



April 24, 2019

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

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

Dear Working Interest Owner,

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

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

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

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

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



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

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

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

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

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

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

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

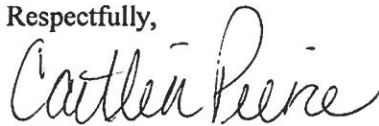
It should be understood that compliance with topography or cultural or environmental concerns, among others, might require modification of Cimarex's intended procedure. Cimarex will advise you of any such modifications.

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

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

Please call the undersigned with any questions or comments.

Respectfully,

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

Caitlin Pierce  
432.571.7862

**ELECTION TO PARTICIPATE  
Hayduke 34-3 Federal Com 9H**

\_\_\_\_\_ Partnership Properties Company elects **TO** participate in the proposed Hayduke 34-3 Federal Com 9H

\_\_\_\_\_ Partnership Properties Company elects **NOT** to participate in the proposed Hayduke 34-3 Federal Com 9H

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2019.

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

If your election above is TO participate in the proposed Hayduke 34-3 Federal Com 9H well, then:

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

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

**ELECTION TO PARTICIPATE  
Hayduke 34-3 Federal Com 11H**

\_\_\_\_\_ Partnership Properties Company elects **TO** participate in the proposed Hayduke 34-3 Federal Com 11H

\_\_\_\_\_ Partnership Properties Company elects **NOT** to participate in the proposed Hayduke 34-3 Federal Com 11H

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2019.

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

If your election above is TO participate in the proposed Hayduke 34-3 Federal Com 11H well, then:

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

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



## Authorization For Expenditure Drilling

AFE # 26621009

Company Entity

Date Prepared  
4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 9H	Carlsbad Bone Spring Prospect	300001-136.01	26621009
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
<input checked="" type="checkbox"/> New <input type="checkbox"/> Supplement <input type="checkbox"/> Revision	Formation	Well Type	Ttl Measured Depth	Ttl Vertical Depth
		DEV	18,200	8,050

Purpose Drill and complete well

## Description

Drilling Drill and complete a horizontal test. Drill to 400' set surface casing. Drill to 1876' set intermediate casing. Drill to 6823' (KOP). Drill curve at 12°/100' initial build rate to +/- 90 degrees and 7300' TVD and drill a +/- 9460' long lateral in the Bone Spring formation. Run and cement production casing. Stage frac in 48 stages. Drill out plugs. Run production packer, tubing and GLVs.

<b>Intangible</b>	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,104,400		\$2,104,400
Completion Costs		\$6,295,360	\$6,295,360
<b>Total Intangible Cost</b>	<b>\$2,104,400</b>	<b>\$6,295,360</b>	<b>\$8,399,760</b>
<b>Tangible</b>	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$83,000	\$553,000	\$636,000
Lease Equipment		\$161,500	\$161,500
<b>Total Tangible Cost</b>	<b>\$83,000</b>	<b>\$714,500</b>	<b>\$797,500</b>
<b>Total Well Cost</b>	<b>\$2,187,400</b>	<b>\$7,009,860</b>	<b>\$9,197,260</b>

## Comments On Well Costs

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

## Well Control Insurance

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

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

## Marketing Election

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

☒ I elect to take my gas in kind.

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

## Comments on AFE

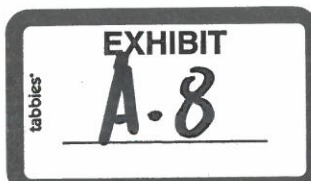
The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its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

## Nonoperator Approval

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

4/23/2019





Description	BCP - Drilling		ACP - Drilling		Comp/Stim		Production Equip		Post Completion		Total	
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount		Cost
Roads & Location	DIDC.100	70,000			STIM.100	5,000	CON.100	8,000	PCOM.100	28,000		111,000
Damages	DIDC.105	10,000					CON.105	2,000				12,000
Mud/Fluids Disposal	DIDC.255	200,000			STIM.255	53,000			PCOM.255	45,000		298,000
Day Rate	DIDC.115	413,400	DICC.120	124,020								537,420
Misc Preparation	DIDC.120	35,000										35,000
Bits	DIDC.125	65,000	DICC.125	0	STIM.125	0			PCOM.125	0		65,000
Fuel	DIDC.135	74,000	DICC.130	0					PCOM.130	0		74,000
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000	DICC.135	0	STIM.135	38,000			PCOM.135	0		41,000
Mud & Additives	DIDC.145	225,000										225,000
Surface Rentals	DIDC.150	86,000	DICC.140	0	STIM.140	189,000	CON.140	4,000	PCOM.140	30,900		309,900
Downhole Rentals	DIDC.155	74,000			STIM.145	0			PCOM.145	0		74,000
Flowback Labor					STIM.141	0			PCOM.141	13,440		13,440
Automation Labor							CON.150	25,000	PCOM.150	0		25,000
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150	0						0
Mud Logging	DIDC.170	22,000										22,000
Open Hole Logging	DIDC.180	0										0
Cementing & Float Equipment	DIDC.185	85,000	DICC.155	150,000								235,000
Tubular Inspections	DIDC.190	25,000	DICC.160	5,000	STIM.160	2,000			PCOM.160	0		32,000
Casing Crews	DIDC.195	12,000	DICC.165	20,000	STIM.165	0						32,000
Mechanical Labor	DIDC.200	20,000	DICC.170	3,000	STIM.170	0	CON.170	90,000	PCOM.170	0		113,000
Trucking/Transportation	DIDC.205	15,000	DICC.175	15,000	STIM.175	2,000	CON.175	6,500	PCOM.175	0		38,500
Supervision	DIDC.210	80,000	DICC.180	18,000	STIM.180	74,000	CON.180	5,000	PCOM.180	0		177,000
Trailer House/Camp/Catering	DIDC.280	37,000	DICC.255	7,000	STIM.280	42,000						86,000
Other Misc Expenses	DIDC.220	3,000	DICC.190	0	STIM.190	145,000	CON.190	20,000	PCOM.190	0		168,000
Overhead	DIDC.225	10,000	DICC.195	5,000								15,000
Remedial Cementing	DIDC.231	0			STIM.215	0			PCOM.215	0		0
MOB/DEMOS	DIDC.240	75,000										75,000
Directional Drilling Services	DIDC.245	201,000										201,000
Solids Control	DIDC.260	74,000										74,000
Well Control Equip (Snubbing Services)	DIDC.265	74,000	DICC.240	0	STIM.240	81,000			PCOM.240	0		155,000
Fishing & Siderack Services	DIDC.270	0	DICC.245	0	STIM.245	0			PCOM.245	0		0
Completion Rig					STIM.115	21,000			PCOM.115	0		21,000
Coil Tubing Services					STIM.260	393,000			PCOM.260	0		393,000
Completion Logging/Perforating/Wireline					STIM.200	410,000			PCOM.200	0		410,000
Composite Plugs					STIM.390	108,000			PCOM.390	0		108,000
Stimulation Pumping/Chemicals/Additives/Sand					STIM.210	2,926,000			PCOM.210	0		2,926,000
Stimulation Water/Water Transfer/Water Storage					STIM.395	702,000						702,000
Cimarex Owned Frac/Rental Equipment					STIM.305	42,000			PCOM.305	0		42,000
Legal/Regulatory/Curative	DIDC.300	10,000					CON.300	0				10,000
Well Control Insurance	DIDC.285	6,000										6,000
Major Construction Overhead							CON.305	13,500				13,500
Real Time Operations Center	DIDC.560	0			STIM.560	0						0
FL/GL - Labor							CON.500	94,000				94,000
FL/GL - Supervision							CON.505	7,000				7,000
Survey							CON.515	0				0
SWD/Other - Labor							CON.600	0				0
SWD/OTHER - SUPERVISION							CON.605	0				0
Contingency	DIDC.435	100,000	DICC.220	17,000	STIM.220	262,000	CON.220	30,000	PCOM.220	0		409,000
Contingency							CON.221	14,000				14,000
P&A Costs	DIDC.295	0	DICC.275	0								0
Total Intangible Cost		2,104,400		364,020		5,495,000		319,000		117,340		8,399,760
Drive Pipe	DWEB.150	0										0
Conductor Pipe	DWEB.130	0										0
Water String	DWEB.135	0										0
Surface Casing	DWEB.140	14,000										14,000
Intermediate Casing 1	DWEB.145	49,000										49,000
Intermediate Casing 2	DWEB.155	0										0
Drilling Liner	DWEB.160	0										0
Production Casing or Liner			DWEA.100	326,000								326,000
Production Tie-Back			DWEA.165	0	STIMT.101	0						0
Tubing					STIMT.105	48,000			PCOMT.105	0		48,000
Wellhead, Tree, Chokes	DWEB.115	20,000	DWEA.120	20,000	STIMT.120	25,000			PCOMT.120	0		65,000
Liner Hanger, Isolation Packer	DWEB.100	0	DWEA.125	0								0
Packer, Nipples					STIMT.400	15,000			PCOMT.400	0		15,000
Pumping Unit, Engine					STIMT.405	0			PCOMT.405	0		0
Downhole Lift Equipment					STIMT.410	60,000			PCOMT.410	0		60,000
Surface Equipment									PCOMT.420	59,000		59,000
Well Automation Materials									PCOMT.455	0		0
Total Tangible - Well Equipment Cost		83,000		346,000		148,000				59,000		636,000
N/C Lease Equipment							CONT.400	57,000				57,000
Tanks, Tanks Steps, Stairs							CONT.405	0				0
Battery Equipment							CONT.410	0				0
Secondary Containments							CONT.415	14,500				14,500
Overhead Power Distribution							CONT.420	0				0
Facility Electrical							CONT.425	22,500				22,500
Telecommunication Equipment							CONT.426	0				0
Meters and Metering Equipment							CONT.445	3,500				3,500
Facility Line Pipe							CONT.450	6,000				6,000
Lease Automation Materials							CONT.455	23,000				23,000
FL/GL - Materials							CONT.550	14,500				14,500
FL/GL - Line Pipe							CONT.555	20,500				20,500
SWD/Other - Materials							CONT.650	0				0
SWD/OTHER - LINE PIPE							CONT.655	0				0
Total Tangible - Lease Equipment Cost								161,500				161,500
Total Estimated Cost		2,187,400		710,020		5,643,000		480,500		176,340		9,197,260





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

AFE # 26621009

9H

Description	Codes	BCP - Drilling		Codes	ACP - Drilling		Comp/Stim	Amount
		Amount			Amount			
Roads & Location	DIDC.100	70,000					STIM.100	5,000
Danages	DIDC.105	10,000						
Mud/Fluids Disposal	DIDC.255	200,000					STIM.255	53,000
Day Rate	DIDC.115	14 days at \$26,000/day	413,400	DICC.120	5 days at \$26,000/day	124,020		
Misc Preparation	DIDC.120	35,000						
Bits	DIDC.125	65,000		DICC.125	0		STIM.125	0
Fuel	DIDC.135	1,300 gal/day at \$3.00/gal	74,000	DICC.130	0			
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000		DICC.135	0		STIM.135	38,000
Mud & Additives	DIDC.145	225,000						
Surface Rentals	DIDC.150	Per Day (BCP)/day	86,000	DICC.140	0		STIM.140	189,000
Downhole Rentals	DIDC.155	74,000					STIM.145	0
Flowback Labor							STIM.141	0
Automation Labor								
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0					STIM.150	0
Mud Logging	DIDC.170	14 days at \$1,200/day	22,000					
Open Hole Logging	DIDC.180	0						
Cementing & Float Equipment	DIDC.185	85,000		DICC.155	150,000			
Tubular Inspections	DIDC.190	25,000		DICC.160	5,000		STIM.160	2,000
Casing Crews	DIDC.195	12,000		DICC.165	20,000		STIM.165	0
Mechanical Labor	DIDC.200	20,000		DICC.170	3,000		STIM.170	0
Trucking/Transportation	DIDC.205	15,000		DICC.175	15,000		STIM.175	2,000
Supervision	DIDC.210	80,000		DICC.180	18,000		STIM.180	74,000
Trailer House/Camp/Catering	DIDC.280	37,000		DICC.255	7,000		STIM.280	42,000
Other Misc Expenses	DIDC.220	3,000		DICC.190	0		STIM.190	145,000
Overhead	DIDC.225	10,000		DICC.195	5,000			
Remedial Cementing	DIDC.231	0					STIM.215	0
MOB/DEMOB	DIDC.240	75,000						
Directional Drilling Services	DIDC.245	201,000						
Solids Control	DIDC.260	74,000						
Well Control Equip (Snubbing Services)	DIDC.265	74,000		DICC.240	0		STIM.240	81,000
Fishing & Sidetrack Services	DIDC.270	0		DICC.245	0		STIM.245	0
Completion Rig							STIM.115	21,000
Coil Tubing Services							STIM.260	393,000
Completion Logging/Perforating/Wireline							STIM.200	410,000
Composite Plugs							STIM.390	108,000
Stimulation							STIM.210	2,926,000
Stimulation Water/Water Transfer/Water							STIM.395	702,000
Cimarex Owned Frac/Rental Equipment							STIM.305	42,000
Legal/Regulatory/Curative	DIDC.300	10,000						
Well Control Insurance	DIDC.285	\$0.35/ft	6,000					
Major Construction Overhead								
Real Time Operations Center	DIDC.560	0					STIM.560	0
FL/GL - Labor								
FL/GL - Supervision								
Survey								
SWD/Other - Labor								
SWD/OTHER - SUPERVISION								
Contingency	DIDC.435	500 % of Drilling Intangibles	100,000	DICC.220	17,000		STIM.220	262,000
Contingency								
P&A Costs	DIDC.295	0		DICC.275	0			
Total Intangible Cost		2,104,400			364,020			5,495,000
Drive Pipe	DWEB.150	0						
Conductor Pipe	DWEB.130	0						
Water String	DWEB.135	0						
Surface Casing	DWEB.140	13 3/8" - 400ft at \$35.00/ft	14,000					
Intermediate Casing 1	DWEB.145	9 5/8" - 1,876ft at \$26.00/ft	49,000					
Intermediate Casing 2	DWEB.155	0						
Drilling Liner	DWEB.160	0						
Production Casing or Liner				DWEA.100	5 1/2" - 17,139ft at \$19.00/ft	326,000		
Production Tie-Back				DWEA.165	0		STIMT.101	0
Tubing							STIMT.105	2 7/8" - 6,920ft at \$7.00/ft
Wellhead, Tree, Chokes	DWEB.115	20,000		DWEA.120	20,000		STIMT.120	25,000
Liner Hanger, Isolation Packer	DWEB.100	0		DWEA.125	0			
Packer, Nipples							STIMT.400	15,000
Pumping Unit, Engine							STIMT.405	0
Downhole Lift Equipment							STIMT.410	60,000
Surface Equipment								
Well Automation Materials								
Total Tangible - Well Equipment Cost		83,000			346,000			148,000
N/C Lease Equipment								
Tanks, Tanks Steps, Stairs								
Battery Equipment								
Secondary Containments								
Overhead Power Distribution								
Facility Electrical								
Telecommunication Equipment								
Meters and Metering Equipment								
Facility Line Pipe								
Lease Automation Materials								
FL/GL - Materials								
FL/GL - Line Pipe								
SWD/Other - Materials								
SWD/OTHER - LINE PIPE								
Total Tangible - Lease Equipment Cost								
Total Estimated Cost		2,187,400			710,020			5,643,000





9H

Description	Codes	Production Equip	Amount	Codes	Post Completion	Amount	Total	
							Cost	
Roads & Location	CON.100		8,000	PCOM.100	Pad/Road Clean Up	28,000		111,000
Damages	CON.105		2,000					12,000
Mud/Fluids Disposal				PCOM.255	3,000 BWPD for 60 days @ \$0.25/tbl	45,000		298,000
Day Rate								537,420
Misc Preparation								35,000
Bits				PCOM.125		0		65,000
Fuel				PCOM.130		0		74,000
Water for Drilling Rig (Not Frac Water)				PCOM.135		0		41,000
Mud & Additives								225,000
Surface Rentals	CON.140	4,000	PCOM.140	\$1,030/d for Production Target of 30 Days	30,900			309,900
Downhole Rentals				PCOM.145		0		74,000
Flowback Labor				PCOM.141	\$960/d for Production Target of 14 Day	13,440		13,440
Automation Labor	CON.150	25,000	PCOM.150			0		25,000
Formation Evaluation (DST, Coring, etc)								0
Mud Logging								22,000
Open Hole Logging								0
Cementing & Float Equipment								235,000
Tubular Inspections				PCOM.160		0		32,000
Casing Crews								32,000
Mechanical Labor	CON.170	90,000	PCOM.170			0		113,000
Trucking/Transportation	CON.175	6,500	PCOM.175			0		38,500
Supervision	CON.180	5,000	PCOM.180			0		177,000
Trailer House/Camp/Catering								86,000
Other Misc Expenses	CON.190	20,000	PCOM.190			0		168,000
Overhead								15,000
Remedial Cementing				PCOM.215		0		0
MOB/DEMOB								75,000
Directional Drilling Services								201,000
Solids Control								74,000
Well Control Equip (Snubbing Services)				PCOM.240		0		155,000
Fishing & Sidetrack Services				PCOM.245		0		0
Completion Rig				PCOM.115		0		21,000
Coil Tubing Services				PCOM.260		0		393,000
Completion Logging/Perforating/Wireline				PCOM.200		0		410,000
Composite Plugs				PCOM.390		0		108,000
Stimulation Pumping/Chemicals/Additives/Sand				PCOM.210		0		2,926,000
Stimulation Water/Water Transfer/Water								702,000
Cintarex Owned Frac/Rental Equipment				PCOM.305		0		42,000
Legal/Regulatory/Curative	CON.300	0						10,000
Well Control Insurance								6,000
Major Construction Overhead	CON.305	13,500						13,500
Real Time Operations Center								0
FL/GL - Labor	CON.500	94,000						94,000
FL/GL - Supervision	CON.505	7,000						7,000
Survey	CON.515	0						0
SWD/Other - Labor	CON.600	0						0
SWD/OTHER - SUPERVISION	CON.605	0						0
Contingency	CON.220	30,000	PCOM.220			0		409,000
Contingency	CON.221	14,000						14,000
P&A Costs								0
Total Intangible Cost		319,000				117,340		8,399,760
Drive Pipe								0
Conductor Pipe								0
Water String								0
Surface Casing								14,000
Intermediate Casing 1								49,000
Intermediate Casing 2								0
Drilling Liner								0
Production Casing or Liner								326,000
Production Tie-Back								0
Tubing				PCOMT.105		0		48,000
Wellhead, Tree, Chokes				PCOMT.120		0		65,000
Liner Hanger, Isolation Packer								0
Packer, Nipples				PCOMT.400		0		15,000
Pumping Unit, Engine				PCOMT.405		0		0
Downhole Lift Equipment				PCOMT.410		0		60,000
Surface Equipment				PCOMT.420	XEC Owned Sand Separator	59,000		59,000
Well Automation Materials				PCOMT.455		0		0
Total Tangible - Well Equipment Cost						59,000		636,000
N/C Lease Equipment	CONT.400	57,000						57,000
Tanks, Tanks Steps, Stairs	CONT.405	0						0
Battery Equipment	CONT.410	0						0
Secondary Containments	CONT.415	14,500						14,500
Overhead Power Distribution	CONT.420	0						0
Facility Electrical	CONT.425	22,500						22,500
Telecommunication Equipment	CONT.426	0						0
Meters and Metering Equipment	CONT.445	3,500						3,500
Facility Line Pipe	CONT.450	6,000						6,000
Lease Automation Materials	CONT.455	23,000						23,000
FL/GL - Materials	CONT.550	14,500						14,500
FL/GL - Line Pipe	CONT.555	20,500						20,500
SWD/Other - Materials	CONT.650	0						0
SWD/OTHER - LINE PIPE	CONT.655	0						0
Total Tangible - Lease Equipment Cost		161,500						161,500
Total Estimated Cost		480,500				176,340		9,197,260



## Authorization For Expenditure Drilling

AFE # 26621009

Company Entity

Date Prepared  
4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 9H	Carlsbad Bone Spring Prospect	300001-136.01	26621009
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
<input checked="" type="checkbox"/> New Supplement Revision	Formation	Well Type	Ttl Measured Depth	Ttl Vertical Depth
		DEV	18,200	8,050

Purpose Drill and complete well

## Description

Drilling Drill and complete a horizontal test. Drill to 400' set surface casing. Drill to 1876' set intermediate casing. Drill to 6823' (KOP). Drill curve at 12"/100' initial build rate to +/- 90 degrees and 7300' TVD and drill a +/- 9460' long lateral in the Bone Spring formation. Run and cement production casing. Stage frac in 48 stages. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,104,400		\$2,104,400
Completion Costs		\$6,295,360	\$6,295,360
Total Intangible Cost	\$2,104,400	\$6,295,360	\$8,399,760
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$83,000	\$553,000	\$636,000
Lease Equipment		\$161,500	\$161,500
Total Tangible Cost	\$83,000	\$714,500	\$797,500
Total Well Cost	\$2,187,400	\$7,009,860	\$9,197,260

## Comments On Well Costs

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

## Well Control Insurance

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

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

## Marketing Election

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

☐ I elect to take my gas in kind.

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

## Comments on AFE

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

## Nonoperator Approval

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

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

4/23/2019



9H

Description	BCP - Drilling		ACP - Drilling		Comp/Stim		Production Equip		Post Completion		Total	Cost
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount		
Roads & Location	DIDC.100	70,000			STIM.100	5,000	CON.100	8,000	PCOM.100	28,000	111,000	
Damages	DIDC.105	10,000					CON.105	2,000			12,000	
Mud/Fluids Disposal	DIDC.255	200,000			STIM.255	53,000			PCOM.255	45,000	298,000	
Day Rate	DIDC.115	413,400	DICC.120	124,020							537,420	
Misc Preparation	DIDC.120	35,000									35,000	
Bits	DIDC.125	65,000	DICC.125	0	STIM.125	0			PCOM.125	0	65,000	
Fuel	DIDC.135	74,000	DICC.130	0					PCOM.130	0	74,000	
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000	DICC.135	0	STIM.135	38,000			PCOM.135	0	41,000	
Mud & Additives	DIDC.145	225,000									225,000	
Surface Rentals	DIDC.150	86,000	DICC.140	0	STIM.140	189,000	CON.140	4,000	PCOM.140	30,900	309,900	
Downhole Rentals	DIDC.155	74,000			STIM.145	0			PCOM.145	0	74,000	
Flowback Labor					STIM.141	0			PCOM.141	13,440	13,440	
Automation Labor							CON.150	25,000	PCOM.150	0	25,000	
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150	0					0	
Mud Logging	DIDC.170	22,000									22,000	
Open Hole Logging	DIDC.180	0									0	
Cementing & Floor Equipment	DIDC.185	85,000	DICC.155	150,000							235,000	
Tubular Inspections	DIDC.190	25,000	DICC.160	5,000	STIM.160	2,000			PCOM.160	0	32,000	
Casing Crews	DIDC.195	12,000	DICC.165	20,000	STIM.165	0					32,000	
Mechanical Labor	DIDC.200	20,000	DICC.170	3,000	STIM.170	0	CON.170	90,000	PCOM.170	0	113,000	
Trucking/Transportation	DIDC.205	15,000	DICC.175	15,000	STIM.175	2,000	CON.175	6,500	PCOM.175	0	38,500	
Supervision	DIDC.210	80,000	DICC.180	18,000	STIM.180	74,000	CON.180	5,000	PCOM.180	0	177,000	
Trailer House/Camp/Catering	DIDC.280	37,000	DICC.255	7,000	STIM.280	42,000					86,000	
Other Misc Expenses	DIDC.220	3,000	DICC.190	0	STIM.190	145,000	CON.190	20,000	PCOM.190	0	168,000	
Overhead	DIDC.225	10,000	DICC.195	5,000							15,000	
Remedial Cementing	DIDC.231	0			STIM.215	0			PCOM.215	0	0	
MOB/DEMOB	DIDC.240	75,000									75,000	
Directional Drilling Services	DIDC.245	201,000									201,000	
Solids Control	DIDC.260	74,000									74,000	
Well Control Equip (Snubbing Services)	DIDC.265	74,000	DICC.240	0	STIM.240	81,000			PCOM.240	0	155,000	
Fishing & Sidetrack Services	DIDC.270	0	DICC.245	0	STIM.245	0			PCOM.245	0	0	
Completion Rig					STIM.115	21,000			PCOM.115	0	21,000	
Coil Tubing Services					STIM.260	393,000			PCOM.260	0	393,000	
Completion Logging/Perforating/Wireline					STIM.200	410,000			PCOM.200	0	410,000	
Composite Plugs					STIM.390	108,000			PCOM.390	0	108,000	
Stimulation Pumping/Chemicals/Additives/Sand					STIM.210	2,926,000			PCOM.210	0	2,926,000	
Stimulation Water/Water Transfer/Water Storage					STIM.395	702,000					702,000	
Cimarex Owned Frac/Rental Equipment					STIM.305	42,000			PCOM.305	0	42,000	
Legal/Regulatory/Curative	DIDC.300	10,000					CON.300	0			10,000	
Well Control Insurance	DIDC.285	6,000									6,000	
Major Construction Overhead							CON.305	13,500			13,500	
Real Time Operations Center	DIDC.560	0			STIM.560	0					0	
FL/GL - Labor							CON.500	94,000			94,000	
FL/GL - Supervision							CON.505	7,000			7,000	
Survey							CON.515	0			0	
SWD/Other - Labor							CON.600	0			0	
SWD/OTHER - SUPERVISION							CON.605	0			0	
Contingency	DIDC.435	100,000	DICC.220	17,000	STIM.220	262,000	CON.220	30,000	PCOM.220	0	409,000	
Contingency							CON.221	14,000			14,000	
P&A Costs	DIDC.295	0	DICC.275	0							0	
Total Intangible Cost		2,104,400		364,020		5,495,000		319,000		117,340	8,399,760	
Drive Pipe	DWEB.150	0									0	
Conductor Pipe	DWEB.130	0									0	
Water String	DWEB.135	0									0	
Surface Casing	DWEB.140	14,000									14,000	
Intermediate Casing 1	DWEB.145	49,000									49,000	
Intermediate Casing 2	DWEB.155	0									0	
Drilling Liner	DWEB.160	0									0	
Production Casing or Liner			DWEA.100	326,000							326,000	
Production Tie-Back			DWEA.165	0	STIMT.101	0					0	
Tubing					STIMT.105	48,000			PCOMT.105	0	48,000	
Wellhead, Tree, Chokes	DWEB.115	20,000	DWEA.120	20,000	STIMT.120	25,000			PCOMT.120	0	65,000	
Liner Hanger, Isolation Packer	DWEB.100	0	DWEA.125	0							0	
Packer, Nipples					STIMT.400	15,000			PCOMT.400	0	15,000	
Pumping Unit, Engine					STIMT.405	0			PCOMT.405	0	0	
Downhole Lift Equipment					STIMT.410	60,000			PCOMT.410	0	60,000	
Surface Equipment									PCOMT.420	59,000	59,000	
Well Automation Materials									PCOMT.455	0	0	
Total Tangible - Well Equipment Cost		83,000		346,000		148,000				59,000	636,000	
N/C Lease Equipment							CONT.400	57,000			57,000	
Tanks, Tanks Steps, Stairs							CONT.405	0			0	
Battery Equipment							CONT.410	0			0	
Secondary Containments							CONT.415	14,500			14,500	
Overhead Power Distribution							CONT.420	0			0	
Facility Electrical							CONT.425	22,500			22,500	
Telecommunication Equipment							CONT.426	0			0	
Meters and Metering Equipment							CONT.445	3,500			3,500	
Facility Line Pipe							CONT.450	6,000			6,000	
Lease Automation Materials							CONT.455	23,000			23,000	
FL/GL - Materials							CONT.550	14,500			14,500	
FL/GL - Line Pipe							CONT.555	20,500			20,500	
SWD/Other - Materials							CONT.650	0			0	
SWD/OTHER - LINE PIPE							CONT.655	0			0	
Total Tangible - Lease Equipment Cost								161,500			161,500	
Total Estimated Cost		2,187,400		710,020		5,643,000		480,500		176,340	9,197,260	





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

AFE # 26621009

9H

BCP - Drilling				ACP - Drilling				Comp/Stim	
Description	Codes	Amount	Codes	Amount	Codes	Amount			
Roads & Location	DIDC.100	70,000			STIM.100				
Damages	DIDC.105	10,000							
Mud/Fluids Disposal	DIDC.255	200,000			STIM.255				
Day Rate	DIDC.115 14 days at \$26,000/day	413,400	DICC.120 5 days at \$26,000/day	124,020					
Misc Preparation	DIDC.120	35,000							
Bits	DIDC.125	65,000	DICC.125	0	STIM.125				
Fuel	DIDC.135 1,300 gal/day at \$3.00/gal	74,000	DICC.130	0					
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000	DICC.135	0	STIM.135				
Mud & Additives	DIDC.145	225,000							
Surface Rentals	DIDC.150 Per Day (BCP)/day	86,000	DICC.140	0	STIM.140				
Downhole Rentals	DIDC.155	74,000			STIM.145				
Flowback Labor					STIM.141				
Automation Labor									
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150				
Mud Logging	DIDC.170 14 days at \$1,200/day	22,000							
Open Hole Logging	DIDC.180	0							
Cementing & Float Equipment	DIDC.185	85,000	DICC.155	150,000					
Tubular Inspections	DIDC.190	25,000	DICC.160	5,000	STIM.160				
Casing Crews	DIDC.195	12,000	DICC.165	20,000	STIM.165				
Mechanical Labor	DIDC.200	20,000	DICC.170	3,000	STIM.170				
Trucking/Transportation	DIDC.205	15,000	DICC.175	15,000	STIM.175				
Supervision	DIDC.210	80,000	DICC.180	18,000	STIM.180				
Trailer House/Camp/Catering	DIDC.280	37,000	DICC.255	7,000	STIM.280				
Other Misc Expenses	DIDC.220	3,000	DICC.190	0	STIM.190				
Overhead	DIDC.225	10,000	DICC.195	5,000					
Remedial Cementing	DIDC.231	0			STIM.215				
MOB/DEMOP	DIDC.240	75,000							
Directional Drilling Services	DIDC.245	201,000							
Solids Control	DIDC.260	74,000							
Well Control Equip (Snubbing Services)	DIDC.265	74,000	DICC.240	0	STIM.240				
Fishing & Sidetrack Services	DIDC.270	0	DICC.245	0	STIM.245				
Completion Rig					STIM.115				
Coil Tubing Services					STIM.260				
Completion Logging/Perforating/Wireline					STIM.200				
Composite Plugs					STIM.390				
Stimulation					STIM.210				
Stimulation Water/Water Transfer/Water					STIM.395				
Cimarex Owned Frac/Rental Equipment					STIM.305				
Legal/Regulatory/Curative	DIDC.300	10,000							
Well Control Insurance	DIDC.285 \$0.35/ft	6,000							
Major Construction Overhead									
Real Time Operations Center	DIDC.560	0			STIM.560				
FL/GL - Labor									
FL/GL - Supervision									
Survey									
SWD/Other - Labor									
SWD/OTHER - SUPERVISION									
Contingency	DIDC.435 500 % of Drilling Intangibles	100,000	DICC.220	17,000	STIM.220				
Contingency									
P&A Costs	DIDC.295	0	DICC.275	0					
Total Intangible Cost		2,104,400		364,020					
Drive Pipe	DWEB.150	0							
Conductor Pipe	DWEB.130	0							
Water String	DWEB.135	0							
Surface Casing	DWEB.140 13 3/8" - 400ft at \$35.00/ft	14,000							
Intermediate Casing 1	DWEB.145 9 5/8" - 1,876ft at \$26.00/ft	49,000							
Intermediate Casing 2	DWEB.155	0							
Drilling Liner	DWEB.160	0							
Production Casing or Liner			DWEA.100 5 1/2" - 17,139ft at \$19.00/ft	326,000					
Production Tie-Back			DWEA.165	0	STIMT.101				
Tubing					STIMT.105 2 7/8" - 6,920ft at \$7.00/ft				
Wellhead, Tree, Chokes	DWEB.115	20,000	DWEA.120	20,000	STIMT.120				
Liner Hanger, Isolation Packer	DWEB.100	0	DWEA.125	0					
Packer, Nipples					STIMT.400				
Pumping Unit, Engine					STIMT.405				
Downhole Lift Equipment					STIMT.410				
Surface Equipment									
Well Automation Materials									
Total Tangible - Well Equipment Cost		93,000		346,000					
N/C Lease Equipment									
Tanks, Tanks Steps, Stairs									
Battery Equipment									
Secondary Containments									
Overhead Power Distribution									
Facility Electrical									
Telecommunication Equipment									
Meters and Metering Equipment									
Facility Line Pipe									
Lease Automation Materials									
FL/GL - Materials									
FL/GL - Line Pipe									
SWD/Other - Materials									
SWD/OTHER - LINE PIPE									
Total Tangible - Lease Equipment Cost									
Total Estimated Cost		2,187,400		710,020					



9H

Description	Codes	Production Equip		Post Completion		Total	
		Amount	Codes	Amount	Cost		
Roads & Location	CON.100	8,000	PCOM.100	Pad/Road Clean Up	28,000	111,000	
Damages	CON.105	2,000				12,000	
Mud/Fluids Disposal			PCOM.255	3,000 BWPD for 60 days @ \$0.25/bbl	45,000	298,000	
Day Rate						537,420	
Misc Preparation						35,000	
Bits			PCOM.125		0	65,000	
Fuel			PCOM.130		0	74,000	
Water for Drilling Rig (Not Frac Water)			PCOM.135		0	41,000	
Mud & Additives						225,000	
Surface Rentals	CON.140	4,000	PCOM.140	\$1,030/d for Production Target of 30 Days	30,900	309,900	
Downhole Rentals			PCOM.145		0	74,000	
Flowback Labor			PCOM.141	\$960/d for Production Target of 14 Day	13,440	13,440	
Automation Labor	CON.150	25,000	PCOM.150		0	25,000	
Formation Evaluation (DST, Coring, etc.)						0	
Mud Logging						22,000	
Open Hole Logging						0	
Cementing & Floor Equipment						235,000	
Tubular Inspections			PCOM.160		0	32,000	
Casing Crews						32,000	
Mechanical Labor	CON.170	90,000	PCOM.170		0	113,000	
Trucking/Transportation	CON.175	6,500	PCOM.175		0	38,500	
Supervision	CON.180	5,000	PCOM.180		0	177,000	
Trailer House/Camp/Catering						86,000	
Other Misc Expenses	CON.190	20,000	PCOM.190		0	168,000	
Overhead						15,000	
Remedial Cementing			PCOM.215		0	0	
MOB/DEMOS						75,000	
Directional Drilling Services						201,000	
Solids Control						74,000	
Well Control Equip (Snubbing Services)			PCOM.240		0	155,000	
Fishing & Sidetrack Services			PCOM.245		0	0	
Completion Rig			PCOM.115		0	21,000	
Coil Tubing Services			PCOM.260		0	393,000	
Completion Logging/Perforating/Wireline			PCOM.200		0	410,000	
Composite Plugs			PCOM.390		0	108,000	
Stimulation Pumping/Chemicals/Additives/Sand			PCOM.210		0	2,926,000	
Stimulation Water/Water Transfer/Water						702,000	
Cimarex Owned Frac/Rental Equipment			PCOM.305		0	42,000	
Legal/Regulatory/Curative	CON.300	0				10,000	
Well Control Insurance						6,000	
Major Construction Overhead	CON.305	13,500				13,500	
Real Time Operations Center						0	
FL/GL - Labor	CON.500	94,000				94,000	
FL/GL - Supervision	CON.505	7,000				7,000	
Survey	CON.515	0				0	
SWD/Other - Labor	CON.600	0				0	
SWD/OTHER - SUPERVISION	CON.605	0				0	
Contingency	CON.220	30,000	PCOM.220		0	409,000	
Contingency	CON.221	14,000				14,000	
P&A Costs						0	
Total Intangible Cost		319,000			117,340	8,399,760	
Drive Pipe						0	
Conductor Pipe						0	
Water String						0	
Surface Casing						14,000	
Intermediate Casing 1						49,000	
Intermediate Casing 2						0	
Drilling Liner						0	
Production Casing or Liner						326,000	
Production Tie-Back						0	
Tubing			PCQMT.105		0	48,000	
Wellhead, Tree, Chokes			PCQMT.120		0	65,000	
Liner Hanger, Isolation Packer						0	
Packer, Nipples			PCQMT.400		0	15,000	
Pumping Unit, Engine			PCQMT.405		0	0	
Downhole Lift Equipment			PCQMT.410		0	60,000	
Surface Equipment			PCQMT.420	XEC Owned Sand Separator	59,000	59,000	
Well Automation Materials			PCQMT.455		0	0	
Total Tangible - Well Equipment Cost					59,000	636,000	
N/C Lease Equipment	CONT.400	57,000				57,000	
Tanks, Tanks Steps, Stairs	CONT.405	0				0	
Battery Equipment	CONT.410	0				0	
Secondary Containments	CONT.415	14,500				14,500	
Overhead Power Distribution	CONT.420	0				0	
Facility Electrical	CONT.425	22,500				22,500	
Telecommunication Equipment	CONT.426	0				0	
Meters and Metering Equipment	CONT.445	3,500				3,500	
Facility Line Pipe	CONT.450	6,000				6,000	
Lease Automation Materials	CONT.455	23,000				23,000	
FL/GL - Materials	CONT.550	14,500				14,500	
FL/GL - Line Pipe	CONT.555	20,500				20,500	
SWD/Other - Materials	CONT.650	0				0	
SWD/OTHER - LINE PIPE	CONT.655	0				0	
Total Tangible - Lease Equipment Cost		161,500				161,500	
Total Estimated Cost		480,500			176,340	9,197,260	



## Authorization For Expenditure Drilling

AFE # 26621011

Company Entity

Date Prepared  
4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 11H	Carlsbad Bone Spring Prospect	300001-138.01	26621011
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
<input checked="" type="checkbox"/> New <input type="checkbox"/> Supplement <input type="checkbox"/> Revision	Formation	Well Type	Ttl Measured Depth	Ttl Vertical Depth
	Bone Spring 2 /Sd/	DEV	17,650	7,450

Purpose Drill and complete well

## Description

Drilling Drill and complete a horizontal test. Drill to 400' set surface casing. Drill to 1876' set intermediate casing. Drill to 7203' (KOP). Drill curve at 12"/100' initial build rate to +/- 90 degrees and 7680' TVD and drill a +/- 9460' long lateral in the Bone Spring formation. Run and cement production casing. Stage frac in 48 stages. Drill out plugs. Run production packer, tubing and GLVs.

<b>Intangible</b>	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,104,400		\$2,104,400
Completion Costs		\$6,258,860	\$6,258,860
<b>Total Intangible Cost</b>	<b>\$2,104,400</b>	<b>\$6,258,860</b>	<b>\$8,363,260</b>
<b>Tangible</b>	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$83,000	\$563,000	\$646,000
Lease Equipment		\$160,000	\$160,000
<b>Total Tangible Cost</b>	<b>\$83,000</b>	<b>\$723,000</b>	<b>\$806,000</b>
<b>Total Well Cost</b>	<b>\$2,187,400</b>	<b>\$6,981,860</b>	<b>\$9,169,260</b>

## Comments On Well Costs

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

## Well Control Insurance

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

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

## Marketing Election

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

☒ I elect to take my gas in kind.

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

## Comments on AFE

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

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

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

4/23/2019





Description	BCP - Drilling		ACP - Drilling		Comp/Stim		Production Equip		Post Completion		Total
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Cost
Roads & Location	DIDC.100	70,000			STIM.100	5,000	CON.100	8,000	PCOM.100	28,000	111,000
Damages	DIDC.105	10,000					CON.105	2,500			12,500
Mud/Fluids Disposal	DIDC.255	200,000			STIM.255	53,000			PCOM.255	45,000	298,000
Day Rate	DIDC.115	413,400	DICC.120	124,020							537,420
Misc Preparation	DIDC.120	35,000									35,000
Bits	DIDC.125	65,000	DICC.125	0	STIM.125	0			PCOM.125	0	65,000
Fuel	DIDC.135	74,000	DICC.130	0					PCOM.130	0	74,000
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000	DICC.135	0	STIM.135	38,000			PCOM.135	0	41,000
Mud & Additives	DIDC.145	225,000									225,000
Surface Rentals	DIDC.150	86,000	DICC.140	0	STIM.140	189,000	CON.140	4,000	PCOM.140	30,900	309,900
Downhole Rentals	DIDC.155	74,000			STIM.145	0			PCOM.145	0	74,000
Flowback Labor					STIM.141	0			PCOM.141	13,440	13,440
Automation Labor							CON.150	25,000	PCOM.150	0	25,000
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150	0					0
Mud Logging	DIDC.170	22,000									22,000
Open Hole Logging	DIDC.180	0									0
Cementing & Float Equipment	DIDC.185	85,000	DICC.155	150,000							235,000
Tubular Inspections	DIDC.190	25,000	DICC.160	5,000	STIM.160	2,000			PCOM.160	0	32,000
Casing Crews	DIDC.195	12,000	DICC.165	20,000	STIM.165	0					32,000
Mechanical Labor	DIDC.200	20,000	DICC.170	3,000	STIM.170	0	CON.170	52,000	PCOM.170	0	75,000
Trucking/Transportation	DIDC.205	15,000	DICC.175	15,000	STIM.175	2,000	CON.175	6,500	PCOM.175	0	38,500
Supervision	DIDC.210	80,000	DICC.180	18,000	STIM.180	74,000	CON.180	5,000	PCOM.180	0	177,000
Trailer House/Camp/Catering	DIDC.280	37,000	DICC.255	7,000	STIM.280	42,000					86,000
Other Misc Expenses	DIDC.220	3,000	DICC.190	0	STIM.190	145,000	CON.190	20,000	PCOM.190	0	168,000
Overhead	DIDC.225	10,000	DICC.195	5,000							15,000
Remedial Cementing	DIDC.231	0			STIM.215	0			PCOM.215	0	0
MOB/DEMOS	DIDC.240	75,000									75,000
Directional Drilling Services	DIDC.245	201,000									201,000
Solids Control	DIDC.260	74,000									74,000
Well Control Equip (Snubbing Services)	DIDC.265	74,000	DICC.240	0	STIM.240	81,000			PCOM.240	0	155,000
Fishing & Siderack Services	DIDC.270	0	DICC.245	0	STIM.245	0			PCOM.245	0	0
Completion Rig					STIM.115	21,000			PCOM.115	0	21,000
Coil Tubing Services					STIM.260	393,000			PCOM.260	0	393,000
Completion Logging/Perforating/Wireline					STIM.200	410,000			PCOM.200	0	410,000
Composite Plugs					STIM.390	108,000			PCOM.390	0	108,000
Stimulation Pumping/Chemicals/Additives/Sand					STIM.210	2,926,000			PCOM.210	0	2,926,000
Stimulation Water/Water Transfer/Water Storage					STIM.395	702,000					702,000
Cimarex Owned Frac/Rental Equipment					STIM.305	42,000			PCOM.305	0	42,000
Legal/Regulatory/Curative	DIDC.300	10,000					CON.300	0			10,000
Well Control Insurance	DIDC.285	6,000									6,000
Major Construction Overhead							CON.305	12,500			12,500
Real Time Operations Center	DIDC.560	0			STIM.560	0					0
FL/GL - Labor							CON.500	99,500			99,500
FL/GL - Supervision							CON.505	7,000			7,000
Survey							CON.515	0			0
SWD/Other - Labor							CON.600	0			0
SWD/OTHER - SUPERVISION							CON.605	0			0
Contingency	DIDC.435	100,000	DICC.220	17,000	STIM.220	262,000	CON.220	25,500	PCOM.220	0	404,500
Contingency							CON.221	15,000			15,000
P&A Costs	DIDC.295	0	DICC.275	0							0
Total Intangible Cost		2,104,400		364,020		5,495,000		282,500		117,340	8,363,260
Drive Pipe	DWEB.150	0									0
Conductor Pipe	DWEB.130	0									0
Water String	DWEB.135	0									0
Surface Casing	DWEB.140	14,000									14,000
Intermediate Casing 1	DWEB.145	49,000									49,000
Intermediate Casing 2	DWEB.155	0									0
Drilling Liner	DWEB.160	0									0
Production Casing or Liner			DWEA.100	333,000							333,000
Production Tie-Back			DWEA.165	0	STIMT.101	0					0
Tubing					STIMT.105	51,000			PCOMT.105	0	51,000
Wellhead, Tree, Chokes	DWEB.115	20,000	DWEA.120	20,000	STIMT.120	25,000			PCOMT.120	0	65,000
Liner Hanger, Isolation Packer	DWEB.100	0	DWEA.125	0							0
Packer, Nipples					STIMT.400	15,000			PCOMT.400	0	15,000
Pumping Unit, Engine					STIMT.405	0			PCOMT.405	0	0
Downhole Lift Equipment					STIMT.410	60,000			PCOMT.410	0	60,000
Surface Equipment									PCOMT.420	59,000	59,000
Well Automation Materials									PCOMT.455	0	0
Total Tangible - Well Equipment Cost		83,000		353,000		151,000				59,000	646,000
N/C Lease Equipment							CONT.400	57,000			57,000
Tanks, Tanks Steps, Stairs							CONT.405	0			0
Battery Equipment							CONT.410	0			0
Secondary Containments							CONT.415	8,500			8,500
Overhead Power Distribution							CONT.420	0			0
Facility Electrical							CONT.425	22,500			22,500
Telecommunication Equipment							CONT.426	0			0
Meters and Metering Equipment							CONT.445	3,500			3,500
Facility Line Pipe							CONT.450	6,000			6,000
Lease Automation Materials							CONT.455	23,000			23,000
FL/GL - Materials							CONT.550	14,500			14,500
FL/GL - Line Pipe							CONT.555	25,000			25,000
SWD/Other - Materials							CONT.650	0			0
SWD/OTHER - LINE PIPE							CONT.655	0			0
Total Tangible - Lease Equipment Cost								160,000			160,000
Total Estimated Cost		2,187,400		717,020		5,646,000		442,500		176,340	9,169,260



Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM  
11H

AFE # 26621011

Description	Codes	BCP - Drilling		Codes	ACP - Drilling		Comp/Stim	
		Amount			Amount		Amount	
Roads & Location	DIDC.100	70,000					STIM.100	5,000
Damages	DIDC.105	10,000						
Mud/Fluids Disposal	DIDC.255	200,000					STIM.255	53,000
Day Rate	DIDC.115 14 days at \$26,000/day	413,400		DICC.120 5 days at \$26,000/day	124,020			
Misc Preparation	DIDC.120	35,000						
Bits	DIDC.125	65,000		DICC.125	0		STIM.125	0
Fuel	DIDC.135 1,300 gal/day at \$3.00/gal	74,000		DICC.130	0			
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000		DICC.135	0		STIM.135	38,000
Mud & Additives	DIDC.145	225,000						
Surface Rentals	DIDC.150 Per Day (BCP)/day	86,000		DICC.140	0		STIM.140	189,000
Downhole Rentals	DIDC.155	74,000					STIM.145	0
Flowback Labor							STIM.141	0
Automation Labor								
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0					STIM.150	0
Mud Logging	DIDC.170 14 days at \$1,200/day	22,000						
Open Hole Logging	DIDC.180	0						
Cementing & Float Equipment	DIDC.185	85,000		DICC.155	150,000			
Tubular Inspections	DIDC.190	25,000		DICC.160	5,000		STIM.160	2,000
Casing Crews	DIDC.195	12,000		DICC.165	20,000		STIM.165	0
Mechanical Labor	DIDC.200	20,000		DICC.170	3,000		STIM.170	0
Trucking/Transportation	DIDC.205	15,000		DICC.175	15,000		STIM.175	2,000
Supervision	DIDC.210	80,000		DICC.180	18,000		STIM.180	74,000
Trailer House/Camp/Catering	DIDC.280	37,000		DICC.255	7,000		STIM.280	42,000
Other Misc Expenses	DIDC.220	3,000		DICC.190	0		STIM.190	145,000
Overhead	DIDC.225	10,000		DICC.195	5,000			
Remedial Cementing	DIDC.231	0					STIM.215	0
MOB/DEMOP	DIDC.240	75,000						
Directional Drilling Services	DIDC.245	201,000						
Solids Control	DIDC.260	74,000						
Well Control Equip (Snubbing Services)	DIDC.265	74,000		DICC.240	0		STIM.240	81,000
Fishing & Sidetrack Services	DIDC.270	0		DICC.245	0		STIM.245	0
Completion Rig							STIM.115	21,000
Coil Tubing Services							STIM.260	393,000
Completion Logging/Perforating/Wireline							STIM.200	410,000
Composite Plugs							STIM.390	108,000
Stimulation							STIM.210	2,926,000
Stimulation Water/Water Transfer/Water							STIM.395	702,000
Cimarex Owned Frac/Rental Equipment							STIM.305	42,000
Legal/Regulatory/Curative	DIDC.300	10,000						
Well Control Insurance	DIDC.285 \$0.35/ft	6,000						
Major Construction Overhead								
Real Time Operations Center	DIDC.560	0					STIM.560	0
FL/GL - Labor								
FL/GL - Supervision								
Survey								
SWD/Other - Labor								
SWD/OTHER - SUPERVISION								
Contingency	DIDC.435 500 % of Drilling Intangibles	100,000		DICC.220	17,000		STIM.220	262,000
Contingency								
PSA Costs	DIDC.295	0		DICC.275	0			
Total Intangible Cost		2,104,400			364,020			5,495,000
Drive Pipe	DWEB.150	0						
Conductor Pipe	DWEB.130	0						
Water String	DWEB.135	0						
Surface Casing	DWEB.140 13 3/8" - 400ft at \$35.00/ft	14,000						
Intermediate Casing 1	DWEB.145 9 5/8" - 1,876ft at \$26.00/ft	49,000						
Intermediate Casing 2	DWEB.155	0						
Drilling Liner	DWEB.160	0						
Production Casing or Liner				DWEA.100 5 1/2" - 17,519ft at \$19.00/ft	333,000			
Production Tie-Back				DWEA.165	0		STIMT.101	0
Tubing							STIMT.105 2 7/8" - 7,300ft at \$7.00/ft	51,000
Wellhead, Tree, Chokes	DWEB.115	20,000		DWEA.120	20,000		STIMT.120	25,000
Liner Hanger, Isolation Packer	DWEB.100	0		DWEA.125	0			
Packer, Nipples							STIMT.400	15,000
Pumping Unit, Engine							STIMT.405	0
Downhole Lift Equipment							STIMT.410	60,000
Surface Equipment								
Well Automation Materials								
Total Tangible - Well Equipment Cost		83,000			353,000			151,000
N/C Lease Equipment								
Tanks, Tanks Steps, Stairs								
Battery Equipment								
Secondary Containments								
Overhead Power Distribution								
Facility Electrical								
Telecommunication Equipment								
Meters and Metering Equipment								
Facility Line Pipe								
Lease Automation Materials								
FL/GL - Materials								
FL/GL - Line Pipe								
SWD/Other - Materials								
SWD/OTHER - LINE PIPE								
Total Tangible - Lease Equipment Cost								
Total Estimated Cost		2,187,400			717,020			5,646,000



Description	Codes	Amount	Cdr	Post Completion	Amount	Total
Roads & Location	CON 100	8,000	PCOM 100	Pad/Road Clean Up	28,000	111,000
Damages	CON 105	2,500			12,500	
Mud/Fluids Disposal			PCOM 255	3,000 BWPD for 60 days @ \$0.25/bbl	45,000	537,420
Misc Preparation					35,000	
Bits			PCOM 125		65,000	
Fuel			PCOM 130		74,000	
Water for Drilling Rig (Not For Water)			PCOM 135		41,000	
Mud & Additives					0	
Surface Rentals	CON 140	4,000	PCOM 140	\$1,030/d for Production Target of 30 Days	30,900	225,000
Downhole Rentals			PCOM 145		74,000	
Flowback Labor			PCOM 141	\$960/d for Production Target of 14 Day	13,440	
Automation Labor	CON 150	25,000	PCOM 150		25,000	
Formation Evaluation (DST, Coring, etc.)					0	
Mud Logging					22,000	
Open Hole Logging					0	
Cementing & Float Equipment					235,000	
Tubular Inspections			PCOM 160		32,000	
Casing Crews					32,000	
Mechanical Labor	CON 170	52,000	PCOM 170		75,000	
Trucking/Transportation	CON 175	6,500	PCOM 175		38,500	
Supervision	CON 180	5,000	PCOM 180		177,000	
Trailer House/Camp/Catering					86,000	
Other Misc Expenses	CON 190	20,000	PCOM 190		168,000	
Remedial Cementing			PCOM 215		15,000	
Directional Drilling Services					75,000	
Solids Control			PCOM 240		74,000	
Well Control Equip (Snubbing Services)					155,000	
Fishing & Side-track Services			PCOM 245		0	
Completion Rig			PCOM 115		21,000	
Coil Tubing Services			PCOM 260		393,000	
Completion Logging/Perforating/Wireline			PCOM 200		410,000	
Composite Plugs			PCOM 390		108,000	
Stimulation Pumping/Chemicals/Additives/Sand			PCOM 210		2,926,000	
Stimulation Water/Water Transfer/Water					702,000	
Cemented Fracturing Equipment			PCOM 305		42,000	
Legal/Regulatory/Cumulative	CON 300	0			10,000	
Well Control Insurance					6,000	
Major Construction Overhead	CON 305	12,500			12,500	
Real Time Operations Center					0	
R/L - Labor	CON 500	99,500			99,500	
R/L - Supervision	CON 505	7,000			7,000	
Survey	CON 515	0			0	
SVD/Other - Labor	CON 600	0			0	
SVD/OTHER - SUPERVISION	CON 605	0			0	
Contingency	CON 220	25,500	PCOM 220		404,500	
Contingency	CON 221	15,000			15,000	
P&A Costs					0	
Drive Pipe					0	
Conductor Pipe					0	
Water String					0	
Surface Casing					14,000	
Intermediate Casing 1					49,000	
Intermediate Casing 2					0	
Drilling Liner					0	
Production Casing or Liner					333,000	
Production The-Back					0	
Tubing			PCOM 1105		51,000	
Wellhead, Tree, Chokes			PCOM 1120		65,000	
Liner Hanger, Isolation Packer					0	
Packer, Nipples			PCOM 400		15,000	
Pumping Unit, Engine			PCOM 405		0	
Downhole Lift Equipment			PCOM 410		60,000	
Surface Equipment			PCOM 420		0	
Well Automation Materials			PCOM 455		0	
Total Tangle - Well Equipment Cont					59,000	
N/C Lease Equipment	CON 400	57,000			57,000	
Tanks, Tanks Steps, Stairs	CON 405	0			0	
Battery Equipment	CON 410	0			0	
Secondary Containment	CON 415	8,500			8,500	
Overhead Power Distribution	CON 420	0			0	
Facility Electrical	CON 425	22,500			22,500	
Telecommunication Equipment	CON 435	0			0	
Meters and Metering Equipment	CON 445	3,500			3,500	
Facility Line Pipe	CON 450	6,000			6,000	
Lease Automation Materials	CON 455	23,000			23,000	
R/L - Materials	CON 555	14,500			14,500	
R/L - Line Pipe	CON 555	25,000			25,000	
SVD/Other - Materials	CON 650	0			0	
SVD/OTHER - LINE PIPE	CON 655	0			0	
Total Tangle - Lease Equipment Cont					160,000	
Total Estimated Cost		442,500			176,340	9,169,260





## Authorization For Expenditure Drilling

AFE # 26621011

Company Entity

Date Prepared  
4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 11H	Carlsbad Bone Spring Prospect	300001-138.01	26621011
County, State	Location	Estimated Spud	Estimated Completion	
Eddy, NM	SHL: W/2 of Section 34, Township 25 South, Range 26 East, Eddy County, NM BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy County, NM	1/1/2021	2/1/2021	
<input checked="" type="checkbox"/> New Supplement Revision	Formation	Well Type	Ttl Measured Depth	Ttl Vertical Depth
	Bone Spring 2 /Sd/	DEV	17,650	7,450

Purpose Drill and complete well

## Description

Drilling Drill and complete a horizontal test. Drill to 400' set surface casing. Drill to 1876' set intermediate casing. Drill to 7203' (KOP). Drill curve at 12"/100' initial build rate to +/- 90 degrees and 7680' TVD and drill a +/- 9460' long lateral in the Bone Spring formation. Run and cement production casing. Stage frac in 48 stages. Drill out plugs. Run production packer, tubing and GLVs.

Intangible	Dry Hole	After Casing Point	Completed Well Cost
Drilling Costs	\$2,104,400		\$2,104,400
Completion Costs		\$6,258,860	\$6,258,860
<b>Total Intangible Cost</b>	<b>\$2,104,400</b>	<b>\$6,258,860</b>	<b>\$8,363,260</b>
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$83,000	\$563,000	\$646,000
Lease Equipment		\$160,000	\$160,000
<b>Total Tangible Cost</b>	<b>\$83,000</b>	<b>\$723,000</b>	<b>\$806,000</b>
<b>Total Well Cost</b>	<b>\$2,187,400</b>	<b>\$6,981,860</b>	<b>\$9,169,260</b>

## Comments On Well Costs

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

## Well Control Insurance

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

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

## Marketing Election

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

**I elect to take my gas in kind.**

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

## Comments on AFE

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

## Nonoperator Approval

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

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

4/23/2019



Description	BCP - Drilling		ACP - Drilling		Comp/Stim		Production Equip		Post Completion		Total	
	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount	Codes	Amount		Cost
Roads & Location	DIDC.100	70,000			STIM.100	5,000	CON.100	8,000	PCOM.100	28,000		111,000
Damages	DIDC.105	10,000					CON.105	2,500				12,500
Mud/Fluids Disposal	DIDC.255	200,000			STIM.255	53,000			PCOM.255	45,000		298,000
Day Rate	DIDC.115	413,400	DICC.120	124,020								537,420
Misc Preparation	DIDC.120	35,000										35,000
Bits	DIDC.125	65,000	DICC.125	0	STIM.125	0			PCOM.125	0		65,000
Fuel	DIDC.135	74,000	DICC.130	0					PCOM.130	0		74,000
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000	DICC.135	0	STIM.135	38,000			PCOM.135	0		41,000
Mud & Additives	DIDC.145	225,000										225,000
Surface Rentals	DIDC.150	86,000	DICC.140	0	STIM.140	189,000	CON.140	4,000	PCOM.140	30,900		309,900
Downhole Rentals	DIDC.155	74,000			STIM.145	0			PCOM.145	0		74,000
Flowback Labor					STIM.141	0			PCOM.141	13,440		13,440
Automation Labor							CON.150	25,000	PCOM.150	0		25,000
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150	0						0
Mud Logging	DIDC.170	22,000										22,000
Open Hole Logging	DIDC.180	0										0
Cementing & Float Equipment	DIDC.185	85,000	DICC.155	150,000								235,000
Tubular Inspections	DIDC.190	25,000	DICC.160	5,000	STIM.160	2,000			PCOM.160	0		32,000
Casing Crews	DIDC.195	12,000	DICC.165	20,000	STIM.165	0						32,000
Mechanical Labor	DIDC.200	20,000	DICC.170	3,000	STIM.170	0	CON.170	52,000	PCOM.170	0		75,000
Trucking/Transportation	DIDC.205	15,000	DICC.175	15,000	STIM.175	2,000	CON.175	6,500	PCOM.175	0		38,500
Supervision	DIDC.210	80,000	DICC.180	18,000	STIM.180	74,000	CON.180	5,000	PCOM.180	0		177,000
Trailer House/Camp/Catering	DIDC.280	37,000	DICC.255	7,000	STIM.280	42,000						86,000
Other Misc Expenses	DIDC.220	3,000	DICC.190	0	STIM.190	145,000	CON.190	20,000	PCOM.190	0		168,000
Overhead	DIDC.225	10,000	DICC.195	5,000								15,000
Remedial Cementing	DIDC.231	0			STIM.215	0			PCOM.215	0		0
MOB/DEMOB	DIDC.240	75,000										75,000
Directional Drilling Services	DIDC.245	201,000										201,000
Solids Control	DIDC.260	74,000										74,000
Well Control Equip (Snubbing Services)	DIDC.265	74,000	DICC.240	0	STIM.240	81,000			PCOM.240	0		155,000
Fishing & Sidetrack Services	DIDC.270	0	DICC.245	0	STIM.245	0			PCOM.245	0		0
Completion Rig					STIM.115	21,000			PCOM.115	0		21,000
Coil Tubing Services					STIM.260	393,000			PCOM.260	0		393,000
Completion Logging/Perforating/Wireline					STIM.200	410,000			PCOM.200	0		410,000
Composite Plugs					STIM.390	108,000			PCOM.390	0		108,000
Stimulation Pumping/Chemicals/Additives/Sand					STIM.210	2,926,000			PCOM.210	0		2,926,000
Stimulation Water/Water Transfer/Water Storage					STIM.395	702,000						702,000
Cimarex Owned Frac/Rental Equipment					STIM.305	42,000			PCOM.305	0		42,000
Legal/Regulatory/Curative	DIDC.300	10,000					CON.300	0				10,000
Well Control Insurance	DIDC.285	6,000										6,000
Major Construction Overhead							CON.305	12,500				12,500
Real Time Operations Center	DIDC.560	0			STIM.560	0						0
FL/GL - Labor							CON.500	99,500				99,500
FL/GL - Supervision							CON.505	7,000				7,000
Survey							CON.515	0				0
SWD/Other - Labor							CON.600	0				0
SWD/OTHER - SUPERVISION							CON.605	0				0
Contingency	DIDC.435	100,000	DICC.220	17,000	STIM.220	262,000	CON.220	25,500	PCOM.220	0		404,500
Contingency							CON.221	15,000				15,000
P&A Costs	DIDC.295	0	DICC.275	0								0
Total Intangible Cost		2,104,400		364,020		5,495,000		282,500		117,340		8,363,260
Drive Pipe	DWEB.150	0										0
Conductor Pipe	DWEB.130	0										0
Water String	DWEB.115	0										0
Surface Casing	DWEB.140	14,000										14,000
Intermediate Casing 1	DWEB.145	49,000										49,000
Intermediate Casing 2	DWEB.155	0										0
Drilling Liner	DWEB.160	0										0
Production Casing or Liner			DWEA.100	333,000								333,000
Production Tie-Back			DWEA.165	0	STIMT.101	0						0
Tubing					STIMT.105	51,000			PCOMT.105	0		51,000
Wellhead, Tree, Chokes	DWEB.115	20,000	DWEA.120	20,000	STIMT.120	25,000			PCOMT.120	0		65,000
Liner Hanger, Isolation Packer	DWEB.100	0	DWEA.125	0								0
Packer, Nipples					STIMT.400	15,000			PCOMT.400	0		15,000
Pumping Unit, Engine					STIMT.405	0			PCOMT.405	0		0
Downhole Lift Equipment					STIMT.410	60,000			PCOMT.410	0		60,000
Surface Equipment									PCOMT.420	59,000		59,000
Well Automation Materials									PCOMT.455	0		0
Total Tangible - Well Equipment Cost		83,000		353,000		151,000				59,000		646,000
N/C Lease Equipment							CONT.400	57,000				57,000
Tanks, Tanks Steps, Stairs							CONT.405	0				0
Battery Equipment							CONT.410	0				0
Secondary Containments							CONT.415	8,500				8,500
Overhead Power Distribution							CONT.420	0				0
Facility Electrical							CONT.425	22,500				22,500
Telecommunication Equipment							CONT.426	0				0
Meters and Metering Equipment							CONT.445	3,500				3,500
Facility Line Pipe							CONT.450	6,000				6,000
Lease Automation Materials							CONT.455	23,000				23,000
FL/GL - Materials							CONT.550	14,500				14,500
FL/GL - Line Pipe							CONT.555	25,000				25,000
SWD/Other - Materials							CONT.650	0				0
SWD/OTHER - LINE PIPE							CONT.655	0				0
Total Tangible - Lease Equipment Cost								160,000				160,000
Total Estimated Cost		2,187,400		717,020		5,646,000		442,500		176,340		9,169,260



11H

		BCP - Drilling		ACP - Drilling		Comp/Stim	
Description	Codes	Amount	Codes	Amount	Codes	Amount	
Roads & Location	DIDC.100	70,000			STIM.100	5,000	
Damages	DIDC.105	10,000					
Mud/Fluids Disposal	DIDC.255	200,000			STIM.255	53,000	
Day Rate	DIDC.115 14 days at \$26,000/day	413,400	DICC.120 5 days at \$26,000/day	124,020			
Misc Preparation	DIDC.120	35,000					
Bits	DIDC.125	65,000	DICC.125	0	STIM.125	0	
Fuel	DIDC.135 1,300 gal/day at \$3.00/gal	74,000	DICC.130	0			
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000	DICC.135	0	STIM.135	38,000	
Mud & Additives	DIDC.145	225,000					
Surface Rentals	DIDC.150 Per Day (BCP)/day	86,000	DICC.140	0	STIM.140	189,000	
Downhole Rentals	DIDC.155	74,000			STIM.145	0	
Flowback Labor					STIM.141	0	
Automation Labor							
Formation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150	0	
Mud Logging	DIDC.170 14 days at \$1,200/day	22,000					
Open Hole Logging	DIDC.180	0					
Cementing & Float Equipment	DIDC.185	85,000	DICC.155	150,000			
Tubular Inspections	DIDC.190	25,000	DICC.160	5,000	STIM.160	2,000	
Casing Crews	DIDC.195	12,000	DICC.165	20,000	STIM.165	0	
Mechanical Labor	DIDC.200	20,000	DICC.170	3,000	STIM.170	0	
Trucking/Transportation	DIDC.205	15,000	DICC.175	15,000	STIM.175	2,000	
Supervision	DIDC.210	80,000	DICC.180	18,000	STIM.180	74,000	
Trailer House/Camp/Catering	DIDC.280	37,000	DICC.255	7,000	STIM.280	42,000	
Other Misc Expenses	DIDC.220	3,000	DICC.190	0	STIM.190	145,000	
Overhead	DIDC.225	10,000	DICC.195	5,000			
Remedial Cementing	DIDC.231	0			STIM.215	0	
MOB/DEMOB	DIDC.240	75,000					
Directional Drilling Services	DIDC.245	201,000					
Solids Control	DIDC.260	74,000					
Well Control Equip (Snubbing Services)	DIDC.265	74,000	DICC.240	0	STIM.240	81,000	
Fishing & Sidetrack Services	DIDC.270	0	DICC.245	0	STIM.245	0	
Completion Rig					STIM.115	21,000	
Coil Tubing Services					STIM.260	393,000	
Completion Logging/Perforating/Wireline					STIM.200	410,000	
Composite Plugs					STIM.390	108,000	
Stimulation					STIM.210	2,926,000	
Stimulation Water/Water Transfer/Water					STIM.395	702,000	
Cimarex Owned Frac/Rental Equipment					STIM.305	42,000	
Legal/Regulatory/Curative	DIDC.300	10,000					
Well Control Insurance	DIDC.285 \$0.35/ft	6,000					
Major Construction Overhead							
Real Time Operations Center	DIDC.560	0			STIM.560	0	
FLUGL - Labor							
FLUGL - Supervision							
Survey							
SWD/Other - Labor							
SWD/OTHER - SUPERVISION							
Contingency	DIDC.435 500 % of Drilling Intangibles	100,000	DICC.220	17,000	STIM.220	262,000	
Contingency							
P&A Costs	DIDC.295	0	DICC.275	0			
Total Intangible Cost		2,104,400		364,020		5,495,000	
Drive Pipe	DWEB.150	0					
Conductor Pipe	DWEB.130	0					
Water String	DWEB.135	0					
Surface Casing	DWEB.140 13 3/8" - 400ft at \$35.00/ft	14,000					
Intermediate Casing 1	DWEB.145 9 5/8" - 1,876ft at \$26.00/ft	49,000					
Intermediate Casing 2	DWEB.155	0					
Drilling Liner	DWEB.160	0					
Production Casing or Liner			DWEA.100 5 1/2" - 17,519ft at \$19.00/ft	333,000			
Production Tie-Back			DWEA.165	0	STIMT.101	0	
Tubing					STIMT.105 2 7/8" - 7,300ft at \$7.00/ft	51,000	
Wellhead, Tree, Chokes	DWEB.115	20,000	DWEA.120	20,000	STIMT.120	25,000	
Liner Hanger, Isolation Packer	DWEB.100	0	DWEA.125	0			
Packer, Nipples					STIMT.400	15,000	
Pumping Unit, Engine					STIMT.405	0	
Downhole Lift Equipment					STIMT.410	60,000	
Surface Equipment							
Well Automation Materials							
Total Tangible - Well Equipment Cost		83,000		353,000		151,000	
N/C Lease Equipment							
Tanks, Tanks Steps, Stairs							
Battery Equipment							
Secondary Containments							
Overhead Power Distribution							
Facility Electrical							
Telecommunication Equipment							
Meters and Metering Equipment							
Facility Line Pipe							
Lease Automation Materials							
FLUGL - Materials							
FLUGL - Line Pipe							
SWD/Other - Materials							
SWD/OTHER - LINE PIPE							
Total Tangible - Lease Equipment Cost							
Total Estimated Cost		2,187,400		717,020		5,646,000	





Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM  
11H

AFE # 26621011

Description	Codes	Production Equip	Amount	Codes	Post Completion	Amount	Total	
							Cost	
Roads & Location	CON.100		8,000	PCOM.100	Pad/Road Clean Up	28,000		111,000
Damages	CON.105		2,500					12,500
Mud/Fluids Disposal				PCOM.255	3,000 BWPD for 60 days @ \$0.25/bbl	45,000		298,000
Day Rate								537,420
Misc Preparation								35,000
Bits				PCOM.125		0		65,000
Fuel				PCOM.130		0		74,000
Water for Drilling Rig (Not Frac Water)				PCOM.135		0		41,000
Mud & Additives								225,000
Surface Rentals	CON.140	4,000	PCOM.140	\$1,030/d for Production Target of 30 Days	30,900			309,900
Downhole Rentals			PCOM.145		0			74,000
Flowback Labor			PCOM.141	\$960/d for Production Target of 14 Day	13,440			13,440
Automation Labor	CON.150	25,000	PCOM.150		0			25,000
Formation Evaluation (DST, Coring, etc.)								0
Mud Logging								22,000
Open Hole Logging								0
Cementing & Float Equipment								235,000
Tubular Inspections				PCOM.160		0		32,000
Casing Crews								32,000
Mechanical Labor	CON.170	52,000	PCOM.170		0			75,000
Trucking/Transportation	CON.175	6,500	PCOM.175		0			38,500
Supervision	CON.180	5,000	PCOM.180		0			177,000
Trailer House/Camp/Catering								86,000
Other Misc Expenses	CON.190	20,000	PCOM.190		0			168,000
Overhead								15,000
Remedial Cementing				PCOM.215		0		0
MOS/DEMOS								75,000
Directional Drilling Services								201,000
Solids Control								74,000
Well Control Equip (Snubbing Services)				PCOM.240		0		155,000
Fishing & Sidetrack Services				PCOM.245		0		0
Completion Rig				PCOM.115		0		21,000
Coil Tubing Services				PCOM.260		0		393,000
Completion Logging/Perforating/Wireline				PCOM.209		0		410,000
Composite Plugs				PCOM.390		0		108,000
Stimulation Pumping/Chemicals/Additives/Sand				PCOM.210		0		2,926,000
Stimulation Water/Water Transfer/Water								702,000
Cimarex Owned Frac/Rental Equipment				PCOM.305		0		42,000
Legal/Regulatory/Curative	CON.300	0						10,000
Well Control Insurance								6,000
Major Construction Overhead	CON.305	12,500						12,500
Real Time Operations Center								0
FLUGL - Labor	CON.500	99,500						99,500
FLUGL - Supervision	CON.505	7,000						7,000
Survey	CON.515	0						0
SWD/Other - Labor	CON.600	0						0
SWD/OTHER - SUPERVISION	CON.605	0						0
Contingency	CON.220	25,500	PCOM.220		0			404,500
Contingency	CON.221	15,000						15,000
P&A Costs								0
Total Intangible Cost		282,500				117,340		8,363,260
Drive Pipe								0
Conductor Pipe								0
Water String								0
Surface Casing								14,000
Intermediate Casing 1								49,000
Intermediate Casing 2								0
Drilling Liner								0
Production Casing or Liner								333,000
Production Tie-Back								0
Tubing			PCOMT.105			0		51,000
Wellhead, Tree, Chokes			PCOMT.120			0		65,000
Liner Hanger, Isolation Packer								0
Packer, Nipples			PCOMT.400			0		15,000
Pumping Unit, Engine			PCOMT.405			0		0
Downhole Lift Equipment			PCOMT.410			0		60,000
Surface Equipment			PCOMT.420	XEC Owned Sand Separator	59,000			59,000
Well Automation Materials			PCOMT.455			0		0
Total Tangible - Well Equipment Cost						59,000		646,000
N/C Lease Equipment	CONT.400	57,000						57,000
Tanks, Tanks Steps, Stairs	CONT.405	0						0
Battery Equipment	CONT.410	0						0
Secondary Containments	CONT.415	8,500						8,500
Overhead Power Distribution	CONT.420	0						0
Facility Electrical	CONT.425	22,500						22,500
Telecommunication Equipment	CONT.426	0						0
Meters and Metering Equipment	CONT.445	3,500						3,500
Facility Line Pipe	CONT.450	6,000						6,000
Lease Automation Materials	CONT.455	23,000						23,000
FLUGL - Materials	CONT.550	14,500						14,500
FLUGL - Line Pipe	CONT.555	25,000						25,000
SWD/Other - Materials	CONT.650	0						0
SWD/OTHER - LINE PIPE	CONT.655	0						0
Total Tangible - Lease Equipment Cost		160,000						160,000
Total Estimated Cost		442,500				176,340		9,169,260

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

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

CASE NO. 20783

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

CASE NO. 20784

AFFIDAVIT OF HARRISON HASTINGS

STATE OF TEXAS                                 )  
  ) ss.  
COUNTY OF MIDLAND                         )

Harrison Hastings, being duly sworn, deposes and states:

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

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

3. As part of my study, I have prepared the following geological exhibits with respect to the horizontal spacing unit that are attached hereto:

- a. **Exhibit B.1** is a Locator Map outlining the Hayduke 34-3 W/2 Project Area in proximity to the Capitan Reef.



- b. **Exhibit B.2** is a Cross-Section Locator Map outlining the Bone Spring horizontal spacing units being pooled that are the subject of these applications and referencing the location of Stratigraphic Cross Section A-A'. It identifies a line of cross-section, running from A to A', as well as the cross-section well names.
- c. **Exhibit B.3** is the Hayduke 34-3 Fed 1H – 11H Development Plan, which includes a wine rack diagram. The diagram identifies the proposed 2-mile wells in the W/2 of Sections 34 and 3, the area of interest for the two proposed units. The proposed Bone Spring wells are identified in yellow and by well number.
- d. **Exhibit B.4** is a Structure Map on the top of the Wolfcamp formation. This map identifies the sections to be developed with a red shaded rectangle. It also shows that the structure dips to the east-northeast. It also shows the location of cross-section A-A'.
- e. **Exhibit B.5** is a Stratigraphic Cross Section hung on the base of the 2<sup>nd</sup> Bone Spring Sand Member of the Bone Spring Fm. The well logs on the cross-section give a representative sample of the 2<sup>nd</sup> Bone Spring Sand Member in the area. The target zone for the **Hayduke 34-3 Federal Com 8H and 9H** wells is 2nd Bone Spring Sandstone, and that zone is consistent across the unit. The planned well-paths for these wells are indicated by a blue dashed line, and the letters 'LZ'.
- f. **Exhibit B.6** is a Net Porosity Map of the 2<sup>nd</sup> Bone Spring Sand Member (Top 2<sup>nd</sup> Bone Spring Sand to Top 3<sup>rd</sup> Bone Spring Carbonate.) It shows that the formation is relatively uniform across the proposed unit for the **Hayduke 34-3 Federal Com 8H and 9H** wells. It also shows the location of cross-section A-A'.