CIMARE

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.

Havduke 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.

Havduke 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.

Havduke 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.



<u>Hayduke 34-3 Federal Com 5H</u> - 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.

<u>Hayduke 34-3 Federal Com 8H</u> - 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.

<u>Hayduke 34-3 Federal Com 10H</u> - 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. lon #

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:

<u>.....</u>

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.

Company Entity				Date Prepared 4/23/2019
Exploration Region Permian Basin	Well Name HAYDUKE 34-3 FEDERAL COM 9H	Prospect Carlsbad Bone Spring Prospec	Property Number 300001-136.01	AFE 26621009
County, State	Location		Estimated Spud	Estimated Completion
Eddy, NM	SHL: W/2 of Section 34, Township 2 Eddy County, NM BHL: W/2 of Section 3, Township 26 County, NM	5	1/1/2021	2/1/2021
X New Supplement Revision	Formation	Well Type T DEV	tl Measured Depth 18,200	Ttl Vetical Depth 8,050

AFE # 26621009

Authorization For Expenditure Drilling

#### 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 Casts		\$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
	s shown on this form are estimates only. By executing head will be charged in accordance with the Joint Ope	this AFE, the consenting party agrees to pay its proparti rating Agreement.	onate 4/23/2019
		ЕХНІВІТ	
	S,		



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

9H											
1	BCP	Drilling	ACP -	Drilling	Corr	p/Stim	Product	tion Equip	Post Co	mpletion	Total
Description	Codes	Amount		Amount		Amount	Codes	Amount		Amount	Cost
Roads & Location	DIDC.100	70,000	1		STIM.100	5,000	CON.100	8,000		28,000	111,000
Damages	DIDC.105	10,000					CON.105	2,000		·	12,000
Mud/Fluids Disposal	DIDC255	200,000			STIM255	53,000			PCOM255	45,000	298,000
Day Rate	DIDC115		DICC.120	124,020							537,420
Misc Preparation	DIDC.120	35,000		1 3		1					35,000
Bits	DIDC.125		DICC.125	0	STIM.125	0		ł	PCOM.125	0	65,000
Fuel	DIDC.135	74,000		0.	-				PCOM.130	0	74,000
Water for Drilling Rig (Not Frac Water) Mud & Additives	DIDC.140	3,000	DICC.135	0	STIM.135	38,000			PCOM 135	0.	41,000
Surface Rentals	DIDC.143	225,000	DICC.140	l 0	STIM.140	100.000	CON.140	4 000	PCOM.140	30,900	225,000
Downhole Rentals	DIDC.155	74,000	Dice. NO	u u	STIM.145	189,000	CONTINU	4,000	PCOM 145	30,300	309,900
Flowback Labor	0.00.133	/4,000			STIM.141	0	0 3		PCOM 141	13,440	74,000
Automation Labor							CON.150		PCOM.150	13,440	25.000
Formation Evaluation (DST, Coring, etc.)	DIDC.160	. 0		1	STIM.150	0		2.3,000			23,000
Mud Logging	DIDC.170	22,000				-,		-			22,000
Open Hole Logging	DIDC.180	0				;	- 1				
Cementing & Float Equipment	DIDC.185	85,000	DICC 155	150,000							235,000
Tubular Inspections	DIDC.190	25.000	DICC160	5,000	STIM.160	2,000			PCOM.160	0	32,000
Casing Crews	DIDC.195	12,000	DICC.165	20,000	STIM.165	0				3	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	CONL175	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	DICC255	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	0100.225	10,000	DICC.195	5,000		1					15,000
Remedial Cementing	DIDC.231	. 0			STIM.215	0	1		PCOM.215	0,	0
MOB/DEMOB	DIDC.240	75,000					10				75,000
Directional Drilling Services	DIDC.245	201,000		i i		į	1				201,000
Solids Control	DIDC.260	74,000		1			1			1.229 1.229	74,000
Well Control Equip (Snubbing Services)	DIDC.265		DICC.240	0		81,000	1		PCOM.240	0	155,000
Fishing & Sidetrack Services	DIDC.270	0	DICC245	0		0;			PCOM245	0	0
Completion Rig				L ;	STIM.115	21,000			PCOM.115	0,	21,000
Coil Tubing Services					STIM.260	393,000	1		PCOM.260	0	393,000
Completion Logging/Perforating/Wireline				i	STIM.200	410,000	1		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	1		PCOM210	0	2,926,000
Stimulation Water/Water Transfer/Water Storage					STIM.395	702,000			PCOM.305		702,000
Cimarex Owned Frac/Rental Equipment	DIDC.300			۰. ۱	STIM.305	42,000	CON.300		PCONCSUS	ο,	42,000
Legal/Regulatory/Curative	010C.285	10,000					consu	0			10,000
Well Control Insurance	0100.203	6,000					CON.305	13,500		•	13,500
Major Construction Overhead	DIDC.560	. 0!		1	STIM.560	0	CC14303	13,300			13,300
Real Time Operations Center FL/GL - Labor	0.000	U,			211110000	u.	CON.500	94.000			94.000
FL/GL - Supervision				į i		i	CON.505	7,000			7,000
Survey		:				÷	CON.SIS	0			0
SWD/Other - Labor						1	CON.600	0			0
SWD/OTHER - SUPERVISION		1					CON.505	0			0
Contingency	DIDC.435	100,000	DICC220	17,000	STIM.220	262,000	CON.220	30,000	PCOM.220	0	409,000
Contingency							CON.221	14,000			14,000
PBLA Costs	DIDC.295	0	DICC.275	0			1			;	0
Total Intangible Cost		2,104,400		364,0201		5,495,000		319,000		117,340	8,399.760
Orive Pipe	DWEB.150	0					-				0
Conductor Pipe	DWEB.130	0				1		1		:	0,
Water String	DWEB.135	0.									0
Surface Casing	DWEB.140	14,000				;		9		т.	14,000
Intermediate Casing 1	DWE8.145	49,000									49,000
Intermediate Casing 2	DWEB.155	0,									0
Drilling Liner	DWEB.160	0				12				L <sub>at</sub>	0
Production Casing or Liner		1	DWEA.100	326,000			1			i	326,000
Production Tie-Back		2	DWEA.165	0		0			0000		0
Tubing	-	1	-		STIMT.105	48,000	1		PCOMT.105	0.	48,000
Wellhead, Tree, Chokes	DWEB.115		OWEA.120		STIMT.120	25,000			PCOMT,120	٥,	65,000
Liner Hanger, Isolation Packer	DWEB.100	0,	DWEA.125	0	-		1	1	PCOMT.400		0
Packer, Nipples		:	1	1	STIMT.400	15,000			PCOMT.405	0	15,000
Pumping Unit, Engine				1	STIMT.405 STIMT.410	60,000	í		PCONT.410	0	60,000
Downhole Lift Equipment			i i		311011410	60,000	1		PCONT.420	59,000	59,000
Surface Equipment Well Automation Materials		1	8	E		1	1		PCONTASS	0	39,0001
Total Tangible - Well Equipment Cost		83,000 }	1	346,000		148.000				59,000	636,000
N/C Lesse Equipment			-				CONT.400	57,000;			57,000
Tanks, Tanks Steps, Steirs		1				1	CONT.405	0		:	0
Battery Equipment						1	CONT.410	0.		1	0
Secondary Containments		,					CONT.415	14,500		÷	14,500
Overhead Power Distribution			1				CONT.420	0		Ŷ.	0,
Facility Electrical		1		1		;	CONT.425	22,500		-	22,500
Telecommunication Equipment			R.				CONT.426	0		1	0
Meters and Metering Equipment							CONT.445	3,500			3,500
Facility Line Pipe		:					CONT.450	6,000		1	6,000
						i	CONTASS	23,000			23,000
Lease Automation Materials				E		3	CONT.550	14,500			14,500
Lease Automation Materials FL/GL - Materials											
Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe						1	CONT.SSS	20,500		i.	20,500
FL/GL - Materials		8*				1	CONT.650	0		1	20,500
PL/GL - Materials PL/GL - Line Pipe SWD/Other - Materials SWD/OTHER - LINE PIPE								0			0
PL/GL - Materials FL/GL - Line Pipe SWD/Other - Materials	•••	2,187,400		710,020	-	5,643,000	CONT.650 CONT.655	0	1	176,340,	0



# Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM

Description		BCP - Drilling			ACP - Drilling			Comp/Stim	
	Codes	ocr - brinning	Amount	Codes	Acr - Draing	Amount	Codes	comprount	Amoun
Roads & Location	DIDC.100		70,000				STIM.100		5,000
Damages	DIDC.105		10,000						5,000
Mud/Fluids Disposal	DIDC.255		200,000				5TIM.255		53,000
Day Rate		14 days at \$26,000/day	413,400	DICC.120	S days at \$26,000/day	124,020			23,000
Misc Preparation	DIDC.120		35,000			14.4,02.0			
Bits	DIDC.125		65,000	DICC.125		0	STIM 125		c
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	1,200 gayosy it \$2.00/ga		DICC.135		0	STIM.135		20.000
	DIDC.145		3,000	0100.155		0	31100.133		38,000
Mud & Additives			225,000	DISCAL			e700 4 4 40		
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		٥
Flowback Labor							STIM.141		0
Automation Labor									
Formation Evaluation (DST, Coring, etc.)	DIDC.160	Service and the service of the servi	0				STIM,150		0
Mud Logging		14 days at \$1,200/day	22,000						
Open Hale 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	DIDC210		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			
Contraction of the second s				SICC. (33		5,000	STIM.215		
Remedial Comenting	DIDC.231		0				antm.213		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		B1,000
Fishing & Sidetrack Services	DIDC.270		0	DICC.245		0	STIM.245		0
Completion Rig							STIM.115		21,000
Cail Tubing Services							STIM.260		393,000
Completion Logging/Perforating/Wireline							STIM.200		410,000
Composite Plugs							STIM.390		108,000
							STIM.210		2,926,000
Stimulation							STIM.395		
Stimulation Water/Water Transfer/Water									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/tt	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	000435	500 % of Dnilling Intangibles	100.000	DICC.220		17,000	STIM 220		262,000
Contingency	010-0.433	the state of the grant of the	100,000			17,000			202,000
	DIDC.295		•	DICC.275		0			
P&A Costs	DIDC.293		0	DICCETS					F 405 000
Total Intangible Cost	-		2,104,400			364,020			5,495,000
Drive Pipe	DWEB.150		0						
Canductor Pipe	DWEB.130		0						
Water String	DWE8.135		0						
		13 3/8" - 400ft at \$35.00/ft	11000						
Surface Casing	DWEE.140		14,000						
Surface Casing		9 5/8" - 1,876/t at \$26.00/ft							
Surface Casing Intermediate Casing 1	DWEB.145		49,000						
Surface Casing Intermediate Casing 1 Intermediate Casing 2	DWEB.145 DWEB.155		49,000 0						
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner	DWEB.145		49,000	DWFA 100	5 1/2" - 17 139fr at \$19 00/fr	326.000			
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Uner Production Casing or Liner	DWEB.145 DWEB.155		49,000 0		5 1/2" - 17,139ft at \$19.00/ft	326,000	STIME 101		
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Dnilling Uner Production Cissing or Liner Production Tie-Back	DWEB.145 DWEB.155		49,000 0	DWEA.100 DWEA.165	5 1/2° - 17,139ft at \$19.00/ft		STIMT.101	27/8° - 60206 - 157 00 M	0
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Tie-Back Tubing	DWEB.145 DWEB.155 DWEB.160		49,000 0 0	DWEA.165	5 1/2° - 17,139ft at \$19.00/ft	0	STIMT.105	2 7/8" - 6,920ft at \$7.00/ft	48,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Tie-Back Tubling Wellhead, Tree, Chokes	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000	DWEA.165 DWEA.120	5 1/2° - 17,139ft at \$19.00/ft	0 20.000		2 7/8" - 6,920ft at \$7.00/ft	
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Production Casing or Liner Production Tie-Back Tubing Weilhead, Tree, Chokes Liner Hanger, Isolation Packet	DWEB.145 DWEB.155 DWEB.160		49,000 0 0 20,000	DWEA.165	5 1/2" - 17,139ft at \$19.00/ft	0	STIMT.105 STIMT.120	2 7/8" - 6,920ft at \$7.00/ft	48,000 25,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Tie-Back Tubling Wellhead, Tree, Chokes	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20.000	STIMT.105 STIMT.120 STIMT.400	2 7/8° - 6,920ft at \$7.00/ft	48,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Production Casing or Liner Production Tie-Back Tubing Weilhead, Tree, Chokes Liner Hanger, Isolation Packet	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20.000	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8" - 6,920ft at \$7.00/ft	48,000 25,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Uner Production Casing or Liner Production Tie-Back Tutsing Wellhead, Tree, Chokes Liner Manger, Isolation Packer Packer, Nipples	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20.000	STIMT.105 STIMT.120 STIMT.400	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Dnilling Uner Production Casing or Liner Production Tie-Back Tubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20.000	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Tis-Back Tubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Oownhole Lift Equipment	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000	DWEA.165 DWEA.120	5 1/2" - 17,139/t at \$19.00/t	0 20.000	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Uner Production Casing or Liner Production Tie-Back Tutsing Wellhead, Tree, Chokes Liner Manger, Isolation Packer Packer, Nipples Pumping Unit, Engine Downhole Lift Equipment Surface Equipment Well Automation Materials	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drolling Liner Production Casing or Liner Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Jumping Unit, Engine Downhole Lift Equipment Surface Equipment Well Automation Materials Total Targible - Well Equipment Cost	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20.000	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Ownhole Lift Equipment Surface Equipment Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Tie-Back Tubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Downlole Litt Equipment Surface Equipment Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drolling Liner Production Casing or Liner Production Tie-Back Tubing Wellhead, Tree, Chokes Liner Manger, Isolation Packer Packer, Nipples Dumping Lini, Engine Downhole Lift Equipment Surface Equipment Well Automation Materials Total Targible - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs Battery Equipment	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Casing Date Based of Liner Production Casing Date State State State National Composition States Date States States States Date States States States Date States States States States Date States States States States Date States St	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Casing or Liner Production Tie-Back Tubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Downhole Lift Equipment Surface Equipment Surface Equipment Total Targble - Well Equipment Cost N/C Lease Equipment Sattery Equipment Sattery Equipment Secondary Containments Overhead Power Distribution	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Uner Production Casing or Liner Production Tie-Back Tubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Downlote Litt Equipment Surface Equipment Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Sattery Equipment Seandary Containments Overhead Power Distribution Facility Electrical	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8" - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Casing or Liner Production Tie-Back Tubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Downhole Lift Equipment Surface Equipment Surface Equipment Total Targble - Well Equipment Cost N/C Lease Equipment Sattery Equipment Sattery Equipment Secondary Containments Overhead Power Distribution	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139/t at \$19.00/t	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Uner Production Casing or Liner Production Tie-Back Tubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Downlote Litt Equipment Surface Equipment Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Sattery Equipment Seandary Containments Overhead Power Distribution Facility Electrical	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Wellmead, Tree, Chokes Unior Hanger, Isolation Packer Packer, Nipples Downhole Lift Equipment Surface Equipment Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs Battery Equipment Secondary Containments Overhead Power Distribution Facility Electrical Telecommunication Equipment	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8" - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Casing or Liner Production Tie-Back Tubing Wellhead, Tree, Chokes Liner Manger, Isolation Packer Packer, Nipples Pumping Unit, Engine Oownhole Lift Equipment Surface Equipment Surface Equipment Surface Equipment Total Targble - Well Equipment Cost N/C Lease Equipment Sternas Steps, Stairs Battery Equipment Secondary Containments Overhead Power Distribution Sacility Electrical Telecommunication Equipment Matters and Metering Equipment	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139/t at \$19.00/t	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drolling Liner Production Casing or Liner Production Casing or Liner Production Tie-Back Ution Manger, Isolation Packer Packer, Nipples Dumping Lini, Engine Downhole Lift Equipment Surface Equipment Well Automation Materials Total Targble - Well Equipment Cost N/C Lease Equipment Secondary Containments Overhead Power Distribution Secondary Containments Overhead Power Distribution Secondary Containments Acters and Metering Equipment Facility Electrical Telecommunication Equipment Facility Line Pipe Lease Automation Materials	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Diffling Liner Production Casing or Liner Production Casing or Liner Production Casing or Liner Production Casing or Liner Production Tie-Back IUter Manger, Isolation Packer Packer, Nipples Uner Manger, Isolation Packer Packer, Nipples Downhole Lift Equipment Surface Equipment Med Automaticaton Materials Total Targble - Well Equipment Cost NC Lease Equipment Secondary Containments Overhead Power Distribution Facility Electrical Telecommunication Equipment Meters and Metering Equipment Secondary Line Pipe Lease Automaticin Materials FL/GL - Materials	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.C0/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Casing or Liner Production Casing or Liner Production Tee-Back Itubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Oownhole Lift Gulpment Surface Equipment Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stais Battery Equipment Secondary Containments Overhead Power Distribution Facility Electrical Telecommunication Equipment Meters and Metering Equipment Meters and Metering Equipment Sacility Line Pipe Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139/t at \$19.00/t	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7 00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Casing or Liner Production Tie-Back Ution Manger, Isolation Packer Packer, Nipples Dumping Unit, Engine Downloae Lift Equipment Surface Equipment Well Automation Materials Total Targble - Well Equipment Cost N/C Lesse Equipment Tasks, Tanks Steps, Stairs Battery Equipment Secondary Combinents Overhead Power Distribution Facility Electrical Telecommunication Equipment Materials Funds - Materials Funds - Materials Fu/GL - Materials Fu/GL - Materials	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000
Surface Casing Intermediate Casing 1 Intermediate Casing 2 Drilling Liner Production Casing or Liner Production Casing or Liner Production Casing or Liner Production Tee-Back Itubing Wellhead, Tree, Chokes Liner Hanger, Isolation Packer Packer, Nipples Pumping Unit, Engine Oownhole Lift Gulpment Surface Equipment Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stais Battery Equipment Secondary Containments Overhead Power Distribution Facility Electrical Telecommunication Equipment Meters and Metering Equipment Meters and Metering Equipment Sacility Line Pipe Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe	DWEB.145 DWEB.155 DWEB.160 DWEB.115		49,000 0 0 20,000 0	DWEA.165 DWEA.120	5 1/2" - 17,139ft at \$19.00/ft	0 20,000 0	STIMT.105 STIMT.120 STIMT.400 STIMT.405	2 7/8° - 6,920ft at \$7.00/ft	48,000 25,000 15,000 0 60,000



# Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM 9H

9H						
	Production Equip			Post Completion		Total
Description Roads & Location	Codes CON.100	Amount		Pad/Road Clean Up	Amount	Cost
Damages	CON.105	8,000 2,000		Padyribad Clean Up	28,000	111,000
Mud/Fluids Disposal	CGW,103	2,000		3,000 EWPD for 60 days @ \$0.25/bbl	45,000	12,000 298,000
Day Rate					43,000	537,420
Misc Preparation						35,000
Bits			PCOM.125	1	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		\$1,030/d for Production Target of 30 Days	30,900	309,900
Downhole Rentals			PCOM.145		0	74,000
Flowback Labor				\$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 Open Hole Logging						22,000
Cementing & Float Equipment						235,000
Tubular Inspections			PCOM.160		0	32,000
Casing Crews					0	32,000
Mechanical Labor	CON.170	90,000	PCOM.170	t	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					2	74,000
Well Control Equip (Snubbing Services)			PCOM.240		0	155,000
Fishing & Sidetrack Services			PCOM.245 PCOM.115		0	0
Completion Rig Coil Tubing Services			PCOM.115		0	21,000 393,000
Completion Logging/Perforating/Wireline			PCOM.200	1	0	410,000
Composite Plugs			PCOM.390		0	108,000
Stimulation Pumping/Chemicals/Additives/Sand			PCOM.210	1	0	2,926,000
Stimulation Water/Water Transfer/Water						702.000
Cintarex Owned Frac/Rental Equipment			PCOM.30S		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 CON.600	0				0
SWD/Other - Labor SWD/OTHER - SUPERVISION	CON.605	0				0
Contingency	CON.220		PCOM.220		0	409,000
Contingency	CON.221	14,000	- COMILLO		0	14,000
P&A Costs		14,000				0
Total Intangible Cost		319,000			117,340	8,399,760
Drive Pipe					1000	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			ACON 17 107			0
Tubing Wellhead, Tree, Chokes			PCOMT.105 PCOMT.120		0	48,000
Liner Hanger, Isolation Packer			. Contrato		U	65,000
Packer, Nipples			PCOMT.400		0	15,000
Pumping Unit, Engine			PCOMT.405		0	15,000
Downhole Lift Equipment			PCOMT.410		0	60,000
Surface Equipment				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 Meters and Metering Equipment	CONT.426 CONT.445	0 3 500				0
Facility Line Pipe	CONT.445 CONT.450	3,500 6,000				3,500
		0,000				23,000
		23000				
Lease Automation Materials FL/GL - Materials	CONT.455 CONT.550	23,000		1		
Lease Automation Materials	CONT-455	23,000 14,500 20,500				14,500
Lease Automation Materials FL/GL - Materials	CONT 455 CONT 550	14,500				14,500
Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe	CONT-555 CONT-550 CONT-555	14,500 20,500				14,500 20,500
Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe SWD/Other - Materials	CONT 455 CONT 550 CONT 555 CONT 555	14,500 20,500 0			176,340	14,500 20,500 0



Company Entity

### Authorization For Expenditure Drilling

AFE # 26621009

Date Prepared 4/23/2019

Exploration Region	Well Name	Prospect	Property Number	AFE
Permian Basin	HAYDUKE 34-3 FEDERAL COM 9H	Carlsbad Bone Spring Prospec	300001-136.01	26621009
County, State	Location		Estimated Spud	Estimated Completion
Eddy, NM	SHL: W/2 of Section 34, Township 25 Eddy County, NM BHL: W/2 of Section 3, Township 26 County, NM		1/1/2021	2/1/2021
X New	Formation	Well Type I	tl Measured Depth	Ttl Vetical Depth
Supplement		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.

None	perator Approval			
	Company	Approved By (Print Name)	Approved By (Signature)	Date
NOTIC	E TO NONOPERATOR:	Costs shown on this form are estimates only. By executing	this AFE, the consenting party ogrees to pay its proportionate	
share	of actual costs incurred.	Overhead will be charged in accordance with the Joint Ope	rating Agreement.	4/23/2019



# CIMARE Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM AFE # 26621009

	BCP -	Drilling	ACP -	Drilling	Com	p/Stim	Producti	on Equip	Post Cor	npletion	Total
Description	Codes	Amount	Codes	Amount	Code;	Arnount	Codes	Amount	Codes	Amount	Cos
Roads & Location	DIDC.100	70,000			STIM.100	5,000	CON.100	8,000	PCOM.100	28,000	111,00
Damages	DIDC.105	10,000	1				CON.105	2,000			12,00
dud/Fluids Disposal	DIDC.255	200,000			STIM.255	53,000			PCOM.255	45,000	298,00
Day Rate	DIDC.115	413,400	DICC.120	124,020							537,420
fisc Preparation	DIDC.120	35,000									35,00
lits	DIDC.125	65,000	DICC.125	0	STIM.125	0			PCOM 125	0	65.00
uel	DIDC.135	74,000	DICC 130	0		J			PCOM.130	0	74,00
Vater for Drilling Rig (Not Frac Water)	DIDC.140	3,000	DICC.135	0	STIM.135	28.000			PCOM 135	0	
			DICC.133	U	311m.133	38,000			PCOIV. 133	0	41,00
dud & Additives	DIDC.145	225,000					in a second s				225,000
urface Rentals	DIDC.150	86,000	DICC 140	0	STIM.140	189,000	CON.140	4,000	PCOM. 140	30,900	309,900
Jownhole Rentals	DIDC.155	74,000			STIM.145	0			PCOM.145	0	74,000
lowback Labor					STIM.141	0			PCOM.141	13,440	13,440
lutomation Labor							CON.150	25,000	PCOM.150	0	25,000
ormation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150	0					
Aud Logging	DIDC.170	22,000									22.000
Open Hale Logging	DIDC.180	0									(
ementing & Float Equipment	DIDC. 185	85,000	DICC.155	150,000							
			DICC.160		Charles	2 2 2 2			PCOM 160		235,000
ubular Inspections	DIDC. 190	25,000		5,000	STIM.160	2,000			PCOM 160	0	32,000
asing Crews	DIDC.195	12,000	DICC.165	20,000	STIM 165	0					32,000
Aechanical Labor	DIDC 200	20,000	DICC 170	3,000	STIM 170	0	CON.170	90.000	PCOM 170	0	113,000
rucking/Transportation	DIDC.205	15,000	DICC.175	15,000	STIM.175	2,000	CON.175	6,500	PCOM 175	0	38,500
upervision	DIDC 210	80,000	DICC.180	18,000	STIM.180	74,000	CON.180	5,000	PCOM 180	0	177,000
railer 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
Iverhead	DIDC 225	10,000	DICC 195	5,000							15,000
emedial Cementing	DIDC 231	0,000	1	3,000	STIM.215	0			PCOM 215	0	13,000
emediai Cementing 108/DEMO8	DIDC.231	75.000			a	U				0	
											75,000
irectional Drilling Services	DIDC.245	201,000									201,000
olids Control	DIDC.260	74,000									74,000
Vell Control Equip (Snubbing Services)	DIDC.265	74,000	DICC.240	0	STIM 240	81,000			PCOM 240	0	155,000
ishing & Sidetrack Services	DIDC.270	0	DICC.245	0	STIM 245	0			PCOM 245	0	C
ompletion Rig					STIM.115	21,000			PCOM.115	0	21,000
oil Tubing Services					STIM.260	393.000			PCOM 260	0	393,000
ompletion Logging/Perlorating/Wireline			1		STIM.200	410,000	4		PCOM.200	0	410,000
omposite Plugs					STIM.390	108,000			PCOM 390	0	108,000
timulation Pumping/Chemicals/Additives/Sand					STIM.210	2,926,000			PCOM 210	0	2,926,000
									-C.O.W. 210	0	
timulation Water/Water Transfer/Water Storage					STIM.395	702,000					702,000
imarex Owned Frac/Rental Equipment					STIM.305	42,000	1	-122.1	PCOM 305	0	42,000
egal/Regulatory/Curative	DIDC.300	10,000					CON.300	0			10,000
/ell Control Insurance	D1DC.285	6,000									6,000
lajor Construction Overhead							CON.305	13,500			13,500
eal Time Operations Center	DIDC.560	0			STIM.560	0					0
L/GL - Labor							CON.500	94,000			94,000
L/GL - Supervision			1				CON.505	7,000		×	7,000
urvey							CON.515	0			0
WD/Other - Labor			1				CON.600	0			0
			1				CON.605	0			
WD/OTHER - SUPERVISION								1		-	0
ontingency	DIDC.435	100,000	DICC.220	17.000	STIM220	262,000	CON.220		PCOM 220	0	409.000
ontingency							CON.221	14,000			14,000
&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
rive Pipe	DWEB.150	0									0
anductor Pipe	DWE8.130	0									0
/ater String	DWE8.135	0									0
	DWEB.140	14,000									14,000
urface Casing											
termediate Casing 1	DWEB.145	49,000									49,000
Itermediate Casing 2	DWEB.155	0	ŧ								0
nlling Liner	DWEB.160	0									0
roduction Casing or Liner			DWEA.100	326,000			1				326,000
roduction Tie-Back			DWEA.165	0	STIMT.101	0					0
ubing					STIMT.105	48,000			PCOMT.105	0	48,000
/ellhead, Tree, Chokes	DWE8.115	20.000	DWEA.120	20.000	STIMT.120	25,000			PCOMT.120	0	65.000
	DWEB 100		DWEA.125	0							0
ner Hanger, Isolation Packer		U		5	STIMT.400	15,000			PCOMT-400	0	15,000
ner Hanger, Isolation Packer					STIMT.405				PCOMT.405		
acker, Nipples						0				0	0
acker, Nipples umping Unit, Engine					STIMT.410	60,000			PCOMT-110	0	60,000
acker, Nipples umping Unit, Engine ownhole Lift Equipment									PCOMT.420	59,000	59,000
acker, Nipples umping Unit, Engine ownhole Lift Equipment urface Equipment			Į								
acker, Nipples umping Unit, Engine ownhole Lift Equipment Urface Equipment Vell Automation Materials			Ę						PCOMT.455	0	0
acker, Nipples umping Unit, Engine ownhole Lift Equipment urface Equipment		83,000	5	346,000		148,000			PCOMT.455	0 59,000	636.000
acker, Nipples umping Unit, Engine ownhole Lift Equipment Urface Equipment Vell Automation Materials		83,000	1	346,000		148,000	CONT.400	57,000	PCOMT.455		
acker, Nipples umping Unit, Engine womhole Lift Equipment urface Equipment /ell Automation Materials Total Tangble - Well Equipment Cost		83,000		346,000		148,000	CONT-400 CONT-405		PCOMT.455		636,000
ecker, Nipples umping Unit, Engine womhole Lift Equipment urface Equipment /ell Automation Materials Total Tangible - Well Equipment Cost /C Lease Equipment		83,000	1	346,000		148,000		57,000	PCOMT.455		636.000 57,000
acker, Nipples umping Unit, Engine ownhole Lilt Equipment trace Equipment /ell Automation Materials Total Tangble - Well Equipment Cort /C Lease Equipment anks, Tanks Steps. Stars attery Equipment		83,000	1	346,000		148,000	CONT.405	57,000 0 0	PCOMT.455		636,000 57,000 0
acker, Nipples umping Unit, Engine ownhole Lift Equipment triate: Equipment Total Tangble - Well Equipment Cost /C Lease Equipment unks, Tanks Steps. Stairs stery: Equipment scondary Containments		83,000	1	346,000		148,000	CONT.405 CONT.410 CONT.415	57,000 0 14,500	PCOMT.455		636,000 57,000 0 14,500
acker, Nipples umping Unit, Engine unface Equipment Vell Automation Materials Total Tangble - Well Equipment Cost // Lease Equipment unks, Tanks Steps. Stairs attery Equipment secondary Containments verthead Power Distribution		83,000		346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420	57,000 0 14,500 0	PCOMT.455		636,000 57,000 0 14,500 0
acker, Nipples imping Unit, Engine unface Equipment unface Equipment Tetal Tangible - Well Equipment Cont // Lease Equipment anks, Tanks Steps, Stairs attery Equipment secondary Containments verthad Power Distribution helity Elecuical		83,000		346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425	57,000 0 14,500 0 22,500	PCOMT.455		636,000 57,000 0 14,500 0 22,500
acker, Nipples umping Unit, Engine ownhole Lilt Equipment trace Equipment Yell Automation Materials Total Tangble - Well Equipment Cost /C Lease Equipment econdary Containments verhead Power Distribution colify Electical elecommunication Equipment		83,000	44 44	346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425	57,000 0 14,500 0 22,500 0	PCOMT-455		636,000 57,000 0 14,500 0 22,500 0
acker, Nipples imping Unit, Engine ownhole Lift Equipment Iell Automation Materials Total Tangble - Well Equipment Cost // Lease Equipment attery Equipment attery Equipment secondary Containments verthead Power Distribution atfly Electrical decommunication Equipment teres and Metering Equipment		83,000	and a set of the set o	346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.425	57,000 0 14,500 0 22,500 0 3,500	PCOMT-455		636,000 57,000 0 14,500 0 22,500 0 3,500
acker, Nipples umping Unit, Engine ownhole Lilt Equipment trace Equipment Yell Automation Materials Total Tangble - Well Equipment Cost /C Lease Equipment econdary Containments verhead Power Distribution colify Electical elecommunication Equipment		83,000		346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425	57,000 0 14,500 0 22,500 0	PCOMT-455		636,000 57,000 0 14,500
acker, Nipples imping Unit, Engine ownhole Lift Equipment Iell Automation Materials Total Tangble - Well Equipment Cost // Lease Equipment attery Equipment attery Equipment secondary Containments verthead Power Distribution atfly Electrical decommunication Equipment teres and Metering Equipment		83,000	444 444 444 444 444 444 444 444 444 44	346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.425	57,000 0 14,500 0 22,500 0 3,500	PCOMT-455		636,000 57,000 0 14,500 0 22,500 0 3,500
acker, Nipples imping Unit, Engine ownhole Lilt Equipment Irdiace Equipment Yell Automation Materials Total Tangble - Well Equipment Cost YC Learse Equipment Steps Stairs attery Equipment secondary Containments werhad Power Distribution relify Electrical Becommunication Equipment leters and Metering Equipment safe Automation Materials		83,000	444 444 444 444 444 444 444 444 444 44	346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.425 CONT.445 CONT.450	57,000 0 14,500 0 22,500 0 3,500 6,000 23,000	PCOMT-455		636.000 57.000 0 14,500 22,500 0 3,500 6,000 23,000
acker, Nipples imping Unit, Engine ownhole Lilt Equipment Irdae Equipment Yell Automation Materials Total Tangble - Well Equipment Cost YC Lease Equipment Scendary Containments verhead Power Distribution Rolfby Election Rolfby Electio		83,000		346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.425 CONT.455 CONT.455 CONT.455	57,000 0 14,500 22,500 0 3,500 6,000 23,000 14,500	PCOMT-455		636,000 57,000 0 14,500 0 22,500 0 3,500 6,000 23,000 14,500
acker, Nipples imping Unit, Engine ownhale Lift Equipment urface Equipment Yell Automation Materials Total Tangble - Well Equipment Cost // Lease Equipment satery Equipment satery Equipment secondary Containments verthead Power Distribution rolity Elecuical elecommunication Equipment tetrs and Metering Equipment solity Line Pipe sate Automation Materials JGL - Materials JGL - Naterials		83,000		346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.425 CONT.455 CONT.455 CONT.550	57,000 0 14,500 22,500 0 3,500 6,000 23,000 14,500 20,500	PCOMT-455		636,000 57,000 0 14,500 0 22,500 0 3,500 6,000 23,000 14,500 20,500
acker, Nipples imping Unit, Engine owhole Lift Equipment Urface Equipment Tetal Tangible - Well Equipment Cost 7 Clearse Equipment Learse Equipment attery Equipment attery Equipment attery Equipment Sethad Power Distribution welfady Electrical Becommunication Equipment Beters and Metering Equipment Betormation Materials JGL - Materials JGL - Materials		83,000	are the fill and the set of the set of the	346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.425 CONT.450 CONT.450 CONT.550 CONT.555 CONT.550	57,000 0 14,500 0 22,500 6,000 23,000 14,500 23,000 14,500 0 0	PCONT-455		636,000 57,000 0 14,500 22,500 0 3,500 6,000 23,000 14,500 20,500 0
acker, Nipples imping Unit, Engine ownhale Lift Equipment urface Equipment Zela Tangble - Well Equipment Cott // Lease Equipment Intic, Tanks Steps. Stairs statery Equipment statery Equipment secondary Containments verthead Power Distribution rolity Elecuical elecommunication Equipment leters and Metering Equipment solity Line Pipe Sate Automation Materials JGL - Materials JGL - Naterials		83,000		346,000		148,000	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.425 CONT.455 CONT.455 CONT.550	57,000 0 14,500 22,500 0 3,500 6,000 23,000 14,500 20,500	PCOMT-455		636,000 57,000 0 14,500 0 22,500 0 3,500 6,000 23,000 14,500 24,500



# Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM 9H

9H									
Description	e	BCP - Drilling			ACP - Drilling			Comp/Stim	
Description Reads & Location	Codes DIDC.100		Amount			Amount	Codas STIM, 100		Amount
Daniages	DIDC.100		70,000				211M.100		5,000
			10,000						
Mud/Fluids Disposal	DIDC.255		200,000				STIM.255		53,000
Day Rate		14 days at \$26,000/day	413,400		5 days at \$26,000/day	124,020			
Misc Preparation	DIDC.120		35,000						
Bits	DIDC.125		65,000			0	STIM 125		0
Fuel	DIDC.135	1,300 gal/day at \$3.00/gal	74,000			0			
Water for Drilling Rig (Not Frac Water)	DIDC.140		3,000	DICC.155		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			DICC.155		150,000			
Tubular Inspections	DIDC.190		25.000			5,000	STIM.100		2,000
Casing Crews	DIDC.195		12,000			20,000	STIM.165		2,000
Mechanical Labor	DIDC.200		20,000			3,000	STIM.170		0
Trucking/Transportation	DIDC.205		15,000			15,000	STIM.175		
	DIDC.210								2,000
Supervision			80,000			18,000	STIM.180		74,000
Trailer House/Camp/Catering	DIDC.280		37,000			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 Dritting Services	DIDC.245		201,000					1	
Solids Control	DIDC.260		74,000						
Well Control Equip (Stubbing Services)	DIDC.265		74,000	DICC.240		0	STIM.240		81,000
Fishing & Sidetrack Services	DIDC.270		0			0	STIM.245		01,000
Completion Rig	01002110		0			0	STIM.115		
							STIM.260		21,000
Call Tubing Services									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
Ciniarex 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			0						0
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						
Canductor Pipe	DWEB.130		0						
Water String	DWEB.135		0						
Surface Casing		13 3/8" - 400ft at \$35.00/ft	14,000						
Intermediate Casing 1		9 5/8" - 1,876/t at \$26.00/ft							
		9 5/6 - 1,0/6/1 at \$20.00/it	49,000						
Intermediate Casing 2	DWEB.155		0						
	DWE8.160		0	-	and the second s				
Production Casing or Liner					5 1/2" - 17,139ft at \$19.00/ft	326,000			
Production Tie-Back				DWEA.165		0	STIMT.101		0
Tubing								2 7/8" - 6,920ft at \$7.00/ft	48,000
Weilhead, Tree, Chokes	DWEB.115			DWEA.120		20,000	STIMT.120		25,000
Liner Hanger, Isolation Packer	DWE8.100		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 Targible - Well Equipment Cost			83,000			346.000			140.000
			000,000			340,000			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									
Meters and Metering Equipment Facility Line Pipe									
Facility Line Pipe									
Facility Line Pipe Lease Automation Materials									
Facility Line Pipe Lease Automation Materials FL/GL - Materials									i
Facility Line Pipe Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe									
Facility Line Pipe Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe SWD/Other - Materials									1
Facility Line Pipe Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe SWD/Other - Materials SWD/OTHER - LINE PIPE									
Facility Line Pipe Lease Automation Materials FL/GL - Materials FL/GL - Line Pipe SWD/Other - Materials			2,187,400			710,020			5,643,000



# Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM AFE # 26621009 9H

Description	Cadar	Production Equip			Post Completion		Total
Description Roads & Location	Codes CON.100		Amount	Codes	Pud/Band Class IIa	Amount	Ce
Damages	CON.105		8,000	PCOM.100	Pad/Road Clean Up	28,000	111.0
Mud/Fluids Disposal	CONTROL		2,000	00011365	3,000 BWPD for 60 days @ \$0.25/bbl		12.0
Day Rate				PCOM 233	3,000 BWPD for eo days @ 30.23/001	45,000	298,0
Misc Preparation							537,4
Bits				PCOM.125			35,0
Fuel				PCOM.123		0	65,0
Water for Dnilling Rig (Not Frac Water)				PCOM.135		0	74,0
Mud & Additives				10011133		0	225,0
Surface Rentals	CON.140		4,000	PCOM.140	\$1,030/d for Production Target of 30 Days	30,900	309,9
Downhole Rentals			4,000	PCOM.145		0	74,0
Flowback Labor					\$960/d for Production Target of 14 Day	13,440	13,44
Automation Labor	CON.150		25.000	PCOM.150		0	25.00
Formation Evaluation (DST, Coring, etc.)							
Mud Lagging							22,00
Open Hole Logging							
Cementing & Float Equipment							235,00
fubular Inspections				PCOM.160		0	32,00
Lasing Crews							32,00
dechanical Labor	CON.170		90,000	PCOM.170		0	113,00
rucking/Transportation	CON.175		6,500	PCOM.175		0	38,50
upervision	CON 180		5,000	PCOM.180		0	177,00
railer House/Camp/Catering							86,00
Other Misc Expenses	CON.190		20,000	PCOM.190		0	168,00
Overhead				10100000000			15,00
lemedial Cementing				PCOM.215		0	2.2975
AOB/DEMOB							75.00
Directional Drilling Services							201,00
olids Control Vali Control Souio (Soubbian Services)				PCOM 240			74,00
Vell Control Equip (Snubbing Services) ishing & Sidetrack Services				PCOM.240 PCOM.245		0	155,00
				PCOM.245		0	21.00
ompletion Rig oil Tubing Services				PCOM.260		0	21,00
ompletion Logging/Perforating/Wireline				PCOM 200		0	393,00
omposite Plugs				PCOM 200		0	410,00
timulation Pumping/Chemicals/Additives/Sand				PCOM 210		0	2,926,00
timulation Water/Water Transfer/Water				1 CONTEND		0	702,00
imarex Owned Frac/Rental Equipment				PCOM.305		0	42.00
egal/Regulatory/Curative	CON.300		0				10,00
Vell Control Insurance							6,00
Jajor Construction Overhead	CON.305		13,500				13,50
eal Time Operations Center							
L/GL - Labor	CON.500		94.000				94,00
L/GL • Supervision	CON.505		7,000				7,00
urvey	CON.515		0				
WD/Other - Labor	CON.600		0				
WD/OTHER - SUPERVISION	CON.605		0				
Contingency	CON.220		30,000	PCOM.220		0	409,000
Contingency	CON.221		14,000				14,00
&A Costa							
Total Intangible Cost			319,000			117,340	8,399,76
rive Pipe							
onductor Pipe							
/ater String							
urface Casing							14,00
termediate Casing 1							49,00
termediate Casing 2							
rilling Liner							226.00
roduction Casing or Liner roduction Tie-Back							326,00
oduction He-Dack Jbing				PCOMT.105		0	48,000
lelinead, Tree, Chokes				PCOMT.105		0	48,000
reinead, Tree, Choxes ner Hanger, Isolation Packer						0	65,000
ner Hanger, isolation Packer iscker, Nipples				PCOMT.400		0	15,000
umping Unit, Engine				PCOMT.405		0	15,000
ownhole Lift Equipment				PCOMT.410		0	60,000
urface Equipment					XEC Owned Sand Separator	59,000	59,000
/ell Automation Materials				PCOMT-455		0	53,004
Total Tang/ble - Well Equipment Cost						59,000	636,000
/C Lease Equipment	CONT.400		57,000				57,000
inks, Tanks Steps, Stairs	CONT.405		0				
attery Equipment	CONT.410		0				(
condary Containments	CONT.415		14,500				14,500
verhead Power Distribution	CONT.420		0				(
cility Electrical	CONT.425		22,500				22,50
lecommunication Equipment	CONT.426		0				
eters and Metering Equipment	CONT.445		3,500				3,50
cility Line Pipe	CONT.450		6,000				6,00
ase Automation Materials	CONT.455		23,000				23,00
/GL - Materials	CONT.550		14,500				14,500
/GL - Line Pipe	CONT.555		20,500				20,50
WD/Other - Materials	CONT.650		0				(
ND/OTHER - LINE PIPE	CONT.655		0				(
			161 500				161,50
Total Tangible - Lease Equipment Cost Total Estimated Cost			161,500 480,500			176,340	9,197,26

 $(\mathbf{r})$ 



Company Entity

### Authorization For Expenditure Drilling

Date Prepared 4/23/2019

Well Name HAYDUKE 34-3 FEDERAL COM 11H	Prospect Carlsbad Bone Spring Prospec	Property Number 300001-138.01	AFE 26621011
Eddy County, NM		Estimated Spud 1/1/2021	Estimated Completion 2/1/2021
BHL: W/2 of Section 3, Township 26 S County, NM	South, Range 26 East, Eddy		
Formation	Well Type T	tl Measured Depth	Ttl Vetical Depth
Bone Spring 2 /Sd/	DEV	17,650	7,450
	HAYDUKE 34-3 FEDERAL COM 11H Location SHL: W/2 of Section 34, Township 25 Eddy County, NM BHL: W/2 of Section 3, Township 26 S County, NM	HAYDUKE 34-3 FEDERAL COM 11H Carlsbad Bone Spring Prospect Location 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 Formation Well Type T	HAYDUKE 34-3 FEDERAL COM 11H       Carlsbad Bone Spring Prospect       300001-138.01         Location       Estimated Spud         SHL: W/2 of Section 34, Township 25 South, Range 26 East,       1/1/2021         Eddy County, NM       BHL: W/2 of Section 3, Township 26 South, Range 26 East, Eddy       1/1/2021         Formation       Well Type       Ttl Measured Depth

#### Purpose Drill and complete well

Description

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

#### 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

Negenerator Approval

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.

Сотралу	Approved By (Print Name)	Approved By (Signature)	Date
	Costs shown on this form are estimates only. By executing Overhead will be charged in accordance with the Joint Ope		17e 4/23/2019

# **CIMAREX** Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM 11H

Description	Codes	- Drilling Amount	Codes	- Drilling Amount		Amount		Amount		mpletion Amount	Total
Roads & Location	DIDC.100	70,000	1.1.216.3	Pariosin	STIM.100	5,000	CON.100	8,000		28,000	111,0
Damages	DIDC 105	10,000		1		.,	CON.105	2,500			12,
Mud/Fluids Disposal	DIDC 255	200,000			STIM 255	53,000			PCOM255	45,000	298.
Day Rate	DIDC.115	413,400	DICC.120	124,020		22,000					537,
visc Preparation	DIDC.120	35,000		12 1,020							35.
Sits	DIDC 125	65,000	DICC.125	0	STIM.125	0			PCOM.125	0	65.
iuel	DIDC.135	74,000	DICC.130	0		0			PCOM.130	0	74.
Nater for Drilling Rig (Not Frac Water)	DIDC.1-10	3,000	DICC.135	0	STIM.135	38,000			PCOM.135	0	
			0100.100	U	311ML133	38,000			PCOM.133	U	41,0
Vlud & Additives	DIDC.145	225,000	0100110		C7111110		CONITIO	1000	PCOM.140	20.000	225,
Surface Rentals	DIDC.150	86,000	DICC.140	0	STIM.140	189,000	CON.140	4,000		30,900	309,9
Downhole Rentals	DIDC.155	74,000			STIM.145	0			PCOM.145	0	74,
Towback Labor					STIM.141	0			PCOM.141	13,440	13.4
Automation Labor							CON.150	25,000	PCOM.150	0	25,
formation Evaluation (DST, Coring, etc.)	DIDC.160	0			STIM.150	0					
Aud Logging	DIDC.170	22,000									22,
Dpen Hole Logging	DIDC.180	0									
Cementing & Float Equipment	DIDC.185	85,000	DICC.155	150,000							235,0
ubular Inspections	DIDC.190	25,000	DICC.160	5,000	STIM.160	2,000			PCOM.160	0	32,
Casing Crews	DIDC 195	12,000	DICC.165	20,000	STIM.165	0					32,
vlechanical Labor	DIDC.200	20,000	DICC.170	3,000	STIM.170	0	CON.170	52,000	PCOM.170	0	75,0
rucking/Transportation	DIDC.205	15,000	DICC.175	15,000	STIM.175	2,000	CON.175	6,500	PCOM 175	0	38,5
upervision	DIDC.210	80,000	DICC.180	18,000	STIM_180	74,000	CON.180	5,000	PCOM 180	0	177.0
railer House/Camp/Catering	DIDC.280	37,000	DICC.255	7,000	STIM 280	42,000					86.0
Other Misc Expenses	DIDC 220	3,000	DICC.190	0	STIM.190	145,000	CON 190	20,000	PCOM 190	0	168,0
werhead	DIDC-225	10,000	DICC.195	5,000							15,0
emedial Cementing	DIDC.231	10,000		3,000	STIM 215	0			PCOM 215	0	15,
IOB/DEMOB	DIDC.240	75,000				J				0	75,0
Directional Drilling Services	DIDC.245	201,000									
	DIDC.243						4				201,
olids Control		74,000	DICCOUR		CTIL 4 3 40				0001310		74,
Vell Control Equip (Snubbing Services)	DIDC.265	74,000	DICC.240	0	STIM.240	81,000			PCOM240	0	155.0
ishing & Sidetrack Services	DIDC.270	0	DICC245	0	STIM.245	0			PCOM245	0	
ompletion Rig					STIM.115	21,000			PCOM.115	0	21,0
oil Tubing Services					STIM.260	393,000			PCOM 260	0	393,0
ompletion Logging/Perforating/Wireline					STIM.200	410,000			PCOM 200	0	410,0
omposite Plugs					STIM.390	108,000			PCOM.390	0	108,0
timulation Pumping/Chemicals/Additives/Sand					STIM.210	2,926,000			PCOM 210	0	2,926,0
timulation Water/Water Transfer/Water Storage					STIM.395	702,000					702,0
imarex Owned Frac/Rental Equipment					STIM.305	42,000	1		PCOM 305	0	42,0
egal/Regulatory/Curative	DIDC.300	10.000			31111.202	42,000	CON.300	0	r com sos	0	
	DIDC.285						CONSU	U			10,0
Vell Control Insurance	0104.203	6,000					6011301				6,0
Jajor Construction Overhead							CON.305	12,500			12,5
eal Time Operations Center	DIDC.560	0			STIM.560	0					
L/GL - Labor							CON.500	99,500			99,5
L/GL - Supervision							CON.505	7,000			7,0
urvey							CON.515	0			
WD/Other - Labor							CON.600	0			
WD/OTHER - SUPERVISION							CON.605	0			
antingency	DIDC.435	100,000	DICC 220	17,000	STIM 220	262,000	CON.220	25,500	PCOM 220	0	404,5
antingency							CON.221	15,000			15.0
&A Costs	DIDC.295	0	DICC.275	0							
Total Intangible Cost		2,104,400		364,020		5,495,000		282,500		117,340	8,363,2
rive Pipe	DWEB.150	0				5,155,000		Lucioce			0,000,0
anductor Pipe	DWEB.130	0	1				1				
later String	DWEB.135	0									
urface Casing	DWEB.133										
		14,000									14,0
Itermediate Casing 1	DWEB.145	49,000									49,0
Itermediate Casing 2	DWEB.155	0	1				1				
rilling Liner	DWE8.160	0									
roduction Casing or Liner			DWEA.100	333,000							333,0
oduction Tie-Back			DWEA.165	0	STIMT.101	0					
abing					STIMT.105	51,000	1		PCOMT,105	0	51,0
ellhead, Tree, Chokes	DWEB.115	20,000	DWEA.120	20,000	STIMT.120	25,000			PCOMT.120	0	65,0
ner Hanger, Isolation Packer	DWEB.100	0	DWEA.125	0							
acker, Nipples					STIMT.400	15,000			PCOMT.400	0	15.0
umping Unit, Engine					STIMT.405	13,000			PCOMT.405	0	13,0
awnhale Lift Equipment					STIMT.410				PCOMT.410		
					\$10412HQ	60,000				0	60,0
Inface Equipment							1		PCOMT.420	59,000	59,0
ell Automation Materials									PCOMT.455	0	
Total Tangible - Well Equipment Cost		83,000	1	353,000		151,000				59,000	646.0
C Lease Equipment							CONT.400	57,000			57.0
nks, Tanks Steps, Stairs							CONT.405	0			
ttery Equipment							CONT.410	0			
condary Containments							CONT.415	8,500			8,5
verhead Power Distribution							CONT.420	0			3,5
cility Electrical							CONT.425	22,500			22.5
lecommunication Equipment			i				CONT.426	0			42.5
							CONT.445				
eters and Metering Equipment								3,500			3,5
cility Line Pipe							CONT.450	6,000			6,0
ase Automation Materials			1				CONT.455	23,000			23,0
/GL - Materials							CONT.550	14,500			14,5
/GL - Line Pipe							CONT.555	25,000			25,0
ND/Other - Materials			1				CONT.650	0			23,0
WD/OTHER - LINE PIPE							CONT.655	0			
							100000000000000000000000000000000000000				
Total Tangible - Lease Equipment Cost			1	t				160,000			160,0



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

		BCP - Drilling			ACP - Drilling			Comp/Stim	
Description	Codes	Der Dinang	Amount	Codes	Nor - biaang	Amount	Codes	Comp/Juli	Amoun
Roads & Location	DIDC.100		70,000				STIM.100		5,000
Daniages	DIDC.105		10.000						
Mud/Fluids Disposal	DIDC.255		200,000				STIM.255		53,000
Day Rate	DIDC.115	14 days at \$26,000/doy	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			0			
Water for Drilling Rig (Not Frac Water)	DIDC.140		3,000			0	STIM.135		38,000
Mud & Additives	DIDC.145		225,000						201000
Surface Rentals		Per Day (BCP)/day	86,000	DICC.140		0	STIM.140		189,000
Dawnhale Rentals	DIDC.155		74,000			v	STIM.145		189,000
Flowback Labor	01001123		14,000				STIM.141		0
Automation Labor							J. Martine		U
	DIDC.160		0				STIM.150		
Formation Evaluation (DST, Coring, etc.)		11 days at \$1 300 (days	0				31141.150		0
Mud Logging		14 days at \$1,200/day	22,000						
Open Hole Logging	DIDC.180		0	Disc ur					
Cementing & Float Equipment	DIDC.185		85,000			150,000			
Tubular Inspections	DIDC.190		25,000	DICC.160		5,000	\$TIM,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						
Salids 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		01,000
Completion Rig						•	STIM.115		21,000
Call Tubing Services							STIM.260		393,000
Completion Logging/Perforating/Wireline							STIM.200		410,000
							STIM.390		
Composite Plugs							STIM.210		108,000
Stimulation									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	12221	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									
Cantingency	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	1. Cathol Second		2,104,400			364,020			5,495,000
Drive Pipe	OWEB.150		0						
Conductor Pipe	DWEB.130		0						
Water String	OWEB.135		0						
Surface Casing		13 3/8" - 40Cft at \$35.00/ft	14,000						
Intermediate Casing 1		9 5/8" - 1,876ft at \$26.00/ft	49,000						
Intermediate Casing 2	DWEB.155		49,000						
			0						
Drilling Liner Production Casing or Liner	DWE8.160		0	DWEA 100	5 1/2" - 17,519ft at \$19.00/ft	333,000			
Production Casing or Liner Production Tie-Back				DWEA.165	/s,3120 at 312.00/ft		STIMT.101		~
				SHER 103		0		2 7/8* - 7,300ft at \$7.00/f:	0
Tubing				DU15 1 1 20				2 //8 - 7,300h 3t \$7.00/h;	51,000
Wellhead, Tree, Chokes	DWEB.115			DWEA.120			STIMT.120		25,000
Liner Hanger, Isolation Packer	DWEB.100		0	DWEA,125		0			100000
Packer, Nipples							STIMT.400		15,000
Pumping Unit, Engine							STIMT.405		0
Downhale 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									
Lease Automation Materials FL/GL - Materials									
FL/GL - Line Pipe									
SWD/Other - Materials									
and the second se									
SWD/OTHER - LINE PIPE Total Tangible - Lease Equipment Cost			2,187,400		and the second	717,020			5,646,000



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

Total Estimated Cost		 5°200	1		076,371	092'691'6
Total Tanglble - Lease Equipment Lost			4)			000.031
3419 - LINE PIPE	CONT.655	0				0
VD/Other - Materials	CONT.650	0				D
sqia srid - Line	S22, TNOD	000'57				52'000
zleineide - Materialis	CONT.550	005'11				14,500
denstelv notterriotuk szes	S24,1NOD	000'87				C00'EZ
aciiity Line Pipe	CONT.450	000'9				000'9
	244 THO	005'E				005'8
Acters and Metering Equipment		0	1.			
triamping routesinumresses	CONT.426		1			D
acility Electrical	254.TNO2	005'22				22,500
noituditizid reword beerhout	CONT.420	0				0
stramnistro Stramo	SIFINOD	005'8				005'8
Insmithing Matter	OLF INOD	0	1			0
anks, Tanks Steps, Stairs	SOP TNOD	0				0
N/C Lease Equipment	001/1NO2	000'29				000'25
	007 1103				000'65	000'919
Total Tangible - Well Equipment Cost			1		0	
sisitsisht noiterrotuk lisk			PCONT.455			0
Insendinga safut				totstede2 brind Data Data	000'65	000'65
Insmithing the source of the s			OFE,TMO29		0	000'09
ույնսց Դյսմ ըսյdաո			PCONT.405		0	0
saliqqiN ,asbe			PCOMT400		0	000'51
Jinet Hanget, Isolation Packet						0
Vellisead, Tree, Choises			021.TMOD9		0	000'59
					0	
6ujqnj			PCOM1.105		U	000'15
Production Tie-Back						0
roduction Casing or Liner						333'000
Liner Liner						0
5 poizeD atsibamato						D
L gnized afeibamistr						000'67
						000'71
prizes esting						0
Pater String						
Conductor Pipe						D
Prive Pipe						D
Total Internation		85,500			OPE.TIT	8'363'560
21202 A259						D
Коизбизиот	LCZ NOD	000'51				12,000
Contingency	CONSTO	005'52	PCOM.220		0	104'200
	S09'NOD	0				0
NOIZINARA - SUPERVISION		0				0
rods.1 - 19ritO/QW2	CON 600					
กลุงกร	SIS'NOD	0				D
FL/GL - Supervision	SOS NOD	000.7				000'2
10481 - 19/13	005'NOD	005'66				005'66
Real Time Operations Center						0
beatraction Overhead	SDENOD	15,500				12,500
Well Control Insurance	1021103					000'9
		0				
Legal/Regulatory/Curative	ODE NOD	U			122	000'01
Zimarex Owned Frac/Rental Equipment			PCON.305		0	15'000
steWAslen Water Transfer Mater						702,000
bns2\zevisibbA\ziscimsdD\prigmu9 noisclumit2			PCON1210		0	2'926'00C
Composite Plugs			PCON 390		0	108,000
Completion Logging/Reiforating/Wireline			PCON 200		0	000'01+
Coil Tubing Services			PCON 260		0	393'000
Completion Rig			PCOM.115		0	21,000
Fishing & Sidetrack Services			PCOM.245		0	)
(vell Control Equip (Snubbing Services)			PCON.240		C	122'000
Solids Control						74,000
Directional Drilling Services						201,000
NO3/DEMOS						100'54
Remedial Cementing			PCOM.215	1	C	)
			210110.00	1	~	, 100'51
Desthey O		000107				
Other Misc Expenses	061'NOD	000.05	PCOM.190		0	000,831
prinate3/qms3/sevoH talenT						000,38
naisimequ2	091.NOD	000'5	PCOM.180		0	111,000
noisehoqznenT\prisburT	SZL'NOD	005'9	SCOW175		0	38'20
Mechanical Labor	0LL'NOD	000'25		1	0	000'54
Casing Crews	0211105					32,000
			0010000	i	0	
Tubular Inspections			PCOM.160	1	0	35,000
Josmening & Float Equipment						532'00
20pen Hole Logging						)
δυίρεα δυίλ						55'00
Formation Evaluation (DST, Coring, etc.)				1.		)
rodsJ noitemotuA	051.NOD	000'57	PCOM.150		0	52'00
Towback Labor				\$960/d for Production Target of 14 Day	077'EL	13,44
			PCOM.145	a to be trained with the state of the state	0	00.47
sietnaß slothwoQ		000%		100.00		
Surface Rentals	CON.140	000 7	PCOM 140	sys 05 to the moisubord to by 050,12	006'0E	06'608
sevisibbA iS buM						525,00
(1916W State (Not Frac Water for DateW)			PCOM.135		0	00'17
Lue!			DEL.MOD9		0	14,00
2318			SZI'WODd		0	00'59
			10.10.70	1	~	
Misc Preparation						00'58
Day Rate						24'122
			PCON.255	1000 BWPP 101 60 days @ \$0.25/bbl	000'57	598'00
IsroqziQ zbiuR\buM		5'200				12,50
sagernad Istoqsid sbiuft/bulv	SOL'NOD	0036				
sabernad			001.MO24	אמראסמ כופא טף	000'87	00'111
	CON.105 CON.100 Codes		2001.MO29	qU nssiD bsoR\bsq	1nuomA 28,000	00'111 00'111

CIMAREX	

**Company Entity** 

### Authorization For Expenditure Drilling

AFE # 26621011

Date Prepared 4/23/2019

Exploration Region	Well Name	Prospect	Property Number	
Permian Basin	HAYDUKE 34-3 FEDERAL COM 11H	Carlsbad Bone Spring Prospec	t 300001-138.01	26621011
County, State	Location		Estimated Spud	Estimated Completion
Eddy, NM	SHL: W/2 of Section 34, Township 25 Eddy County, NM BHL: W/2 of Section 3, Township 26 : County, NM		1/1/2021	2/1/2021
X New Supplement Revision	Formation Bone Spring 2 /Sd/	Well Type T DEV	tl Measured Depth 17,650	Ttl Vetical Depth 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
Total Intangible Cost	\$2,104,400	\$6,258,860	\$8,363,260
Tangible	Dry Hole	After Casing Point	Completed Well Cost
Well Equipment	\$83,000	\$563,000	\$646,000
Lease Equipment		\$160,000	\$160,000
Total Tangible Cost	\$83,000	\$723,000	\$806,000
Total Well Cost	\$2,187,400	\$6,981,860	\$9,169,260

#### 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 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 garees to pay its proportion	ate
	Overhead will be charged in accordance with the Joint One		1/23/201

4/23/2019



# Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM AFE # 26621011 11H

Description	Codes	Drilling		- Ditiling Amount		p/Stim Amount	Codes	Ion Equip Amount	Codes	mpletion Amount	Total
Roads & Location	DIDC.100	70,000			STIM. 100	5,000	CON.100	8,000	PCOM.100	28,000	111.
Damages	DIDC.105	10,000					CON.105	2,500			12.
Mud/Fluids Dispotal	DIDC.255	200,000			STIM 255	53,000			PCON.255	45,000	298,
Day Rate	DIDC.115	413,400	DICC 120	124,020							537,
Misc Preparation	DIDC.120	35,000									35.
Bits	DIDC.125	65,000		0		0			PCOM.125	0	65,
Fuel	DIDC.135	74,000	DICC 130	0					PCOM.130	0	74.
Water for Drilling Rig (Not Frac Water)	DIDC.140	3,000	DICC.135	0	\$TIM.135	38,000			PCOM.135	0	41,
Mud & Additives	DIDC.145	225,000									225,
Surface Rentals	DIDC.150	86,000	DICC.140	0		189,000	CON.140	4,000	PCOM.140	30,900	309.
Downhole Rentals Flowback Labor	DIDC.155	74,000			STIM.145	0			PCOM.145	0	74,
				i.	STIM.141	0	CON.150	25.000	PCOM.141	13,440	13,
Automation Labor formation Evaluation (DST, Coring, etc.)	DIDC. 160				CT114.150		CON.150	25,000	PCOM.150	0	25,
Mud Logging	DIDC.170	0 22,000			STIM.150	0					
Open Hole Logging	DIDC.180	22,000									22.
Cementing & Float Equipment	DIDC.185	85,000	DICC 155	150,000							235,
ubular Inspections	DIDC.190	25,000	DICC 160	5.000	STIM.160	2,000			PCOM 160	0	32.
Lasing Crews	DIDC.195	12,000	DICC.165	20,000	STIM.165	0				0	32.
Aechanical Labor	DIDC.200	20,000	DICC 170	3,000	STIM.170	0	CON.170	52,000	PCOM.170	0	75,
rucking/Transportation	DIDC.205	15,000	DICC 175	15,000	STIM.175	2,000	CON.175	6,500	PCOM.175	0	38,
upervision	DIDC.210	80,000	DICC 180	18,000	STIM 180	74,000	CON.180	5,000	PCOM 180	0	177.0
railer House/Camp/Catering	DIDC 280	37,000	DICC 255	7,000	STIM.280	42,000					86.0
Other Misc Expenses	DIDC 220	3,000	DICC 190	0	STIM.190	145,000	CON, 190	20,000	PCOM 190	o	168.0
Overhead	DIDC 225	10,000	DICC 195	5,000							15,0
emedial Cementing	DIDC 231	0			STIM 215	0			PCOM 215	0	
ADB/DEMOB	DIDC.240	75,000									75.0
Directional Orilling Services	DIDC.245	201,000									201.0
iolids Control	D1DC.260	74,000									74,
Vell Control Equip (Snubbing Services)	DIDC 265	74,000	DICC.240	0	STIM.240	81,000	i		PCOM 240	0	155,0
ishing & Sidetrack Services	DIDC.270	0	DICC.245	0	STIM.245	0			PCOM 245	o	
ompletion Rig					STIM.115	21,000			PCOM 115	0	21,0
all Tubing Services					STIM.260	393,000			PCOM 260	0	393.0
ompletion Logging/Perforating/Wireline					STIM.200	410,000			PCOM 200	0	410,0
omposite Plugs					STIM.390	108,000			PCOM.390	0	108,0
timulation Pumping/Chemicals/Additives/Sand					STIM.210	2,926,000			PCOM210	0	2,926,0
timulation Water/Water Transfer/Water Storage					STIM.395	702,000					702,0
imarex Owned Frac/Rental Equipment					STIM.305	42,000			PCOM.305	0	42,0
egal/Regulatory/Curative	DIDC.300	10,000					CON.300	0			10,0
Vell Control Insurance	DIDC.285	6,000					1				6,0
dajor Construction Overhead							CON.305	12,500			12,5
leal Time Operations Center	DIDC.560	0			STIM 560	0					
L/GL - Labor							CON.500	99,500			99,5
L/GL - Supervision							CON.505	7,000			7.0
urvey							CON.515	0			
WD/Other - Labor							CON.600	0			
SWD/OTHER - SUPERVISION	DIDC.435	100,000	DICC.220	17,000	STIM.220	262.000	CON.605 CON.220	0	PCOM 220	0	404,5
Contingency Contingency	0100.433	100,000	DILLEEV	17,000	31101.220	262,000	CON.221	15,000	PCONTEED	U	404,5
P&A Costs	DIDC.295	0	DICC.275	0			CONLET	13,000			13,0
Total Intangible Cost	0100.200	2,104,400	UNCERTY	364,020		5,495,000		282,500		117,340	8.363.2
Prive Pipe	DWE8.150	2,104,400		304,020		3,433,000		EGE, 300		117,340	0,303,4
anductor Pipe	DWEB.130	0									
Vater String	DWE8.135	0									
urface Casing	DWEB.140	14,000									14,0
Itermediate Casing 1	DWEB.145	49,000									49.0
ntermediate Casing 2	DWEB.155	0									
brilling Liner	DWEB.160	0									
roduction Casing or Liner		-	DWEA.100	333,000							333,0
roduction Tie-Back			DWEA.165		STIMT.101	0					
ubing					STIMT.105	51,000	4		PCOMT.105	0	51,0
Vellhead, Tree, Chokes	DWEB.115	20,000	DWEA 120	20,000	STIMT.120	25,000			PCOMT.120	0	65.0
ner Hanger, Isolation Packer	DWEB.100		DWEA.125	0		0.000					
acker, Nipples					STIMT.400	15,000			PCOMT 400	0	15,0
umping Unit, Engine					STIMT.405	0			PCOMT.405	0	
lownhole Lilt Equipment					STIMT.410	60,000			PCOMT.410	0	60,0
urface Equipment							1		PCOMT/420	59,000	59.0
Vell Automation Materials									PCOMT.455	0	
Total Tangible - Well Equipment Cost		83,000	1	353,000		151,000				59,000	6-16.0
VC Lease Equipment							CONT.400	57,000			57.0
anks, Tanks Steps, Stairs							CONT.405	0			
attery Equipment							CONT.410	0			
econdary Containments							CONT.415	8,500			8,5
verhead Power Distribution							CONT.420	0			
cility Electrical							CONT.425	22,500			22,5
elecommunication Equipment							CONT.426	0			
leters and Metering Equipment							CONT.445	3,500			3,5
acility Line Pipe							CONT.450	6,000			6,0
ase Automation Materials							CONT.455	23,000			23.0
/GL - Materials							CONT.550	14,500			14,5
L/GL - Line Pipe							CONT.555	25,000			25.0
							CONT.650	0			
WD/Other - Materials											
VD/Other - Materials VD/OTHER - LINE PIPE							CONT.655	0			



# Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM AFE # 26621011

11H									
inter a conduct		BCP - Drilling			ACP - Drilling			Comp/Stim	
Description	Codes		Amount	Codes		Amount	Codes		Amoun
Roads & Location	DIDC.100		70,000				STIM.100		5,00
Damages	DIDC.105		10,000						
Mud/Fluids Disposal	DIDC.255		200.000				STIM.255		53,00
Day Rate	DIDC.115	14 days at \$26,000/day	413,400	DICC.120	5 days at \$26.000/day	124,020			
Mise Preparation	DIDC.120		35.000						
Bits	DIDC.125		65,000			0	STIM.125		
Fuel		1,300 gal/day at \$3.00/gal	74,000			0			
Water for Drilling Rig (Not Frac Water)	DIDC.140		3,000	DICC.135		0	STIM.135		38,000
Mud & Additives	DIDC.145	0.0.00011	225,000	DIFELIE					
Surface Rentals		Per Day (BCP)/day	86,000	DICC.140		0	STIM.140		189,000
Downhole Rentals	DIDC.155		74,000				STIM.145		(
Flowback Labor							STIM,141		(
Automation Labor	0105175								
Formation Evaluation (DST, Coring, etc.)	DIDC.160		0				STIM.150		(
Mud Logging		14 days at \$1,200/day	22,000						
Open Hole Lagging	DIDC.180		0						
Cementing & Float Equipment	DIDC.185			DICC.155		150,000	CT111160		
Tubular Inspections	DIDC.190		25,000			5,000	STIM.160		2,000
Casing Crews	DIDC.195		12,000			20,000	STIM.165		(
Mechanical Labor	DIDC.200		20,000			3,000	STIM.170		0
Trucking/Transportation	DIDC.205		15,000			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		(
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			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/Perlorating/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/h	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	DWE8.150		0						
Conductor Pipe	DWEB.130		0						
Water String	DWEB.135		0						
Surface Cosing	DWEB.140	13 3/8" - 400ft at \$35.00/ft	14,000						
Intermediate Casing 1		9 5/8" - 1,876ft at \$26.00/ft	49,000						
Intermediate Casing 2	DWEB.155		0						
Drilling Liner	DWE8.160		0 0						
Production Casing or Liner			5	DWEA.100	5 1/2" - 17,519ft at \$19 00/h	333,000			
Production Tie-Back				DWEA.165			STIMT,101		٥
Tubing						2		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			DWEA.125		0			20,000
Packer, Nipples			0			5	STIMT.400		15,000
Pumping Unit, Engine							STIMT,405		13,000
Downhole Lift Equipment							STIMT.410		60,000
Surface Equipment									50,000
			33.000			353,000			151,000
Well Automation Materials			43.000			353,000			.54000
Well Automation Materials Total Tangible - Well Equipment Cost									
Well Automation Materials Total Tangible - Well Equipment Cost N/C Lease Equipment									
Well Automation Materials Total Tangible - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs									
Well Automation Materials Total Tangible - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs Battery Equipment									
Well Automation Materials Total Tangible - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs Battery Equipment Secondary Containments									
Well Automation Materials Total Tangible - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs Battery Equipment Secondary Containments Overhead Power Distribution									
Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stains Battery Equipment Secondary Containments Overhead Power Distribution Facility Electrical									
Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs Battery Equipment Secondary Containments Overhead Power Distribution Facility Electrical Telecommunication Equipment									
Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stairs Battery Equipment Secondary Containments Overhead Power Distribution Facility Electrical Telecommunication Equipment Meters and Metering Equipment									
Well Autoniation Materials Total Tangble - Well Equipment Cost 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									
Well Automation Materials Total Tangble - Well Equipment Cost 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									
Well Automation Materials Total Tangble - Well Equipment Cost 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 FUGL - Materials									
Well Automation Materials Total Tangble - Well Equipment Cost 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 - Une Pipe									
Well Automation Materials Total Tangble - Well Equipment Cost N/C Lease Equipment Tanks, Tanks Steps, Stains Battery Equipment Secondary Containments Overhead Power Distribution Facility Electrical Telecommunication Equipment Meters and Metering Equipment Facility Line Pipe Lease Automation Materials FL/GL - Line Pipe SWD/Other - Materials									
Well Automation Materials Total Tangble - Well Equipment Cost 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 - Une Pipe									



# Authorization For Expenditure - HAYDUKE 34-3 FEDERAL COM AFE # 26621011

		Production Equip			Post Completion		Tota
Description	Codes		Amount		5.0	Amount	
oads & Location	CON.100		8,000	PCOM.100	Pad/Road Clean Up	28,000	111
aniages	CON,105		2.500				12
lud/Fluids Disposal				PCOM.255	3,000 BWPD for 60 days @ \$0.25/bbi	45,000	298
ay Rate							537
isc Preparation							35
ts				PCOM.125		0	65
el				PCOM.130		0	74
ater for Drilling Rig (Not Frac Water)				PCOM.135		0	41
ud & Additives						-	225
rface Rentals	CON.140		4 000	PCOM 140	\$1,030/d for Production Target of 30 Days	30,900	309
winhole Rentals			1,000	PCOM.145		0	74
wback Labor					\$960/d for Production Target of 14 Day	13,440	
tomation Labor	CON.150		75 020	PCOM.150	a solution in the decident range tion in only		13
mation Evaluation (DST, Coring, etc.)	00000		23,000	FLOW.130		0	25
							122
d Logging							22
en Hole Logging							
nenting & Float Equipment							235
ular Inspections				PCOM.160		0	32
ing Crews							32
chanical Labor	CON.170		52,000			0	75
cking/Transportation	CON.175		6,500	PCOM.175		0	38
ervision	CON.180		5,000	PCOM.180		0	177
iler House/Camp/Catering							86
er Misc Expenses	CON.190		20,000	PCOM.190		0	168
rhead							15
nedial Cementing				PCOM.215		0	
B/DEMOB							75
ectional Drilling Services							201
ids Control							74
Control Equip (Snubbing Services)				PCOM.240		0	155
ing & Sidetrack Services				PCOM.245		0	
npletion Rig				PCOM.115		0	21
Tubing Services				PCOM.260		õ	393
npletion Logging/Perforating/Wireline				PCOM.200		0	-410
nposite Plugs				PCOM.390		0	
nulation Pumping/Chemicals/Additives/Sand				PCOM.210		0	108
nulation Water/Water Transfer/Water				PEGNETU		0	2,926
				BC011305			702
arex Owned Frac/Rental Equipment				PCOM.30S		0	42
al/Regulatory/Curative	CON.300		0				10
I Control Insurance							6
jor Construction Overhead	CON.305		12,500				12
I Time Operations Center							
GL - Labor	CON.500		99,500				99
GL - Supervision	CON.505		7,000				7
vey	CON.515		0				
D/Other - Labor	CON.600		0				
D/OTHER - SUPERVISION	CON.605		0				
ntingency	CON 220		25,500	PCOM.220		0	404.
ntingency	CON 221		15,000				15.
A Costs							
Total Intangible Cost			282,500			117,340	8.363
e Pipe							
ductor Pipe							
er String							
ace Casing							14
rmediate Casing 1				24			49
rmediate Casing 2							43,
ing Liner							
fuction Casing or Liner							333.
fuction Tie-Back							333,
ing				DCONT 105			
154				PCOMT.105		0	51,
-				PCOMT.120		0	65,
lhead, Tree, Chokes							
lhead, Tree, Chokes r Hanger, Isolation Packer						0	15,
lhead, Tree, Chokes r Hanger, Isolation Packer ker, Nipples				PCOMT.400			
lhead, Tree, Chokes r Hanger, Isolation Packer ter, Nipples sping Unit, Engine				PCOMT.405		0	
head, Tree, Chokes Hanger, Isolation Packer ier, Nipples ping Unit, Engine nhole Lift Equipment				PCOMT.405 PCOMT.410		٥	
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine minole Uit Equipment ice Equipment				PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator		
head, Tree, Chokes r Hanger, Isolation Packer er, Nipples ping Unit, Engine mbole Ult Equipment ace Equipment Automation Materials				PCOMT.405 PCOMT.410	XEC Owned Sand Separator	0 59,000 0	
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine nhole Uft Equipment ace Equipment Automation Materials Total Tangble - Well Equipment Com				PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000	59,
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine nhole Lift Equipment ace Equipment Automation Materials Total Tangföle - Well Equipment Cost Lease Equipment	CONT.400		57,000	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646,
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine nhole Lift Equipment ace Equipment Automation Materials Total Tangföle - Well Equipment Cost Lease Equipment	CONT.405		57,000 0	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646,
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine minole Uit Equipment Automation Materials Total Tangble - Well Equipment Cost Lease Equipment is, Tanks Steps, Stairs				PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646,
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine motole Ulit Equipment ace Equipment Automation Materials Total Tangbile - Well Equipment Com Lease Equipment 1, Tanks Steps, Stars	CONT.405		0	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57,
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine nhole Uit Equipment ace Equipment Automation Materials Total Tangble - Well Equipment Cost Lease Equipment s, Tanks Steps, Stars ery Equipment andary Containments	CONT.405 CONT.410		0	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57,
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine nhole Lift Equipment ace Equipment Automation Materials Total Tangble - Well Equipment Cost Lease Equipment s, Tanks Steps, Stairs sy: Equipment indary Containments head Power Distribution	CONT.405 CONT.410 CONT.415		0 0 8,500 0	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8,
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine hindle Uit Equipment ace Equipment Total Tangble - Well Equipment Cost Lease Equipment a, Tanks Steps, Stairs rey Equipment indary Containments head Power Distribution ity Electrical	CONT.405 CONT.410 CONT.415 CONT.420		0 0 8,500 0 22,500	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8,
Thead, Tree, Chokes P Hanger, Isolation Packer ter, Nipples ping Unit, Engine mhole Lift Equipment ace Equipment (Automation Materials Total Tangble - Well Equipment Cont Lease Equipment ex, Tanks Steps, Stairs ery Equipment andary Containments thead Power Distribution lity Electrical Communication Equipment	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.426		0 8,500 0 22,500 0	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8, 22,
head, Tree, Chokes Hanger, Isolation Packer ier, Nipples ping Unit, Engine hhole Uit Equipment ace Equipment Automation Materials Total Tangble - Well Equipment Cost Lease Equipment st, Tanks Steps, Stairs ery Equipment ndary Containments thead Power Distribution ling Electrical communication Equipment ers and Metering Equipment	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.426 CONT.426		0 8,500 0 22,500 0 3,500	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8, 22, 3,
head, Tree, Chokes Hanger, Isolation Packer er, Nipples ping Unit, Engine nhole Lift Equipment sce Equipment Automation Materials Toral Tangble - Well Equipment Com Lease Equipment s, Tanks Steps, Stars try Equipment ndary Containments head Power Distribution hy Electrical communication Equipment ers and Metering Equipment by Line Pipe	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.426 CONT.426 CONT.445 CONT.450		0 8,500 0 22,500 0 3,500 6,000	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8, 22, 3, 6,
Ihead, Tree, Chokes  r Hanger, Isolation Packer ker, Nipples minole Lift Equipment lace Equipment lace Equipment Lautomation Materials Total Tangble - Well Equipment Cont Lease Equipment scatters, Stars ey Equipment andary Containments rhead Power Distribution lifty Electrical communication Equipment lifty Line Pipe e Automation Materials	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.450 CONT.455		0 8,500 0 22,500 0 3,500 6,000 23,000	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8, 22, 3, 6, 23,
Ihead, Tree, Chokes P Hanger, Isolation Packer ker, Nipples iping Unit, Engine whole Lift Equipment ace Equipment Total Tangble - Well Equipment Cost Total Tangble - Well Equipment Cost Lesse Equipment iso, Tanks Steps, Stairs ey Equipment andary Contairments rhead Power Distribution liny Electrical communication Equipment est Automation Materials it - Materials	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.450 CONT.455 CONT.550		0 8,500 0 22,500 0 3,500 6,000 23,000 14,500	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	60, 59, 646, 57, 8, 22, 3, 6, 6, 23, ( 23, ( 14, 57)
Thead, Tree, Chokes P Hanger, Isolation Packer (er, Nipples ping Unit, Engine mhole Uit Equipment ace Equipment Lautomation Materials Total Tangble - Well Equipment Cost Lease Equipment cs, Tanks Steps, Stars ery Equipment inder Steps, Stars ery Equipment ing Electrical communication Equipment ers and Metering Equipment ers and Metering Equipment ity Line Pipe e Automation Materials i Materials i Materials	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.426 CONT.450 CONT.450 CONT.455 CONT.550 CONT.555		0 8,500 0 22,500 0 3,500 6,000 23,000 14,500 25,000	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8, 22, 3, 6, 23,
head, Tree, Chokes Hanger, Isolation Packer ler, Nipples ing Unit, Engine minole Ulit Equipment ace Equipment Automation Materials Total Tangble - Well Equipment Cont lease Equipment or, Tanks Steps Stars ery Equipment indary Containments thead Power Distribution ing Electrical communication Equipment ers and Metering Equipment ers and Metering Equipment L - Materials L - Materials	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.425 CONT.426 CONT.455 CONT.450 CONT.455 CONT.550 CONT.555 CONT.650		0 8,500 0 22,500 6,000 23,000 14,500 25,000 0	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8, 22, 3, 6, 23, 14,
head, Tree, Chokes Planger, Isolation Packer ier, Nipples ping Unit, Engine nhole Uit Equipment ace Equipment Automation Materials Total Tangble - Well Equipment Cost Lease Equipment s, Tanks Steps, Stars ery Equipment indary Containments thead Power Distribution ing Electrical communication Equipment ers and Metering Equipment ers and Metering Equipment L - Materials L - Materials L - Unie Pipe	CONT.405 CONT.410 CONT.415 CONT.420 CONT.425 CONT.426 CONT.450 CONT.450 CONT.455 CONT.550 CONT.555		0 8,500 0 22,500 0 3,500 6,000 23,000 14,500 25,000	PCOMT.405 PCOMT.410 PCOMT.420	XEC Owned Sand Separator	0 59,000 0	59, 646, 57, 8, 22, 3, 6, 23, 14,

### 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

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

### CASE NO. 20783

### CASE NO. 20784

### AFFIDAVIT OF HARRISON HASTINGS

STATE OF TEXAS	)
COUNTY OF MIDLAND	) ss. )

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 crosssection 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'.