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

APPLICATIONS OF CIMAREX ENERGY CO.
FOR A HORIZONAL SPACING UNIT
AND COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

Case Nos. 23448 – 23455

APPLICATIONS OF CIMAREX ENERGY CO. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

Case Nos. 23594 - 23601

APPLICATIONS OF READ & STEVENS, INC. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

Case Nos. 23508 – 23523

# MOTION FOR AN ORDER TO PROHIBIT THE DRILLING OF WELLS IN THE UPPER WOLFCAMP IN ORDER TO PROTECT CORRELATIVE RIGHTS AND OPTIMIZE PRODUCTION OF THE SUBJECT LANDS

Cimarex Energy Co., ("Cimarex"), through its undersigned attorneys, respectfully requests that the New Mexico Oil Conservation Division ("Division") issue an order prohibiting the drilling of horizontal wells in the Upper Wolfcamp in Sections 4, 5, 8 and 9, Township 20 South, Range 34 East, NMPM, Lea County ("Subject Lands") to protect correlative rights and optimize production of the Subject Lands. In support of its Motion, Cimarex submits the following:

### I. Factual and procedural background

1. Cimarex has been preparing to develop Subject Lands since 2018. Based on its detailed analysis of the specific geology and reservoir characteristics of this area, on March 9, 2023, Cimarex filed applications in Case Nos. 23448 through 23455 for the compulsory pooling

of the Bone Spring formation underlying the Subject Lands, proposing the Mighty Pheasant Wells for units in Sections 5 and 8, and proposing the Loosey Goosey Wells for units in Sections 4 and 9.

- 2. As a result of its evaluation of the Subject Lands, as well as the surrounding area, Cimarex found that not only were the best reserves of oil and gas residing in the 3<sup>rd</sup> Bone Spring Sand but also that the Upper Wolfcamp reservoir under the Subject Lands and surrounding area was significantly below average in quality and potential, rendering Wolfcamp wells economically unfeasible. *See* Exhibit 1, attached hereto, showing that the consensus landing for optimal development is the 3<sup>rd</sup> Bone Spring Sands, not the Upper Wolfcamp.
- 3. Cimarex has also determined that there are no indications of any major geomechanical changes/frac baffles in between Cimarex's 3<sup>rd</sup> Sand target and Permian Resources' Wolfcamp Sands target, indicating that these two intervals are most likely one shared reservoir tank. Due to the absence of the baffle between the 3<sup>rd</sup> Bone Spring Sand and the Upper Wolfcamp, Cimarex has concluded that if Upper Wolfcamp wells were to be completed while drilling and developing the 3<sup>rd</sup> Bone Spring Sand, those wells would drain much of the reserves in the 3rd Bone Spring Sand, where the best reserves are located, and would likely result in permanent damage to the target reservoir in the 3<sup>rd</sup> Bone Spring Sand.
- 4. Thus, Cimarex limited its proposed development and applications for compulsory pooling to the Bone Spring and did not seek to pool the Upper Wolfcamp. Cimarex's analysis of the Subject Lands comports to how other operators are developing the surrounding areas that share the same three fundamental characteristics, *viz.*, excellent reserves in the 3<sup>rd</sup> Bone Spring Sand, poor quality reservoir in the Upper Wolfcamp, and the lack of a baffle between the two. *See* Exhibit 2, attached hereto, showing the overwhelming predominance of Bone Spring development

and the dearth and rarity of the Wolfcamp development.

- 5. A little more than a month after Cimarex filed is applications to develop and pool the Bone Spring Formation, Read & Stevens, Inc., in association with Permian Resources Operating, LLC (collectively referred to as "Permian Resources"), filed competing applications to pool the Bone Spring formation of the Subject Lands in Case Nos. 23508-23511 and 23516-23519. Permian Resources also filed applications for drilling and pooling the Wolfcamp formation in Case Nos. 23512-23515 and 23520-23523, proposing to drill eight wells in the Upper Wolfcamp despite the fact that those wells would drain the 3<sup>rd</sup> Bone Spring Sand and would likely result in permanent damage to the target reservoir located in the Bone Spring where the best reservoirs are located.
- 6. Given the poor quality of the Upper Wolfcamp reservoir, the lack of the baffle that would otherwise minimize drainage of the 3<sup>rd</sup> Bone Spring, the fact that additional Upper Wolfcamp wells will not increase EUR, and the recent history of developing the lands in the area that account for these facts, Permian Resources' decision to seek to develop the Upper Wolfcamp Formation is baffling. The geological data demonstrates that expending tens of millions of dollars¹ drilling unnecessary wells in the Upper Wolfcamp that will not increase EUR, but instead would place a substantial financial burden on Working Interest owners, incur environmental risks of drilling additional and unnecessary wells, undermine overall production, and likely result in permanent damage to the target reservoir, creating waste of oil and gas that would be forever lost through the misguided development of the Upper Wolfcamp. See Exhibit 4
- 7. Permian Resources' decision to propose to develop the Upper Wolfcamp created a dilemma for Cimarex. On the one hand, based on clear geological and reservoir data, Cimarex

<sup>&</sup>lt;sup>1</sup> Permian Resources is proposing to drill eight Upper Wolfcamp wells on the Subject Lands at a total estimated cost of \$95,022,896. *See*: Permian Well Proposals, a copy of which are attached hereto as Exhibit 3.

knew, that the Upper Wolfcamp should not be developed on the Subject Lands but, on the other hand, Cimarex understood that once Permian Resources filed its application to pool the Upper Wolfcamp, Cimarex needed to provide a counter proposal that would oppose Permian Resources' Upper Wolfcamp applications.

8. Consequently, Cimarex drafted competing pooling applications for the Upper Wolfcamp in which it explained that the best way to develop the target reservoir is by drilling wells in the 3<sup>rd</sup> Bone Springs Sands, the same wells proposed by Cimarex's Bone Spring applications and prohibit the drilling of wells in Upper Wolfcamp to prevent drainage from and damage to the target reservoir. Cimarex filed its Wolfcamp applications on June 5, 2023, in Case Nos. 23594 – 23601, in which it dedicated the Wolfcamp units exclusively to wells drilled in the 3<sup>rd</sup> Bone Spring Sands, and not in the Upper Wolfcamp, in order preserve the Upper Wolfcamp from being drilled and thereby protect the 3<sup>rd</sup> Bone Spring Sand from drainage and damage.

### II. Argument

- A. The optimal development of the Subject Lands is to drill wells in the 3<sup>rd</sup> Bone Spring Sand and create a protective buffer zone that would prohibit the drilling of wells in the Upper Wolfcamp.
- 9. In order to protect the abundant reserves in the 3<sup>rd</sup> Bone Spring Sand and avoid the inherent damage that Permian Resources' proposed Upper Wolfcamp wells would inflict on the reservoir, the Division should create a buffer zone that prohibits development of the subpar Upper Wolfcamp. The history and practice of achieving optimal development in the area surrounding the Subject Lands has repeatedly been demonstrated over the years by the fact the operators who were free to drill in both the Bone Spring and Wolfcamp decided to develop the 3<sup>rd</sup> Bone Spring Sands and to forego drilling any Upper Wolfcamp wells. *See* Exhibits 1 and 2, attached hereto.
  - 10. Cimarex filed its Wolfcamp applications only as a response to Permian Resources'

unexpected and imprudent Wolfcamp applications as a means to prevent Permian Resources from making the mistake of drilling the costly, wasteful, and unnecessary Upper Wolfcamp wells. In its competing Wolfcamp applications, Cimarex emphasized that only the 3<sup>rd</sup> Bone Spring Sands should be drilled and not the Upper Wolfcamp, consistently advocating that the Division should not allow the drilling of Upper Wolfcamp wells on the Subject Lands.

- Wolfcamp based on wells drilled in 3<sup>rd</sup> Bone Spring Sand may not be the best way to protect correlative rights and counter Permian Resources' plan for the Upper Wolfcamp. Cimarex submits that the best course of action for the Division to follow, in order to ensure achieving optimal production from the rich reserves located in the 3<sup>rd</sup> Bone Spring Sand and to protect correlative rights, would be to allow the drilling of the 3<sup>rd</sup> Bone Spring Sand wells, as proposed by Cimarex, and to establish a vertical protective zone that would preclude the drilling of wells in the subpar Upper Wolfcamp. Such a protective zone would prevent drainage of the 3<sup>rd</sup> Bone Spring, thus protecting the correlative rights of the owners in the 3<sup>rd</sup> Bone Spring. In addition, the protective zone would spare the working interest owners approximately \$95 Million for wells that not only fail to increase the EUR but would also likely damage the reservoir. Cimarex has carefully analyzed the need for such a protective buffer zone and provides in Exhibit 5, attached hereto, a graphic depiction and quantification of the area and extent of the Upper Wolfcamp that needs to be protected.
- 12. The Division has the clear authority to fashion such a necessary solution and establish a protective zone under NMSA 1978 Section 70-2-11, which grants the Division authority "to do whatever may be reasonably necessary" to protect correlative rights, prevent waste, and prevent the drilling of unnecessary wells. The wells proposed to be drilled by Permian

Resources in the Upper Wolfcamp are clearly unnecessary, wasteful, and unwarranted based on the geological and reservoir data.

13. When Cimarex drafted its competing application to pool the Wolfcamp formation as a counter to Permian Resources' Wolfcamp application, it did so with the intent of dedicating the Wolfcamp unit to a well drilled in the 3<sup>rd</sup> Bone Spring in order to prevent the Upper Wolfcamp from being drilled and establishing the Upper Wolfcamp as a buffer zone. Cimarex submits this Motion with the same intent - to prohibit the drilling of wells in the Upper Wolfcamp by creating a protective buffer zone that would prevent drainage of the target reservoir, protect correlative rights, prevent waste, avoid the drilling of unnecessary wells, and protect the target reservoir from harm and damage. Thus, Cimarex by this Motion respectfully requests that its competing applications in Case Nos. 23594, 23595, 23596, 23597, 23598, 23599, 23600, and 23601 to pool the Wolfcamp formation be dismissed; that the Division establish a protective buffer zone that prohibits the drilling of wells in the Upper Wolfcamp; and that the Division require any operator who wants develop the Lower Wolfcamp, below the proposed buffer zone, to file a separate pooling application that specifically targets the Lower Wolfcamp.

### III. Conclusion:

Cimarex respectfully requests that the Division consider this Motion as part of the contested hearing for the above-referenced cases during which Cimarex and Permian Resources will be presenting their respective plans for the development of the Subject Lands. Permian Resources' development plans consist of drilling both the Bone Spring and Upper Wolfcamp formations; whereas, Cimarex's development plans consist of drilling only the Bone Spring formation to achieve optimal production of the Subject Lands that protects correlative rights and avoids waste.

If the Division finds Cimarex's production data and analysis of the geology and target reservoir to be accurate and persuasive, and as a result, decides to grant Cimarex operatorship of the Subject Lands by approving its applications for the Bone Spring, then concurrently with the Division's decision, Cimarex respectfully asks the Division to grant this Motion by enacting the following: (1) Dismiss Cimarex's applications for the Wolfcamp in Case Nos. 23594, 23595, 23596, 23597, 23598, 23599, 23600, and 23601, and as an alternative to pooling the Wolfcamp, pool only the Bone Spring formation underlying the units proposed by Cimarex in Case Nos. 23448 – 23455; (2) establish a protective buffer zone covering the Upper Wolfcamp below the base of the Bone Spring that would prohibit the drilling of wells in the Upper Wolfcamp in order to protect the correlative rights of the owners, prevent waste and optimize production from the Subject Lands; and (3) deny the applications filed by Permian Resources that propose to pool the Wolfcamp formation for the purpose of drilling the Upper Wolfcamp and require any operator wanting to develop the Lower Wolcamp, below the protective zone, to file separate applications that actually target the Lower Wolfcamp, and not the Upper Wolfcamp.

Respectfully submitted,

ABADIE& SCHILL, PC

/s/ Darin C. Savage

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**Attorneys for Cimarex Energy Co.** 

### **CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing was filed with the New Mexico Oil Conservation Division and was served on counsel of record via electronic mail on July 13, 2023:

Michael H. Feldewert — mfeldewert@hollandhart.com Adam G. Rankin — agrankin@hollandhart.com Julia Broggi — jbroggi@hollandhart.com Paula M. Vance — pmvance@hollandhart.com

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Attorneys for Sandstone Properties, LLC

/s/ Darin C. Savage

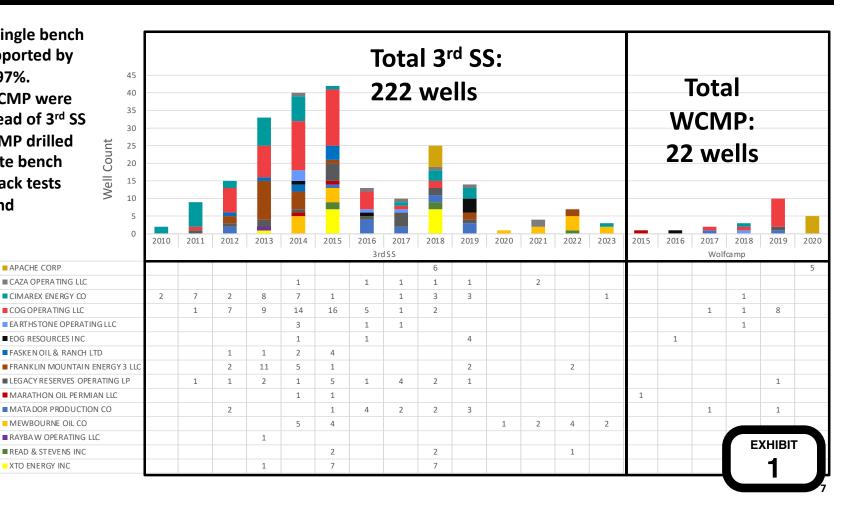
Darin C. Savage

### Well Count by Landing and Operators Shows 3<sup>rd</sup> Sand is the Consensus Landing

- 3<sup>rd</sup> Sand / single bench landing supported by 236 wells, 97%.
- 13 of 22 WCMP were drilled instead of 3rd SS
- 5 of 22 WCMP drilled as a separate bench
- 3 WCMP stack tests with 3rd Sand

APACHE CORP

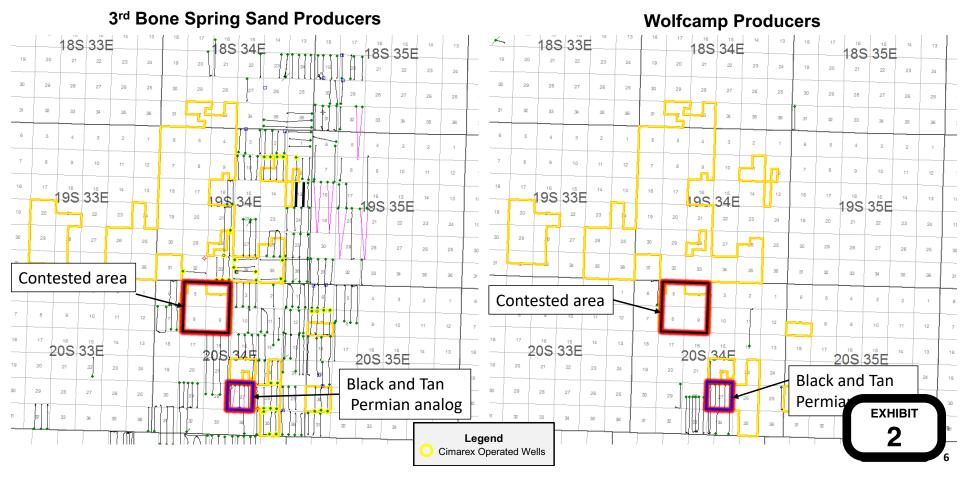
XTO ENERGY INC





### 3<sup>rd</sup> Bone Spring Sand is the Established Single Bench Target at 4 WPS within AOI

42,650 acres developed with more than 1 well, all but one development, 98.5% of sections similar to Cimarex proposal



## Permian Resources Operating, LLC 300 N. Marienfeld St., Ste. 1000 Midland, TX 79701 Phone (42) 605 4222 - Ear. (42) 605 4252

ATE:	2.17.2023			AFE NO.:	1
ELL NAME:	Bane 4-9 Federal Com 20	пн		FIELD:	Tonto; Wolfcamp
OCATION:	Section 4, T20S-R34E			MD/TVD:_	21,210' / 10,925' 10,000'
OUNTY/STATE:	Lea County, New Mexic	<u> </u>		DRILLING DAYS:	19.6
EOLOGIC TARGET:	WCXY	<del></del>		COMPLETION DAYS:	19
OLOGIC TANGLIT.		well and complete w	rith 44 stages. AFE includ		
MARKS:	AL install cost				
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE	COSTS	COSTS 59,066	COSTS	COSTS 37,500	COSTS 5 96,50
nd/Legal/Regulatory cation, Surveys & Dam	ages	288,079	18,067	2,500	308,64
ight/Transportation		47,628	43,778	25,000	116,40
ental - Surface Equipme		124,327	215,417	105,000	444,74 265,2
ental - Downhole Equip ental - Living Quarters	ment	205,424 48,083	59,805 54,480	<del></del>	102,5
Directional Drilling, Sur	veys	429,543			429,5
Drilling		753,820			753,8
Orill Bits Fuel & Power		100,176 188,935	725,061	<del></del>	100,13
ementing & Float Equi	D	243,296	- 12,001		243,2
Completion Unit, Swab,	CTU	<del></del>	<del></del>	15,000	15,0
erforating, Wireline, Sl	ickline	<u>:</u>	393,136 123,274		393,13 123,2
ligh Pressure Pump Tru Completion Unit, Swab,		<del></del>	146,484	<del></del>	146,4
and Circulation System		105,209			105,2
Mud Logging		17,529			17,5
Logging/Formation Eva Mud & Chemicals	ituation	7,270 361,835	8,339 438,185	10,000	15,6 810,0
Mud & Chemicals Waler		43,459	661,625	300,000	1,005,0
Stimulation			814,033		814,0
Stimulation Flowback &	Disp		121,606	150,000	271,6
ud/Wastewater Dispo		193,104	61,151	21,667	254.2 276,2
ig Supervision / Engine rig & Completion Over		10,423	153,420	- 21,007	10,4
abor	•	153,358	69,489	101,667	324,5
ppant			1,255,227		1,255,2
nsurance Contingency		14,660	24,421	3,833	14,6
onungency lugging & Abandonme	ent	<del></del>	- 147/14		
	TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE	COSTS	COSTS	COSTS	COSTS	COSTS
face Casing			<u> </u>	<u>.</u>	\$ 122,2
ermediate Casing		344,284	<u>-</u> _	<u> </u>	344.2
illing Liner eduction Casing		687,039	<del></del>	<del></del>	687,0
duction Liner			<del></del>		
ing				140,000	140,0
ellhead		64,820	<u>-</u>	40,000	104,8
ckers, Liner Hangers nks		14,732	<del></del>	20,000 45,833	34,7 45,8
oduction Vessels		<del></del>	<del></del>	126,667	126,6
low Lines			-	66,667	66,6
d string	_		·	-	-
tificial Lift Equipmen Impressor	ı	<del></del>	<del></del>	90,000 5,833	90,0 5,8
tallation Costs		<del></del>	<del></del>		
ace Pumps			-	61,667	61,6
vnhole Pumps isurement & Meter I:	natallation			116,667	116,6
asurement & Meter it Conditioning/Deby		<del></del>	<del></del>	110,00/	116,6
rconnecting Facility	Piping	<del></del>		20,000	20,0
hering/Bulk Lines	_				
lves, Dumps, Control nk / Facility Containn	lers	<u>-</u>		108,333	108,3 43,3
: / Facility Containt : Stack	HT.M	<del></del>	<del></del>	16,667	16,6
trical/Grounding				50,000	50,0
nmunications/SCAI	DA .			36,667	36,6
rumentation/Safety	TOTAL TANGIBLES >	1,233,109	- 0	833 989,167	2,222,
	TOTAL COSTS >		5,367,000	1,761,334	11,877,
	10141(0313)	2,757,75	- United (1974)	1,/01,334	11,0//2
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Drilling Engine	er. PS				
Completions Engine					
Production Engine					
ources Operation	ng, LLC APPROVAL:				
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up -	WH				CRM
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PERATING PARTN	ER APPROVAL:				
Company Nan	no:		Working Interest (%):		Tax ID:
	by:		Date:		
Signed !					
_	tle:		Approval: [	Yes	□ No (r

Permian Resources Operating, LLC 300 N. Marienfeld St., Stc. 1000 Midland, TX 79701 Phone (432) 695-4022 • Fax (432) 695-4063

DATE:	ESTIMAT				
	2.17.2023			AFE NO.:	1
WELL NAME:	Bane 4-9 Federal Com	202H		FIELD;	Tonto; Wolfcamp
LOCATION:	Section 4, T20S-R34E			MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mer	sico		LATERAL LENGTH:	10,000
	Dea County, Iven Inc.			DRILLING DAYS:	19.6
Permian WI:	WCXY			COMPLETION DAYS:	19
GEOLOGIC TARGET:		XY well and complete wit			
REMARKS:	AL install cost	XY well and complete wil	un 44 stages. Art include	s driming, completions, i	
<u> </u>		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE	COSTS	COSTS	COSTS	COSTS	COSTS
1 Land/Legal/Regulatory		S 59,066		37,500	5 96,566 308,647
2 Location, Surveys & Dama	ges	288,079	18,067 43,778	2,500 25,000	116,406
4 Freight / Transportation		47,628 124,327	215,417	105,000	444,744
5 Rental – Surfaçe Equipmer 6 Rental – Downhole Equips		205,424	59,805	- 10,,000	265,229
7 Rental - Living Quarters		48,083	54,480		102,562
10 Directional Drilling, Sur	cys	429,543		<del></del>	429,543
11 Drilling	-	753,820	•	·	753,820
12 Drill Bits		100,176			100,176
13 Fuel & Power		188,935	725,061	<u>:</u>	913,996
14 Cementing & Float Equip 15 Completion Unit, Swab, (		243,296	<del></del>	15,000	243,296 15,000
15 Completion Unit, Swap, 1 16 Perforating, Wireline, Sil		<del></del>	393,136	15,000	393,136
17 High Pressure Pump Tru		<del></del>	123,274		123,274
18 Completion Unit, Swab,		<del></del>	146,484	-	146,484
20 Mud Circulation System		105,209			105,209
21 Mud Logging		17,529			17,529
22 Logging/Formation Eval	uation	7,270	8,339	****	15,609
23 Mud & Chemicals		361,835	438,185	10,000	810,020
24 Water		43,459	661,625 814,033	300,000	1,005,083 814,033
25 Stimulation 26 Stimulation Flowback &	Dien	<del></del>	121,606	150,000	271,606
26 Stimulation Flowback & 28 Mud/Wastewater Dispo		193,104	61,151	130,000	254,254
30 Rig Supervision / Engine		121,196	133,420	21,667	276,283
32 Drig & Completion Over		10,423			10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant			1,255,227		1,255,227
95 Insurance		14,660			14,660
97 Contingency		<u> </u>	24,421	3,833	28,254
99 Plugging & Abandonmer	TOTAL INTANGIBLE		5,367,000	772,167	9,655,58
	TOTALINTANGIBLE				_
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE	COSTS	COSTS	COSTS	COSTS	COSTS
60 Surface Casing		S 122,234			\$ 122,234 344,284
61 Intermediate Casing 62 Drilling Liner		344,284		<del>-</del>	344,284
63 Production Casing		687,039	<del></del>		687,039
64 Production Liner			<del></del>	<del></del>	
65 Tubing		<del></del>	<del></del>	140,000	140,000
66 Wellhead		64,820		40,000	104,820
67 Packers, Liner Hangers		14,732		20,000	34,732
68 Tanks			-	45,833	45,833
69 Production Vessels				126,667	126,667
70 Flow Lines		<u>·</u> _		66,667	66,667
71 Rod string			<del></del>	90,000	90,000
72 Artificial Lift Equipment 73 Compressor		<del></del>	<u>-</u>	5,833	5,833
74 Installation Costs		<del></del>	<del></del>	- 5,055	
75 Surface Pumps		<del></del>	<del></del>	61,667	61,667
76 Downhole Pumps		<del></del>		<del></del>	
77 Measurement & Meter Ir	stallation			116,667	116,667
78 Gas Conditioning / Dehy	dration	<del>-</del> _		-	-
79 Interconnecting Facility 1	iping			20,000	20,000
80 Gathering / Bulk Lines				100.00	***************************************
81 Valves, Dumps, Controll				108,333	108,333
82 Tank / Facility Containm	ent	<del></del>		43,333	43,333
83 Flare Stack 84 Electrical/Grounding		<del></del> -	<del></del>	50,000	50,000
85 Communications / SCAE	A.	<del></del>	<del></del>	36,667	36,667
86 Instrumentation / Safety		<del></del>	-	833	833
	TOTAL TANGIBLE		0	989,167	2,222,270
	TOTAL COST	S > 4,749,528	5,367,000	1,761,334	11,877,86
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EPARED BY Permian Res	ources Operaring, LLC	<del></del>			
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Completions Enginee					
Production Engine					
		-			
	g, LLC APPROVAL:	<del></del> .			
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mian Resources Operatio	0			<b>,</b>	CRM
mian Resources Operatio	О <u></u>		,,,,		
	WH	VP - Geoscier	,		
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Co-CE VP - Land & Leg IN OPERATING PARTN	BG BG ER APPROVAL:	VP - Geosciei	so so		
Co-CE	BG BG ER APPROVAL:	VP - Geosciei	nces	т	ax ID:
Co-CE VP - Land & Leg IN OPERATING PARTN Company Nam	BG BG BER APPROVAL:	VP - Geosciei	SO  Working Interest (%):	т	ax ID:
Co-CE VP - Land & Leg N OPERATING PARTN	BG BG BER APPROVAL:	VP - Geoscien	so so		ax ID:

Permian Resources Operating, LLC 300 N. Marienfeld St., Str. 1000 Midland, TX 79701 Phone (432) 695-4222 • Fax (432) 695-4063

	ESTIMATE				
DATE:	2.17.2023			AFE NO.:	1
WELL NAME:	Bane 4-9 Federal Com	03H		FIELD:	Tonto; Wolfcamp
	Section 4, T205-R34E			MD/TVD:	21,210' / 10,925'
LOCATION:					
COUNTY/STATE:	Lea County, New Mexi	co		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
		Y well and complete wi	th 44 stages. AFE include	es drilling, completions, i	lowback and Initial
REMARKS:	AL install cost	<del></del>	<u> </u>		
INTANGIBLE	COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
Land/Legal/Regulatory		S 59,066	-	37,500	<b>5</b> 96,566
Location, Surveys & Damas	res.	288,079	18,067	2,500	308,647
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O Directional Drilling, Surve	N/E	429,543		<del></del>	429,543
1 Drilling	.,,,	753,820	<del></del>		753.820
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4 Cementing & Float Equip		243,296	720,001		243,29
5 Completion Unit, Swab, C	TT:	245,270	<del></del>	15,000	15,000
		<del></del>	393,136	15,000	393,136
6 Perforating, Wireline, Slic			123,274	<del></del>	123,274
7 High Pressure Pamp Truc					
8 Completion Unit, Swab, C	10	<del></del>	146,484		146,484
to Mud Circulation System		105,209			105,209
1 Mud Logging		17,529	-		17,52
22 Logging/Formation Evalu	ation	7,270	8,339		15,605
3 Mud & Chemicals		361,835	438,185	10,000	810,020
14 Water		43,459	661,625	300,000	1,005,08
25 Stimulation			814,033		814,03
26 Stimulation Flowback & E			121,606	150,000	271,60
28 Mud/Wastewater Dispos	d	193,104	61,151		254,25
30 Rlg Supervision / Enginee	ring	121,196	133,420	21,667	276,283
32 Drlg & Completion Overh	ead	10,423		<del></del>	10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant		<del></del>	1,255,227		1,255,22
95 Insurance		14,660		<del></del>	14,660
97 Contingency		<del></del>	24,421	3,833	28,254
99 Plugging & Abandonmen		<del></del>	<del></del>		
	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,58
			COMPLETION		TOTAL
TANGIBLE C	ooms.	DRILLING COSTS	COSTS	PRODUCTION COSTS	COSTS
60 Surface Casing	0515	\$ 122,234			5 122,234
61 Intermediate Casing		344,284			344,284
62 Drilling Liner					
63 Production Casing		687,039		<del></del>	687,039
64 Production Liner		007,037		<del></del>	
			<del></del>	140,000	140,000
65 Tubing					104,820
66 Wellhead		64,820	<u> </u>	40,000 20,000	34,73
67 Packers, Liner Hangers		14,732	<u>-</u>	45,833	45,833
68 Tanks				126,667	
69 Production Vessels			<u>-</u>		126,66
70 Flow Lines		<del></del>		66,667	66,66
71 Rod string		<u> </u>	<u>-</u> _		90,00
72 Artificial Lift Equipment			<u>:</u>	90,000	
73 Compressor				5,833	5,833
74 Installation Costs				<u>-</u>	
75 Surface Pumps				61,667	61,66
76 Downhole Pumps		-			
77 Measurement & Meter Ins	taliation		-	116,667	116,66
78 Gas Conditioning / Dehyo	Iration	-	-	-	
79 Interconnecting Facility P				20,000	20,00
30 Gathering / Bulk Lines		<del></del>	<del></del>		-
31 Vaives, Dumps, Controlle	rs			108,333	108,33
82 Tank / Facility Containme		-		43,333	43,33
83 Flare Stack			-	16,667	16,66
84 Electrical/Grounding		<del></del>	<del></del>	50,000	50,00
85 Communications / SCAD.	۸.	-	-	36,667	36,66
86 Instrumentation / Safety		<del></del>	<del></del>	833	833
	TOTAL TANGIBLES			989,167	2,222,27
	TOTAL COSTS		5,367,000	1,761,334	11,877,86
	.OIAL COSIS		aprox pard	A POLICE TO A POLI	***************************************
PARED BY Permian Res	ources Operating, LLC:				
Drilling Engineer	: P5				
Completions Engineer					
Production Engineer	: DC		-		
nian Resources Operatin	LIC APPROVAL.			<u></u>	
Co-CEC		Co-C		VP - Oper	
	- WH		JW		CRM
VP - Land & Lega	BG	VP - Geoscie			
	n				
	K APPROVAL:				
OPERATING PARTNE					
OPERATING PARTNE			Working Interest (%):	T	ax ID:
Company Name	:			T	ax ID:
	:		Working Interest (%): Date:	T	ax ID:
• /	:				ax ID:

Permian Resources Operating, LLC 300 N. Marienfeld St., Ste. 1000 Midland, TX 79701 Phone (432) 695-4222 • Fax (432) 695-4063

		OF COSTS AND AUT	HORIZATION FOR EXPEND		
DATE:	2.17.2023			AFE NO.:	1
WELL NAME:	Bane 4-9 Federal Com 2	204H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 4, T20S-R34E			MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mexi	co		LATERAL LENGTH:	10,000
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
		Y well and complete	with 44 stages. AFE include	_	
REMARKS:	AL install cost				
		DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE O		S 39,066		37,500	s 96,56
2 Location, Surveys & Damag		288,079	18,067	2,500	308,64
Freight/Transportation		47,628	43,778	25,000	116,40
5 Rental - Surface Equipment		124,327	215,417	105,000	444,74
6 Rental - Downhole Equipm	ent	205,424	59,805		265,22
7 Rental - Living Quarters 10 Directional Drilling, Surve		48,083 429,543	54,480		102,56 429,54
10 Directional Drining, Surve 11 Drilling	ys	753,820	<del></del>	<del></del>	753,82
12 Drill Bits		100,176			100,17
13 Fuel & Power		188,935	725,061		913,99
14 Cementing & Float Equip		243,296			243,29
15 Completion Unit, Swab, C	TU 			15,000	15,00
16 Perforating, Wireline, Slick		<del></del>	393,136 123,274	<del></del>	393,13 123,27
17 High Pressure Pump Truc! 18 Completion Unit, Swab, C		<del></del>	146,484	<del></del>	146,48
20 Mud Circulation System		105,209	- 110,101		105,20
21 Mud Logging		17,529			17,52
22 Logging / Formation Evalu	ation	7,270	8,339		15,60
23 Mud & Chemicals		361,835	438,185	10,000	810,02
24 Water		43,459	661,625	300,000	1,005,08
25 Stimulation	d		814,033 121,606	150,000	814,03 271,60
26 Stimulation Flowback & E 28 Mud/Wastewater Dispose		193,104	61,151	150,000	254,25
28 Mud / Wastewater Dispose 30 Rig Supervision / Enginee		121,196	133,420	21,667	276,28
32 Drig & Completion Overh		10,423	- 133/120		10,42
35 Labor		153,358	69,489	101,667	324,51
54 Proppant			1,255,227		1,255,22
95 Insurance		14,660			14,66
97 Contingency			24,421	3,833	28,25
99 Plugging & Abandonment	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,5
	TOTALINTANGIBLES	DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE C	osts	COSTS	COSTS	COSTS	COSTS
60 Surface Casing		s 122,234			\$ 122.23
61 Intermediate Casing		344,284	<u>·</u>	<u>-</u>	344,28
62 Drilling Liner		687,039	<del></del>	<del></del>	687,03
63 Production Casing 64 Production Liner			·	<del></del>	
65 Tubing		<del></del>	<del></del>	140,000	140,00
66 Wellhead		64,820		40,000	104,82
67 Packers, Liner Hangers		14,732		20,000	34,73
68 Tanks			-	45,833	45,83
69 Production Vessels				126,667	126,66
70 Flow Lines			·	66,667	66,66
71 Rod string		<del>-</del>	<del>-</del>	90,000	90,00
72 Artificial Lift Equipment 73 Compressor		<del></del>	<del></del>	5,833	5,83
74 Installation Costs		<del></del>	<del></del>		
75 Surface Pumps				61,667	61,66
76 Downhole Pumps				•	-
77 Measurement & Meter Ins				116,667	116,66
78 Gas Conditioning / Dehyd				***	
79 Interconnecting Facility Pi	brud	<u>_</u>	<del></del>	20,000	20,00
80 Gathering / Bulk Lines 81 Valves, Dumps, Controller	·c	<del></del>	<del></del>	108,333	108,33
82 Tank / Facility Containme		<del></del>	<del></del>	43,333	43,33
83 Flare Stack		<del></del>		16,667	16,66
84 Electrical / Grounding		<del></del>		50,000	50,00
85 Communications / SCADA	<b>L</b>			36,667	36,66
86 Instrumentation/Safety				833	83
	TOTAL TANGIBLES		0	989,167	2,222,2
	TOTAL COSTS	> 4,749,528	5,367,000	1,761,334	11,877,8
PARED BY Permian Reso	ources Operating, LLC:				
Drilling Engineer	•				
Completions Engineer					
Production Engineer					
nian Resources Operating					
Co-CEC	WH	c	o-CEO	VP - Oper	rationsCRM
VP - Land & Lega	·	VP - Geos	ciences		Скм
	BG		50		
N OPERATING PARTNE	R APPROVAL:				
				7	Tax ID:
Company Name			Working Interest (%):		
Company Name				<del></del>	
			Date:		─────────────────────────────────────

Permian Resources Operating, LLC 300 N. Marlenfeld St., Ste. 1000 Midland, TX 79701 Phone (432) 695-4222 • Fax (432) 695-4063

DATE:		E OF COSTS AND AUTHO			
	2.17.2023			AFE NO.:	1
WELL NAME:	Joker 5-8 Federal Com	201H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E			MD/TVD:	21,211' / 10,926'
				_	10,000
COUNTY/STATE:	Lea County, New Mex	ico		LATERAL LENGTH:	
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
		O wall and complete wi	th 44 stages AFF includ	es drilling, completions,	flowback and Initial
		(1 wen and complete wi	ui 41 suges. ru e meide	es dilling, completions,	
REMARKS:	AL install cost				
					TOTAL
		DRILLING	COMPLETION	PRODUCTION	COSTS
INTANGIBLE	COSTS	COSTS	COSTS	COSTS	
T Land / Legal / Regulatory		\$ 59,066	•	37,500	\$ 96,566
2 Location, Surveys & Dama	zes	288,079	18,067	2,500	308,647
4 Freight / Transportation		47,628	43,778	25,000	116,406
5 Kental - Surface Equipmen	t	124,327	215,417	105,000	444,744
6 Rental - Downhole Equips	ient	205,424	59,805		265,229
7 Rental - Living Quarters		48,083	54,480		102,562
10 Directional Drilling, Surv	eys	429,543			429,543
11 Orilling	-	753,820	-	<del></del>	753,820
12 Ortil Bits		100,176	-		100,176
13 Fuel & Power		188,935	725,061		913,996
14 Cementing & Float Equip		243,296			243,296
15 Completion Unit, Swab, G	TU.			15,000	15,000
16 Pertorating, Wireline, Sile	kline		393,136	-	393,136
17 High Pressure Pump True			123,274		123,274
18 Completion Unit, Swab, G		<del></del>	146,484		146,484
20 Mud Circulation System		105,209	<del></del>		105,209
21 Mud Logging		17,529	<del></del>		17,529
22 Logging / Formation Eval	ation	7,270	8,339	<del></del>	15,609
23 Mud & Chemicals		361,835	438,185	10,000	810,020
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation			814,033		814,033
26 Stimulation Flowback &	Jisp	<del></del>	121,606	150,000	271,606
28 Mud/Wastewater Dispos		193,104	61,151		254,254
30 Rig Supervision / Engine		121,196	133,420	21,667	276,283
32 Drig & Completion Over		10,423	200/120		10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant		133,330	1,255,227	101,007	1,255,22/
95 Insurance		14,660	1,233,227	<del></del>	14,660
		14,000	24,421	3,833	28,254
97 Contingency		<u>-</u>	24,421	3,833	
99 Plugging & Abandonmer					
	TOTAL INTANGIBLES	i > 3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGERIA	oere.	COSTS	COSTS	COSTS	COSTS
TANGIBLE C	USIS				5 122,234
60 Surface Casing		5 122,234			
61 Intermediate Casing		344,284	<u>-</u> _		344,284
62 Drilling Liner			<u>:</u>		
63 Production Casing		687,039			687,039
64 Production Liner					
65 Tubing		•		140,000	140,000
66 Wellhead		64,820	-	40,000	104,820
67 Packers, Liner Hangers		14,732		20,000	34,732
68 Tanks			-	45,833	45,833
69 Production Vessels			-	126,667	126,667
70 Flow Lines		<del></del>	<del></del>	66,667	66,667
71 Rod string			<del></del>	<del></del>	
72 Artificial Lift Equipment		<del></del>		90,000	90,000
73 Compressor			<del></del>	5,833	5,833
74 Installation Costs		<del></del>	<del></del>	<del></del>	
75 Surface Pumps		<del></del>	<del></del>	61,667	61,667
76 Downhole Pumps		<del></del>	<del></del>		<del></del>
77 Measurement & Meter In	tallation		<del></del>	116,667	116,667
78 Gas Conditioning / Dehy		<del></del>	<del></del>		
79 Interconnecting Facility P			<del></del>	20,000	20,000
80 Gathering / Bulk Lines		<del></del>	<del></del>		
81 Valves, Dumps, Controlle	rs	<del></del>	<del></del>	108,333	108,333
52 Tank / Facility Containme		<del></del>	<del></del>	43,333	43,333
83 Flare Stack		<del></del>		16,667	15,65/
84 Electrical / Grounding			<del></del>	50,000	50,000
85 Communications / SCAD		<del></del>	<del></del>	36,667	36,667
86 Instrumentation / Salety	-	<del></del>	<del></del>	833	833
mountainen, outely	TOTAL TANGIBLES	· · · · · · · · · · · · · · · · · · ·			
			0	989,167	2,222,276
		- A MAD EDD	5,367,000		11,877,862
	TOTAL COSTS	i> 4,749,528	5,547,606	1,761,334	
REPARED BY Permian Res	TOTAL COSTS	4,747,340	Sparjour	1,761,334	
	TOTAL COSTS	4,747,340	0,501,000	1,761,334	
REPARED BY Permian Res	TOTAL COSTS	2 4,147,346	9,541,000	1,761,334	
Drilling Enginee	TOTAL COSTS  purces Operating, LLC:  PS	2 4,147,346	9,541,000	1,761,334	
Drilling Enginee	TOTAL COSTS  ources Operating, LLC:  PS  ML	1,197,340	open pool	1,761,334	
Drilling Enginee	TOTAL COSTS  ources Operating, LLC:  PS  ML	1,147,740	opar pool	1,761,334	
Drilling Enginee Completions Enginee Production Enginee	TOTAL COSTS  Durces Operating, LLC:  PS  ML  DC	1/47,540	Open Nove	1,761,334	
Drilling Enginee Completions Enginee Production Enginee	TOTAL COSTS  Durces Operating, LLC:  PS  ML  DC	1/47,540	Spot Note	1.761,334	
Drilling Enginee Completions Enginee Production Enginee	TOTAL COSTS  DUTCES Operating, LLC:  S				
Drilling Enginee Completions Enginee Production Enginee	TOTAL COSTS  DUTCES Operating, LLC:  PS  ML  CC  LLC APPROVAL:	7,747,540 Co-C	CEO	1.761,334	ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	TOTAL COSTS  DUTCES Operating, LLC:  PS  ML  CC  LLC APPROVAL:				
Drilling Enginee Completions Enginee Production Enginee	TOTAL COSTS  DUTCES Operating, LLC:  FS  ML  CC  LLC APPROVAL:  MH		JW JW		ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	TOTAL COSTS  DUTCES Operating, LLC:  PS  ML  CC  LLC APPROVAL:	Co-C	JW JW		ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	TOTAL COSTS  DUTCES Operating, LLC:  FS  ML  CC  LLC APPROVAL:  MH	Co-C	EO JW		ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	TOTAL COSTS  DUTCES Operating, LLC:  FS  ML  CC  LLC APPROVAL:  MH	Co-C	EO JW		ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	TOTAL COSTS  DUTCES Operating, LLC:  FS  ML  CC  LLC APPROVAL:  MH	Co-C	EO JW		ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin Co-CEC	TOTAL COSTS  DUTCES OPERATING, LLC:  PS  ML  CC  LLC APPROVAL:  MH  BC	Co-C	EO JW		ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	TOTAL COSTS  DUTCES OPERATING, LLC:  PS  ML  CC  LLC APPROVAL:  MH  BC	Co-C	EO JW		ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin Co-CEC VP- Land & Lego ON OPERATING PARTNE	TOTAL COSTS  DUTCES Operating, LLC:  FS: ML: DC: LLC APPROVAL:  WH  R APPROVAL:	Co-C	CEOjw	VP - Oper	ationsCRM
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin Co-CEC	TOTAL COSTS  DUTCES Operating, LLC:  FS: ML: DC: LLC APPROVAL:  WH  R APPROVAL:	Co-C	EO JW	VP - Oper	ations
Drilling Enginee Completions Enginee Production Enginee Production Enginee rmian Resources Operatin, Co-CEC VP-Land & Lega DN OPERATING PARTNE	TOTAL COSTS  DUTCES OPERATING, LLC:  FS  ML  CC  LLC APPROVAL:  R APPROVAL:	Co-C	JW  JW  SO  Working Interest (%):	VP - Oper	ationsCRM
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin Co-CEC VP- Land & Lego ON OPERATING PARTNE	TOTAL COSTS  DUTCES OPERATING, LLC:  FS  ML  CC  LLC APPROVAL:  R APPROVAL:	Co-C	CEOjw	VP - Oper	ationsCRM
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin, Co-CE( VP-Land & Lega DN OPERATING PARTNE Company Name Signed by	TOTAL COSTS  DUITCES OPERATING, LLC:  FS  ML  CC  LLC APPROVAL:  BC  R APPROVAL:	Co-C	Date:	VP - Oper	ations
Drilling Enginee Completions Enginee Production Enginee Production Enginee rmian Resources Operatin, Co-CEC VP-Land & Lega DN OPERATING PARTNE	TOTAL COSTS  DUITCES OPERATING, LLC:  FS  ML  CC  LLC APPROVAL:  BC  R APPROVAL:	Co-C	JW  JW  SO  Working Interest (%):	VP - Oper	ationsCRM

Permian Resources Operating, LLC
300 N. Marlenfeld St., Sis. 1000 Midland, TX 79701
Phone (432) 695-4222 • Fax (432) 695-4063
ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

DATE;	2.17.2023			AFE NO.:	1
WELL NAME:	Joker 5-8 Federal Com 2	202H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E			MD/TVD:	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexi-	co		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
	WCXY			COMPLETION DAYS:	19
GEOLOGIC TARGET:		<u> </u>	NI AA A AFFECT I I		
		Y well and complete v	vith 44 stages. AFE include	s drilling, completions, i	lowback and Initial
REMARKS:	AL install cost				
		DRULING	COMPLETION	PRODUCTION	TOTAL
		DRILLING COSTS	COMPLETION COSTS	COSTS	COSTS
INTANGIBLE (	OSTS				
T Land/ Legal / Regulatory		\$ 59,066	18,067	37,500	\$ 96,566 308,647
2 Location, Surveys & Damag	es	288,079 47,628	43,778	25,000	116,406
4 Preight/Transportation 5 Rental - Surface Equipment		124,327	215,417	105,000	444,744
6 Kental - Downhote Equipm		205,424	59,805	100,000	265,229
7 Kental - Living Quarters		48,083	54,480	<del></del>	102,562
10 Directional Drilling, Surve	V5	429,543	<del></del>		429,543
11 Drilling	•	753,820	<del></del>	<del></del>	753,820
12 Drill Bits		100,176	<del></del>		100,176
13 Fuel & Power		188,935	725,061		913,996
14 Cementing & Float Equip		243,296			243,296
15 Completion Unit, Swab, C				15,000	15,000
16 Pertorating, Wireline, Slici			393,136		393,136
17 High Pressure Pump Truci	<u>.</u>		123,274		123,274
18 Completion Unit, Swab, C	I U	105,209	146,484		146,484
20 Mud Circulation System 21 Mud Logging		17,529	<u>-</u>		17,529
22 Logging / Formation Evalu	ation	7,270	8,339		15,609
23 Mud & Chemicals	84VII	361,835	438,185	10,000	810,020
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation			814,033		814,033
26 Stimulation Flowback & L	isp	<del></del>	121,606	150,000	2/1,606
28 Mud / Wastewater Disposa		193,104	61,151	<del></del>	254,254
30 Rig Supervision / Engineer	ring	121,196	133,420	21,667	2/6,283
32 Drig & Completion Overh	ead	10,423	<del></del>		10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant			1,255,227	•	1,255,227
95 Insurance		14,660		-	14,660
97 Contingency			24,421	3,833	28,254
99 Plugging & Abandonment			<u>-</u>		
	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE CO	OSTS	COSTS	COSTS	COSTS	COSTS
60 Surface Casing	JU13	5 122,234		<del></del>	5 122,234
61 Intermediate Casing		344,284		<del></del>	344,284
62 Drilling Liner					
63 Production Casing		687,039	<del></del>	<del></del>	687,039
64 Production Liner		<del></del>	<del></del>		•
65 Tubing		-	<del></del>	140,000	140,000
66 Weilhead		64,820	<del></del>	40,000	104,820
67 Packers, Liner Hangers		14,/32	<del></del>	20,000	34,732
68 Tanks				45,833	45,833
69 Production Vessels			-	126,667	126,667
70 Flow Lines			<del>-</del>	66,667	66,667
71 Rod string		<del></del>	<del>-</del> _	90,000	90,000
72 Artificial Lift Equipment 73 Compressor				5,833	5,833
74 Installation Costs					
75 Surtace Pumps		<del></del>	<del></del>	61,667	61,667
76 Downhole Pumps			<del></del>		
77 Measurement & Meter Ins	allation	<del></del>	<del></del>	116,667	116,667
78 Gas Conditioning / Dehyd		<del></del>	<del></del>		<del></del>
79 Interconnecting Facility Pi			<del></del>	20,600	20,000
80 Gathering / Bulk Lines	· -	<del></del>	<del></del>		-
81 Valves, Dumps, Controller			•	108,333	108,333
82 Tank / Facility Containmen	nt		•	43,333	43,333
83 Flare Stack			-	16,667	16,667
84 Electrical / Grounding				50,000	50,000
85 Communications / SCADA	•		<u> </u>	36,667	36,667
86 Instrumentation / Satety			<del>-</del>	833	833
	TOTAL TANGIBLES			989,167	2,222,276
	TOTAL COSTS	> 4,749,528	5,367,000	1,761,334	11,877,862
EDARED BY D					
EPARED BY Permian Reso	urces Operating, LLC:				
Drilling Engineer:	PS PS				
Drilling Engineer: Completions Engineer:	PS ML				
Drilling Engineer	PS ML				
Drilling Engineers Completions Engineers Production Engineers	PS ML DC				
Drilling Engineer: Completions Engineer:	PS ML DC			<u> </u>	
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operating	PS ML DC LLC APPROVAL:				
Drilling Engineers Completions Engineers Production Engineers	PS ML DC	Co	-CEO	VP - Opera	
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operating Co-CEO	PS ML DC , LLC APPROVAL:		- Jw	VP - Opera	ettionsCRM
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operating	PS ML DC , LLC APPROVAL:	. Co VP - Geosci	jw	VP - Opera	
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operating Co-CEO	PS ML DC , LLC APPROVAL:		- Jw	VP - Opera	
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operating Co-CEO	PS ML DC , LLC APPROVAL:		jw	VP - Opera	
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operating Co-CEO	PS ML DC , LLC APPROVAL:		jw	VP - Opera	
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operating Co-CEO	PS ML DC , LLC APPROVAL:		jw	VP - Opera	
Drilling Engineer. Completions Engineer. Production Engineer. rrutan Resources Operating Co-CEO VP - Land & Legal	PS ML DC ,LLC APPROVAL:		jw	VP - Opera	
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Drilling Engineer Completions Engineer Production Engineer rrutan Resources Operating Co-CEO VP - Land & Legal	PS ML DC . LLC APPROVAL: WH BC		jw		
Drilling Engineer. Completions Engineer. Production Engineer. rentan Resources Operating Co-CEO VP - Land & Legal ON OPERATING PARTNE	PS ML DC , LLC APPROVAL: WH  BC  R APPROVAL:		50 Warking Interest (%):		CRM
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operating Co-CEO VP - Land & Legal	PS ML DC , LLC APPROVAL: WH  BC  R APPROVAL:		jw ences SO		CRM
Drilling Engineer. Completions Engineer. Production Engineer. rentan Resources Operating Co-CEO VP - Land & Legal ON OPERATING PARTNE	PS ML DC , LLC APPROVAL: WH BG  R APPROVAL:		50 Warking Interest (%):		CRM

Permian Resources Operating, LLC 300 N. Martenfeld St., Ste. 1000 Midland, TX 79701 Phone (432) 695-4022 · Fax (432) 695-4063

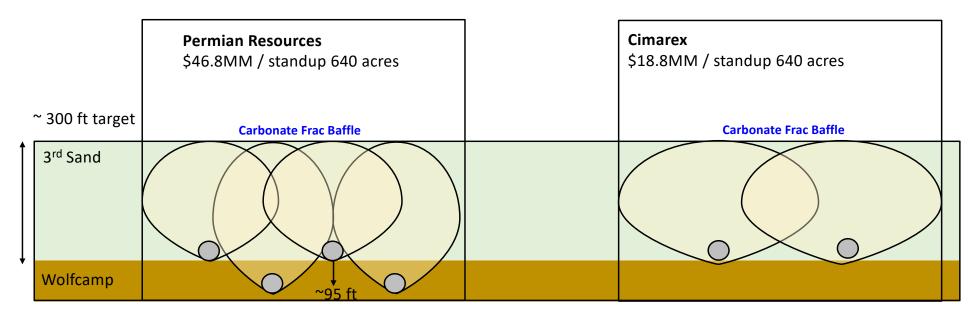
DATE:	2.17.2023			AFE NO.:	. 1
WELL NAME:	Joker 5-8 Federal Com 2	03H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E			MD/TVD:	21,191' / 10,906'
COUNTY/STATE:	Lea County, New Mexic	20		LATERAL LENGTH:	10,000'
Permian WI:	Dan County/Them Interne			DRILLING DAYS:	19.6
					19
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	
		r well and complete wi	ith 44 stages. AFE includes	drilling, completions, f	lowback and Initial
REMARKS:	AL install cost				
		DRILLING	COMPLETION	PRODUCTION	TOTAL
		COSTS	COSTS	COSTS	COSTS
INTANGIBLE (	:0515			37,500	\$ 96,58
Land/Legal/Regulatory	•	59,066			308,64
Location, Surveys & Damag	es	288,079	18,067	2,500	
Freight/Transportation		47,628	43,778	25,000	116,40
Rental - Surface Equipment		124,327	215,417	105,000	444,74
Rental - Downhole Equipm	ent	205,424	59,805	•	265,2
Kental - Living Quarters		48,083	54,480		102,56
Directional Drilling, Surve	ys	429,543			429,5
1 Drilling		753,820			753,82
2 Drui Bits		100,176		-	100,17
3 Fuel & Power		188,935	725,061		913,99
4 Cementing & Float Equip		243,296			243,29
5 Completion Unit, Swab, C			- "	15,000	15,00
6 Periorating, Wireline, Silci	dine		393,136		393,13
7 High Pressure Pump Truci			123,274	<del></del>	123,2
Completion Unit, Swab, C	เบ		146,484	-	146,48
Mud Circulation System		105,209		<del></del>	105,20
I Mud Logging		17,529	<del></del>	<del></del>	17,52
2 Logging/Formation Evalu	ation	7,270	8,339		15,60
Mud & Chemicals		361,835	438,185	10,000	810,02
Water		43,459	661,625	300,000	1,005,00
5 Stimulation			814,033		814,0.
Stimulation Flowback & D	lsp	<del></del>	121,606	150,000	271,6
Mud/Wastewater Disposa		193,104	61,151		254,2
0 Kig Supervision / Engineer		121,196	133,420	21,667	2/6,2
2 Drig & Completion Overh		10,423	130/120	21,007	10,4
5 Labor	iau	153,358	69,489	101,667	324,5
		133,336		101,007	1,255,2
4 Proppant			1,255,227		
5 Insurance 7 Contingency		14,660	<del></del>		14,60
		·	24,421	3,833	28,25
9 Plugging & Abandonment			<u>-</u>		
	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,5
·		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE CO	осте	COSTS	COSTS	COSTS	COSTS
J Surface Casing	7513				S 122.2:
		122,234	<u>-</u>		•
I Intermediate Casing		344,284		<u>-</u> _	344,25
2 Drilling Liner		<u>_</u>		-	
3 Production Casing		687,039			687,03
4 Production Liner			•		•
5 Tubing				140,000	140,00
6 Wellhead		64,820	<del></del>	40,000	104,82
7 Packers, Liner Hangers		14,732	<del></del>	20,000	34,73
8 Tanks		-	<del></del>	45,833	45,83
9 Production Vessels			-	126,667	126,66
U Flow Lines				66,667	66,66
1 Kod string		<del></del>			<del></del>
2 Artiticial Litt Equipment				90,000	90,00
3 Compressor			<del></del>	5,833	5,83
Installation Costs		<del></del>	<del></del>	<del></del>	
5 Surtace Pumps		<del></del>	<del></del>	61,667	61,66
6 Downhole Pumps			<del></del>		
7 Measurement & Meter Inst	allation	<del></del>	<del></del>	116,667	116,66
Gas Conditioning / Dehyd				110,007	110,00
Interconnecting Facility Pi				20,000	20,00
Gathering / Bulk Lines				20,000	20,00
Valves, Dumps, Controller			<u>-</u> _		- 1007-2
		<u>-</u>	<u>-</u> _	108,333	108,33
2 Tank / Facility Containmer	it		<u> </u>	43,333	43,3:
3 Flare Stack				16,667	16,66
Electrical / Grounding				50,000	50,00
Communications/SCADA				36,667	36,66
6 Instrumentation / Safety				833	83
	TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,2
	TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,8
				aj- wappy-1	411,00
ARED BY Permian Reso	arces Operating, LLC:				
ARED BY Permian Reso					
Drilling Engineer:	PS PS				
Drilling Engineer: Completions Engineer:	PS ML				
Drilling Engineer:	75				
Drilling Engineer: Completions Engineer: Production Engineer:	PS ML DC				
Drilling Engineer: Completions Engineer: Production Engineer:	PS ML DC		<u></u>		
Drilling Engineer: Completions Engineer: Production Engineer: an Resources Operating.	PS ML DC				
Drilling Engineer: Completions Engineer: Production Engineer:	PS ML DC LLC APPROVAL:	Co-C		VP - Opera	tions
Drilling Engineer: Completions Engineer: Production Engineer: an Resources Operating.	PS ML DC	Co-C	ZEO	VP - Operal	tions
Drilling Engineer: Completions Engineer: Production Engineer: an Resources Operating: Co-CEO	PS ML DC LLC APPROVAL:		Jw	VP - Operat	
Drilling Engineer: Completions Engineer: Production Engineer: an Resources Operating.	PS ML DC LLC APPROVAL:	Co-C VP - Geoscier	jw nces	VP - Operal	
Drilling Engineer. Completions Engineer. Production Engineer. Ian Resources Operating. Co-CEO	PS ML DC LLC APPROVAL:		Jw	VP - Operat	
Drilling Engineer. Completions Engineer. Production Engineer. Ian Resources Operating. Co-CEO	PS ML DC LLC APPROVAL:		jw nces	VP - Operat	
Drilling Engineer. Completions Engineer. Production Engineer. Ian Resources Operating. Co-CEO	PS ML DC LLC APPROVAL:		jw nces	VP - Operat	
Driling Engineer. Completions Engineer. Production Engineer. Ian Resources Operating. Co-CEO  VP- Land & Legal	PS ML DC  LLC APPROVAL:  WH  BG		jw nces	VP - Operal	
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Drilling Engineer. Completions Engineer. Production Engineer. Ian Resources Operating. Co-CEO	PS ML DC  LLC APPROVAL:  WH  BG		jw nces		
Drilling Engineer. Completions Engineer. Production Engineer. Ian Resources Operating. Co-CEO VP-Land & Legal OPERATING PARTNEE Company Name:	PS ML DC  LLC APPROVAL:  WH  BG		SO  Working Interest (%):		CRM
Driling Engineer. Completions Engineer. Production Engineer. Ian Resources Operating. Co-CEO VP-Land & Legal OPERATING PARTNEE	PS ML DC  LLC APPROVAL:  WH  BG		so so		CRM
Drilling Engineer. Completions Engineer. Production Engineer. Ian Resources Operating. Co-CEO VP-Land & Legal OPERATING PARTNEE Company Name:	PS ML DC  LLC APPROVAL:  WH  BG		SO  Working Interest (%):	Ta)	CRM

Permian Resources Operating, LLC
300 N. Mazienfeld St., Ste. 1000 Midland, TX 79701
Phone (832) 895-4222 • Fax (832) 695-4063
ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

DATE:	2 17 2022			AFFERD	1
	2.17.2023	104L		AFE NO.:	
WELL NAME:	Joker 5-8 Federal Com 2	UALI		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E			MD/TVD:_	21,181' / 10,896'
COUNTY/STATE:	Lea County, New Mexic	.0		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
	Drill a horizontal WCX	well and complete wi	th 44 stages. AFE include	s drilling, completions,	flowback and Initial
REMARKS:	AL install cost	•			
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE	COSTS	COSTS	COSTS	COSTS	COSTS
1 Land/Legal/Regulatory		5 59,066	<del></del>	37,500	\$ 96,566
2 Location, Surveys & Dama	ges	288,079	18,067	2,500	308,647
4 Freight/Transportation		47,628	43,778	25,000	116,406
5 Kental - Suriace Equipmen		124,327	215,417	105,000	444,744
6 Rental - Downhole Equips	ent	205,424	59,805		265,229
7 Kental - Living Quariers		48,083	54,480		102,562
10 Directional Drilling, Surv	rys	429,543			429,543
11 Drilling		753,820	<u> </u>		753,820
12 Drill Bils 13 Fuel & Power		100,176	725,061		100,176
14 Cementing & Float Equip		243,296	723,001		243,296
15 Completion Unit, Swab, C	111			15,000	15,000
16 Perforating, Wireline, Sile		<del> </del>	393,136		393,136
17 High Pressure Pump Truc			123,274		123,2/4
18 Completion Unit, Swab, C		<del></del>	146,484		146,484
20 Mud Circulation System		105,209	<del></del>	<del></del>	105,209
21 Mud Logging		17,529	<del></del>	<del></del>	17,529
22 Logging / Formation Eval	ation	7,2/0	8,339		15,609
23 Mud & Chemicals		361,835	438,185	10,000	810,020
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation		<del></del>	814,033	-	814,033
26 Stimulation Flowback & I		<del></del>	121,606	150,000	271,606
28 Mud / Wastewater Dispos		193,104	61,151		254,254
30 Rig Supervision / Enginee		121,196	133,420	21,667	276,283
32 Drig & Completion Overl	ead	10,423	<del></del>	•	10,423
35 Labor		153,358	69,489	101,667	324,514
54 Proppant			1,255,227		1,255,227
95 Insurance		14,660			14,660
97 Contingency			24,421	3,833	28,254
99 Plugging & Abandonmen					
	TOTAL INTANGIBLES:	> 3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE C	OSTS	COSTS	COSTS	COSTS	COSTS
60 Surface Casing	0510	122,234	· · · · · · · · · · · · · · · · · · ·		5 122,234
61 Intermediate Casing		344,284	<del></del>	<del></del>	344,284
62 Drilling Liner			<del></del>	<del></del>	
63 Production Casing		687,039		<del></del>	687,039
64 Production Liner					
65 Tubing			<del></del>	140,000	140,000
66 Wellhead		64,820	<del></del>	40,000	104,820
67 Packers, Liner Hangers		14,732	<del></del>	20,000	34,732
68 Tanks		<del></del>		45,833	45,833
69 Production Vessels		<del></del>	<del></del>	126,667	126,667
70 Flow Lines				66,667	66,667
71 Rod string					
72 Artiticial Lift Equipment				90,000	90,000
73 Compressor				5,833	5,833
74 Installation Costs			<del></del>	•	-
75 Surtace Pumps				61,667	61,667
76 Downhole Pumps		•	<del></del>	-	•
77 Measurement & Meter Inc			<del></del>	116,667	116,667
78 Gas Conditioning / Dehy		-	<del></del>	•	
79 Interconnecting Facility P	ptng			20,000	20,000
80 Gathering / Bulk Lines					
81 Valves, Dumps, Controlle			-	108,333	108,333
82 Tank / Facility Containme	nı		•	43,333	43,333
83 Flare Stack			<u>-</u>	16,667	16,667
84 Electrical / Grounding 85 Communications / SCAD			<del></del>	35,567	36,667
86 Instrumentation / Safety	•	<del></del>	<del></del>	30,867	833
ve accumentation / safety	TOTAL TANGIBLES:	1,233,109	<del></del>		2,222,276
			5 367 000	989,167	
	TOTAL COSTS:	<b>4,749</b> ,528	5,367,000	1,761,334	11,877,862
	urros Onoratina IIC:				
EPARED BY Permian Pos	Operating, ELC:	-			
EPARED BY Permian Res					
EPARED BY Permian Res	: PS				
Drilling Engineer					
Drilling Engineer	: ML				
Drilling Engineer	: ML				
Drilling Engineer Completions Engineer Production Engineer	: ML : DC · = -				
Drilling Engineer Completions Engineer Production Engineer	: ML : DC · = -				
Drilling Engineer Completions Engineer Production Engineer rndan Resources Operating	ML DC -				
Drilling Engineer Completions Engineer Production Engineer	: ML : DC	Co-C		VP - Oper	
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	LLC APPROVAL:		Jw	VP - Oper	ations
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	LLC APPROVAL:	Co-C VP - Geoscier	JW	VP - Oper	
Drilling Engineer Completions Engineer Production Engineer rndan Resources Operating	LLC APPROVAL:		Jw	VP - Oper	
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	LLC APPROVAL:		JW	VP - Oper	
Drilling Enginee Completions Enginee Production Enginee rmian Resources Operatin	LLC APPROVAL:		JW	VP - Oper	
Drilling Engineer Completions Engineer Production Engineer rmian Resources Operatin	LLC APPROVAL:		JW	VP - Oper	
Drilling Enginee Completions Enginee Production Enginee Production Enginee rmian Resources Operatin Co-CEC VP - Land & Lega	, LLC APPROVAL:		JW	VP - Oper	
Drilling Enginee Completions Enginee Production Enginee Production Enginee rmian Resources Operatin Co-CEC VP - Land & Lega	, LLC APPROVAL:		JW	VP-Oper	
Drilling Engineer Completions Engineer Production Engineer Production Engineer Co-CEC VP - Land & Legs ON OPERATING PARTNE	WH I BG		JW SO		CRM
Drilling Enginee Completions Enginee Production Enginee Production Enginee rmian Resources Operatin; Co-CEC	WH I BG		JW		
Drilling Engineer Completions Engineer Production Engineer Production Engineer Co-CEC VP - Land & Lega ON OPERATING PARTNE	LLC APPROVAL:  WH  RG  R APPROVAL:		SO  Working Interest (%):		CRM
Drilling Enginee Completions Enginee Production Enginee Production Enginee rmian Resources Operatin Co-CEC VP - Land & Lega DN OPERATING PARTNE	LLC APPROVAL:  WH  RG  R APPROVAL:		JW SO		CRM
Drilling Engineer Completions Engineer Production Engineer Production Engineer Co-CEC VP - Land & Lega ON OPERATING PARTNE	LLC APPROVAL:  WH  BG  R APPROVAL:		SO  Working Interest (%):		CRM

## O

## Diagram of Staggered Landing Wolfcamp + 3<sup>rd</sup> SS vs. 3<sup>rd</sup> SS Flat



- Cimarex has experience developing as many as 8 landings within a DSU successfully in Lea county with 9<sup>th</sup> drilling now, 35 to 38 wells / section. The difference is the combination of geology (barriers, reservoir height, and flow units) don't support the proposed staggers at Mighty Pheasant Loosey Goosey as demonstrated by area developments like Black and Tan.
- 3<sup>rd</sup> and Wolfcamp landed this close together are equivalent to 8 WPS flat in the 3<sup>rd</sup> Sand, double the AOI proven density.
- A wealth of data from the DOE and industry funded Hydraulic Fracture Test Site 2 supports an upper Wolfcamp buffer zone in this specific location to protect proven 3<sup>rd</sup> Sand correlative rights and prevent capital waste.



## O

## Proposed Wolfcamp Depth Severance to Minimize Interaction with 3<sup>rd</sup> Bone Spring Sand

