Bagby Street, Suite 2150 Houston TX 77002	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
8	9314 8699 0430 0047 8977 97	COG Operating LLC One Concho Center, 600 W Illinois Avenue Midland TX 79701	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
9	9314 8699 0430 0047 8978 03	COG Production, LLC One Concho Center, 600 W Illinois Avenue Midland TX 79701	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
10	9314 8699 0430 0047 8978 10	Crood Fund I LP 1018 North 5th Abline TX 79604	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
11	9314 8699 0430 0047 8978 27	Darbe Daniels Nokes 28820 Grayfox Street Malibu CA 90265	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
12	9314 8699 0430 0047 8978 34	Energen Resources Corp. 605 Richard Arrington, Jr. Blvd North Birmingham AL 35203	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
13	9314 8699 0430 0047 8978 41	EOG A Resources Inc. 5509 Champions Drive Midland TX 79706	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
14	9314 8699 0430 0047 8978 58	EOG M Resources Inc. 5509 Champions Drive Midland TX 79706	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
15	9314 8699 0430 0047 8978 65	EOG Resources Inc. 5509 Champions Drive Midland TX 79706	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice

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



PS Form 3877

Type of Mailing: CERTIFIED 06/20/2018



Firm Mailing Book ID: 145758

		San Till					Rest.Del.Fee
Line	Article Number	Name, Street & P.O. Address	Postage	Fee	R.R.Fee	Reference	Contents
16	9314 8699 0430 0047 8978 72	EOG Y Resources Inc. 5509 Champions Drive Midland TX 79706	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
17	9314 8699 0430 0047 8978 89	Estate of Cyle Britton Atwood 8723 Silverhill Lane Austin TX 78759	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
18	9314 8699 0430 0047 8978 96	Foundation Minerals 4000 N. Big Spring, Suite 310 Midland TX 79705	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
19	9314 8699 0430 0047 8979 02	Foundation Minerals, LLC 4000 N. Big Spring, Suite 310 Midland TX 79705	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
20	9314 8699 0430 0047 8979 19	Keith Pratt Daniels 912 E 530 N Heber City UT 84032	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
21	9314 8699 0430 0047 8979 26	Llano Natural Resources 4920 S. Loop 289, Suite 206 Lubbock TX 79414	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
22	9314 8699 0430 0047 8979 33	Mavros Minerals, LLC 4000 N. Big Spring, Suite 310 Midland TX 79705	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
23	9314 8699 0430 0047 8979 40	Mavros Minerals, LLC 4000 N. Big Spring, Suite 310 Midland TX 79705	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
24	9314 8699 0430 0047 8979 57	MO Oil, LLC P.O. Box 429 Roswell NM 88202	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
25	9314 8699 0430 0047 8979 64	MRC Permian LKE, Co. 5400 LBJ Freeway Dallas TX 75240	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
26	9314 8699 0430 0047 8979 71	Oak Valley Land & Mineral, LP 4000 N. Big Spring, Suite 310 Midland TX 79705	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
27	9314 8699 0430 0047 8979 88	Oak Valley Mineral & Land, LP 4000 N. Big Spring, Suite 310 Midland TX 79705	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
28	9314 8699 0430 0047 8979 95	Ohio State University 190 N. Oval Mall Columbus OH 43210	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
29	9314 8699 0430 0047 8980 08	OXY USA Inc. 5 Greeway Plaza, Suite 110 Houston TX 77046	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
30	9314 8699 0430 0047 8980 15	OXY USA WTP, LLC 5 Greeway Plaza, Suite 110 Houston TX 77046	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice

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



PS Form 3877

Type of Mailing: CERTIFIED 06/20/2018



Firm Mailing Book ID: 145758

Line	Article Number	Name, Street & P.O. Address		Postage	Fee	R.R.Fee	Reference	Rest.Del.Fee Contents
31	9314 8699 0430 0047 8980 22	OXY Y-1 Company 5 Greeway Plaza, Suite 110 Houston TX 77046		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
32	9314 8699 0430 0047 8980 39	Pamela Dennis Dial 2106 Oxford Ave. Austin TX 78704		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
33	9314 8699 0430 0047 8980 46	Robert E. Landreth 110 W Louisiana, Suite 404 Midland TX 79701		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
34	9314 8699 0430 0047 8980 53	Shamrock Royalty LLC 200 W. Highway 6 Woodway TX 76712		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
35	9314 8699 0430 0047 8980 60	Synergy Land Group LLC P.O. Box 82009 Lafayette LA 70598		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
36	9314 8699 0430 0047 8980 77	Tap Rock Resources, LLC 602 Park Point Drive, Suite 200 Golden CO 80401		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
37	9314 8699 0430 0047 8980 84	Tap Rock Resources, LLC 602 Park Point Drive, Suite 200 Golden CO 80401		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
38	9314 8699 0430 0047 8980 91	West Texas A&M University c/o The Texas A& University System - Office of General Counse 301 Tarrow Street, 6th Floor College Station TX 77840	M	\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
39	9314 8699 0430 0047 8981 07	Y-20 II, LLC P.O. Box 2078 Abline TX 79604		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
40	9314 8699 0430 0047 8981 14	Yakka III, LLC P.O. Box 2078 Abline TX 79604		\$1.21	\$3.45	\$1.50	81363-0132	\$0.00 Notice
			Totals:	\$48.40	\$138.00	\$60.00		\$0.00
							Grand Total:	\$246.40

List Number of Pieces Total Number of Pieces Postmaster: Dated:
Listed by Sender Received at Post Office Name of receiving employee

Report - CertifiedPro.net 5/20/2018 to 6/20/2018 Name: zinacrum 8/7/2018 8:12:24 AM

Name 2	Address 1	Address 2 Address 3	City	State	Zip	FMB ID	User Name	User ID	Mailing Status	Service	
	11490 Westhelmer Road, Suite 950		Houston	TX	77077	145758	zinacrum		Delivered	Return Receipt	- Electronic
	110 W Louisiana, Suite 404		Midiand	TX	79701	145758	zinacrum	20112	Lost	Return Receipt	- Electronic
	305 S. Broadway Ave., Suite 304		Tyler	TX	75702	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	1001 17th Street, Suite 1800		Denver	CO	80202	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	6301 Deauville Blvd.		Midland	TX	79706	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	6301 Deauville 8 lvd.		Midland	TX	79706	145758	zinacrum	20112	Lost	Return Receipt	- Electronic
	1111 Bagby Street, Suite 2150		Houston	TX	77002	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	One Concho Center, 600 W Illinois Avenue		Midland	TX	79701	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	One Concho Center, 600 W Illinois Avenue		Midiand	TX	79701	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	1018 North 5th		Abline	TX	79604	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	28820 Grayfox Street		Malibu	CA	90265	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	605 Richard Arrington, Jr. Blvd		North Birmingham	AL	35203	14575B	zinacrum	20112	Delivered	Return Receipt	- Electronic
	5509 Champions Drive		Midland	TX	79706	14575B	zinacrum	20112	Delivered	Return Receipt	- Electronic
	5509 Champions Drive		Midland	TX	79706	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	5509 Champions Drive		Midland	TX	79706	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	S509 Champions Drive		Midland	TX	79706	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	8723 Silverhill Lane		Austin	TX	78759	145758	zinacrum	20112	To be Returned	Return Receipt	- Electronic
	4000 N. Big Spring, Sulte 310		Midland	TX	79705	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	4000 N. Big Spring, Suite 310		Midland	TX	79705	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	912 E 530 N		Heber City	UT	84032	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	4920 5. Loop 289, Suite 206		Lubbock	TX	79414	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	4000 N. Big Spring, Sulte 310		Midland	TX	79705	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	4000 N. Big Spring, Suite 310		Midland	TX	79705	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	P.O. Box 429		Roswell	NM	88202	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	5400 LBJ Freeway		Dallas	TX	75240	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	4000 N. Big Spring, Suite 310		Midland	TX	79705	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	4000 N. Big Spring, Sulte 310		Midland	TX	79705	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	190 N. Oval Mail		Columbus	OH	43210	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	5 Greeway Plaza, Suite 110		Houston	TX	77046	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	5 Greeway Plaza, Suite 110		Houston	TX	77046	145758	zinacrum	20112	Delivered	Return Receipt	
	5 Greeway Plaza, Suite 110		Houston	TX	77046	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	2106 Oxford Ave.		Austin	TX	78704	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	110 W Louisiana, Suite 404		Midland	TX	79701	145758	zinacrum	20112	Lost	Return Receipt	- Electronic
	200 W. Highway 6		Woodway	TX	76712	145758	zinacrum	20112	Lost	Return Receipt	- Electronic
	P.O. Box 82009		Lafayette	LA	70598	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	602 Park Point Drive, Suite 200		Golden	CO	80401	145758	zinacrum	20112	Delivered	Return Receipt	- Electronic
	602 Park Point Orive, Sulte 200		Golden	CO	80401	145758	zinacrum	20112	Delivered	Return Receipt	
ffice of General Counse	301 Tarrow Street, 6th Floor		College Station	TX	77840		zinacrum		Delivered	Return Receipt	
	P.O. Box 2078		Abline	TX	79604	145758	zinacrum	20112	Delivered	Return Receipt	
	P.O. Box 2078		Abline	TX	79604		zinacrum		Delivered	Return Receipt	
	301 Dinosaur Trail		Santa Fe	NM	87508		zinacrum	20112		Return Receipt	

Affidavit of Publication

STATE OF NEW MEXICO COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

> Beginning with the issue dated June 22, 2018 and ending with the issue dated June 22, 2018.

Publisher

Sworn and subscribed to before me this 22nd day of June 2018.

Business Manager

My commission expires January 29, 2019



OFFICIAL SEAL **GUSSIE BLACK Notary Public** State of New Mexico

My Commission Expuse ...

This newspaper is duly qualified to bublish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE

LEGAL NOTICE
June 22, 2018

CASE, No. 16307: Notice to all affected parties, as well as the heirs and devisees of Chevron U.S.A. Inc.; Tap Rock Resources, LLC; MRC Permian LKE, Co.; West Texas A&M University c/o The Texas A&M University System - Office of General Counsel; Ohio State University; MO Oil, LLC; Foundation Minerals, Mavros Minerals, LLC; Oak Valley Land & Mineral, LP; COG Operating LLC; COG Production, LLC; EOG Resources Inc.; EOG Y Resources Inc.; EOG A Resources Inc.; COY USA MTP. LLC; OXY 'Y-1 Company; Centennial Resource EOG M Resources Inc.; OXY USA Inc.; OXY USA WTP. LLC; OXY 'Y-1 Company; Centennial Resource Production, LLC; Chevron USA, Inc.; Synergy Land Group LLC; Energen Resources Corp.; Bergfeld Land & Minerals Group LLC; Shamrock Royalty LLC; Y-20 ff. LLC; Liano Natural Resources; Darbe Daniels Nokes; Kelth Pratt Daniels; Foundation Minerals, LLC; Oek Valley Mineral & Lend, LP; Pamela Dennis Dial; Estate of Cyle Britton Atwood; Aquinnah Resources LLC; Robert E. Landreth; Advance Energy Partners LLC of Marathon Oil Permian LLC's application for a nonstandard spacing and proretion unit, non-standard iocations, and compulsory pooling, Lea 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 12, 2018. Io consider this application. Applicant seeks an order from the Division: (1) creating a standard 320-acre, more or less spacing and proration unit in covering the W/2 of Section 15, Township 24 South, Range 34 East, NMPM. Lea County, New Mexico: (2) approving non-standard locations; and, (3) pooling all mineral interests in the Wollcamp formation unit with be the unit for the Flowmaster Fee 24-34-15 WD 3H well, to be horizontally drilled. The producing areas for this well will contain unorthodox locations. Also to be considered will be the cost of drilling and completing said well, the allocation of these costs as well as the actual operating costs and charges for supervisio be considered will be the cost of drilling and completing said well, the allocation of these costs as well as the actual operating costs and charges for supervision, designation of Marathon as operator of the well, and a 200% charge for risk involved in drilling said well. Said area is located approximately 17 miles northwest of Jal, New Mexico.

01104570

00213827

DOLORES SERNA MODRALL, SPERLING, ROEHL, HARRIS & P. O. BOX 2168 ALBUQUERQUE, NM 87103-2168

Affidavit of Publication

STATE OF NEW MEXICO COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

> Beginning with the issue dated June 22, 2018 and ending with the issue dated June 22, 2018.

Publisher

Sworn and subscribed to before me this 22nd day of June 2018.

Business Manager

My commission expires

Jahuary 29, 2019 (Seal)

OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of Naw Mexico

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE June 22, 2018

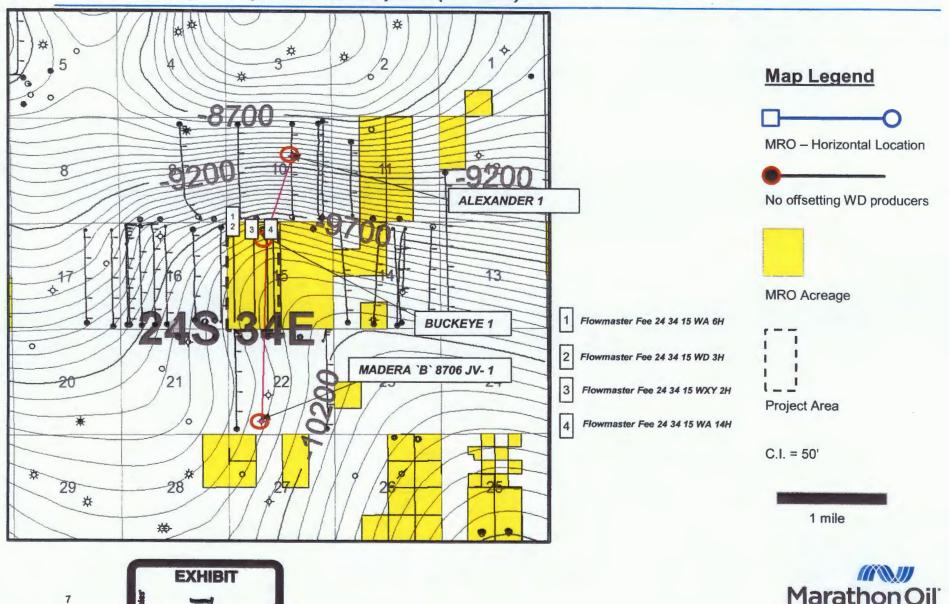
CASE No. 16306: Notice to all affected parties, as well as the heirs and devisees of Chevron U.S.A. Inc.; Tap Rock Resources, LLC; MRC Permian LKE, Co.; West Texas A&M University c/o The Texas A&M University System - Office of General Counsel; Ohlo State University; MO Oil, LLC; Foundation Minerals; Mavros Minerals, LLC; Oak Valley Land & Minerals, LP; COG Operating LLC; COG Production, LLC; EOG Resources Inc.; EOG A Resources Inc.; EOG M Resources Inc.; EOG A Resources Inc.; EOG M Resources Inc.; CXY USA Inc.; OXY USA WTP. LLC; OXY Y.I Company; Centennial Resource Production, LLC; Chevron USA, Inc.; Synergy Land Group LLC; Energen Resources Corp.; Bergfeld Land & Minerals Group LLC; Shamrock Royalty LLC; Y-20 II, LLC; Yakka III, LLC; Crood Fund I LP; Chisos Mineral, LLC; Clano Natural Resources; Darbe Deniels Nokes; Kelth Pratt Daniels; Foundation Minerals, LLC; Oak Valley Mineral & Land, LP; Pamela Dennis Dla!; Estate of Cyle Britton Atwood; Aquinnah Resources LLC; Robert E. Landreth; Advance Energy Partners LLC of Marathon Oil Permian LLC's application for a nonstandard spacing and proration unit, non-standard locations, and compulsory pooling, Lea 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 12, 2018, to consider this application. Applicant seeks an order from the Division: (1) creating a standard 320-acre, more or less, spacing and proration unit in covering the W/2 of Section 15, Township 24 South, Range 34 East, NMPM, Lea County, New Mexico; (2) approving non-standard locations; and, (3) pooling all mineral interests in the Wolfcamp formation undit. This proposed standard spacing and proration unit will be the unit for the Flowmaster Fee 24-34-15 WXY 2H, Flowmaster Fee 24-34-15 WA 14H wells, to be horizontally drilled. The producing areas for these wells will contain unorthodox locations. Also to be considered will be the cost of drilling and completing said wells, the allocatio

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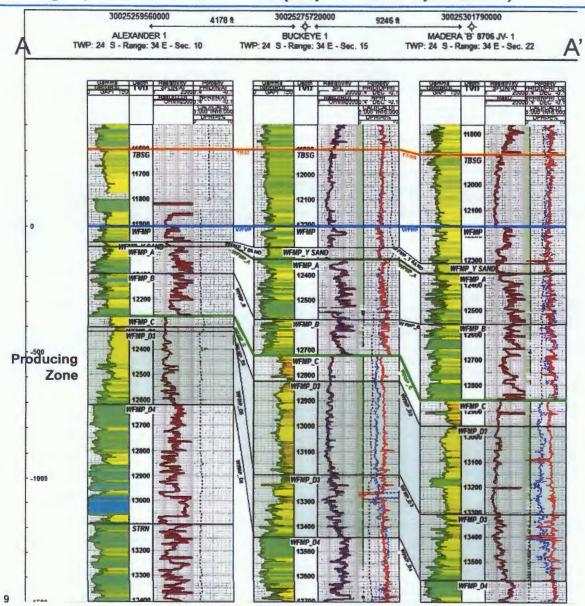
00213823

DOLORES SERNA MODRALL, SPERLING, ROEHL, HARRIS & P. O. BOX 2168 ALBUQUERQUE, NM 87103-2168

Structure Map - Top of Wolfcamp D4 (SSTVD)

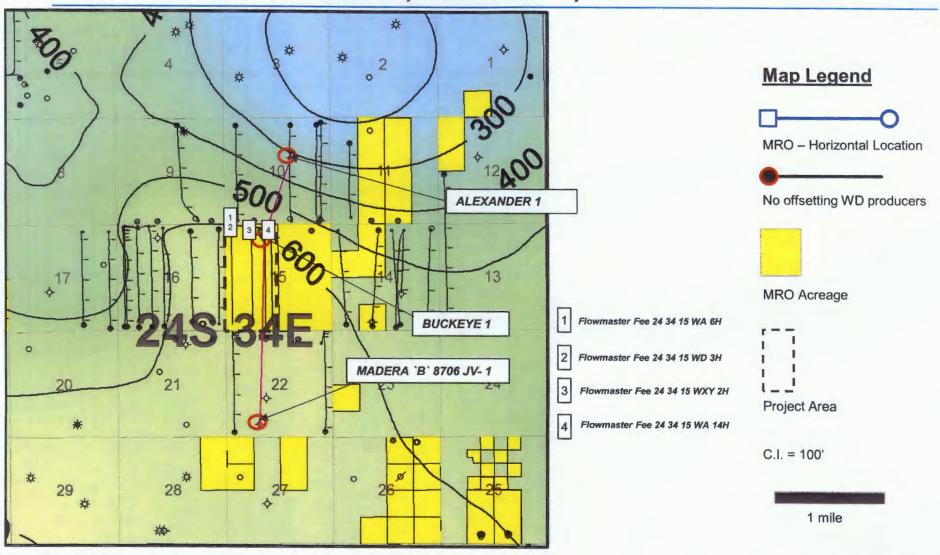


Stratigraphic Cross Section (Top Wolfcamp Datum)



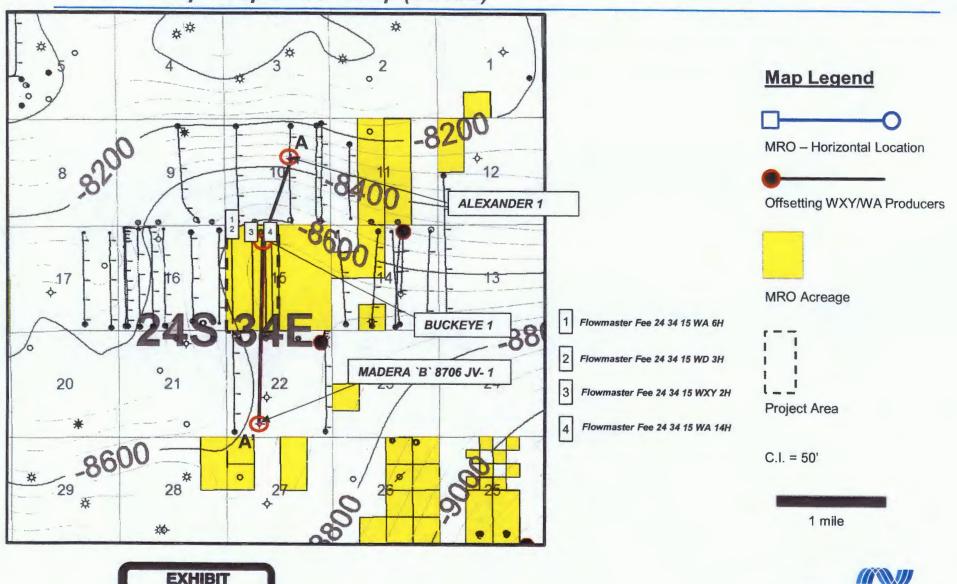


Gross Interval Isochore - Wolfcamp D2 to Wolfcamp D4





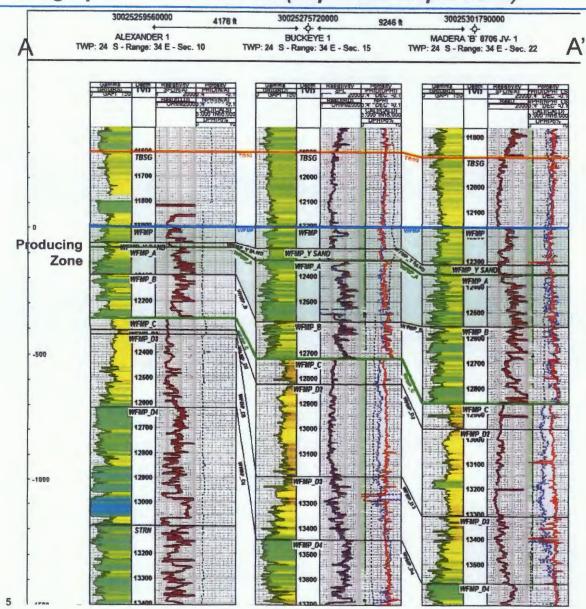
Structure Map - Top of Wolfcamp (SSTVD)







Stratigraphic Cross Section (Top Wolfcamp Datum)





Gross Interval Isochore - Wolfcamp to Wolfcamp B

