

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

**APPLICATIONS OF CIMAREX ENERGY CO.
FOR A HORIZONTAL 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 WOLFECAMP 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 3rd 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 3rd 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 3rd 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 3rd Bone Spring Sand and the Upper Wolfcamp, Cimarex has concluded that if Upper Wolfcamp wells were to be completed while drilling and developing the 3rd 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 3rd 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 3rd 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 its 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 3rd 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 3rd 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

¹ 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 3rd 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 3rd Bone Spring Sands, and not in the Upper Wolfcamp, in order preserve the Upper Wolfcamp from being drilled and thereby protect the 3rd Bone Spring Sand from drainage and damage.

II. Argument

A. The optimal development of the Subject Lands is to drill wells in the 3rd 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 3rd 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 3rd 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 3rd 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.

11. Cimarex recognizes that filing its competing applications for pooling the Upper Wolfcamp based on wells drilled in 3rd 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 3rd Bone Spring Sand and to protect correlative rights, would be to allow the drilling of the 3rd 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 3rd Bone Spring, thus protecting the correlative rights of the owners in the 3rd 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 3rd 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 Wolfcamp, 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
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and Permian Resources Operating, LLC

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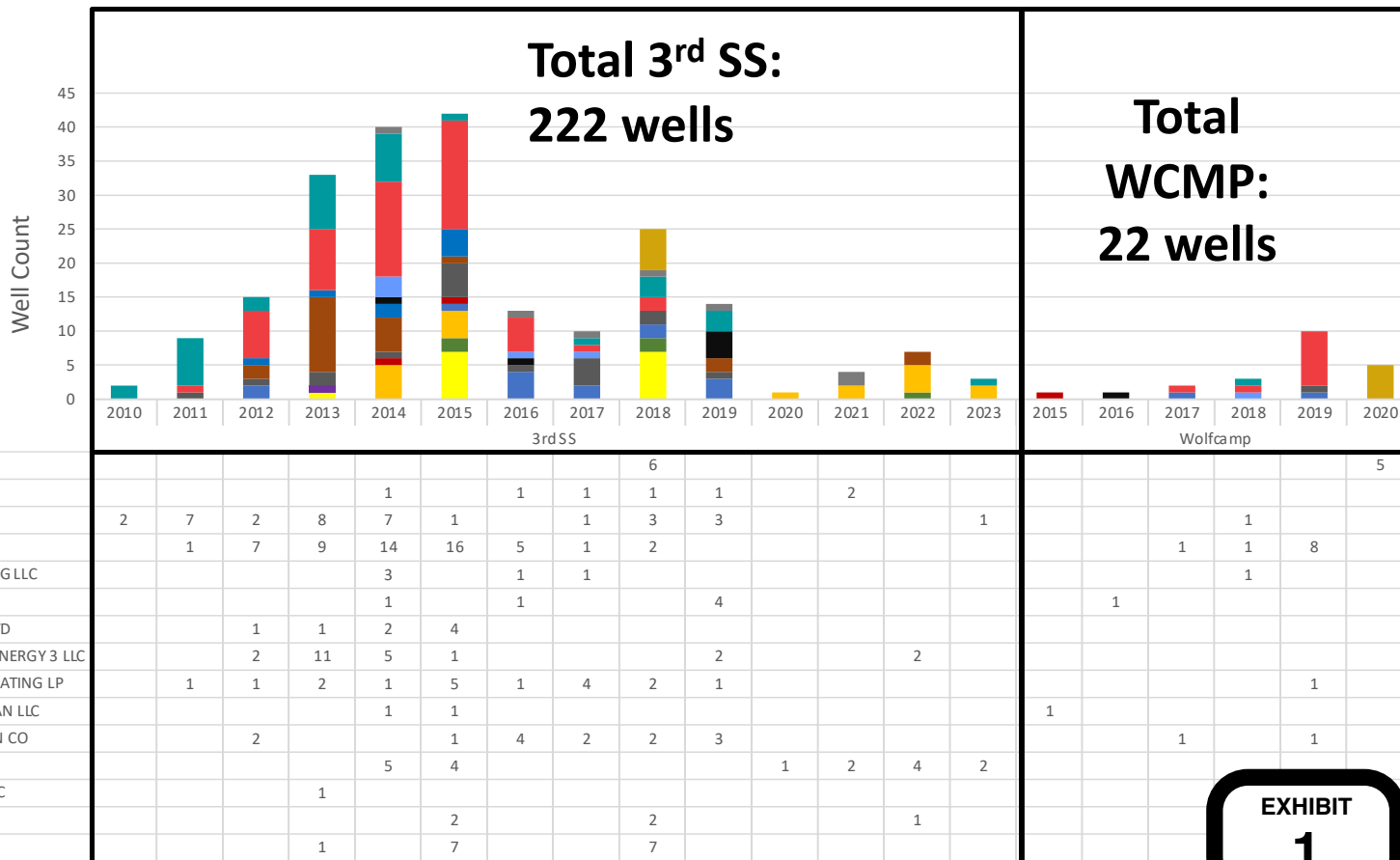
Attorneys for Sandstone Properties, LLC

/s/ Darin C. Savage

Darin C. Savage

Well Count by Landing and Operators Shows 3rd Sand is the Consensus Landing

- 3rd 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



EXHIBIT

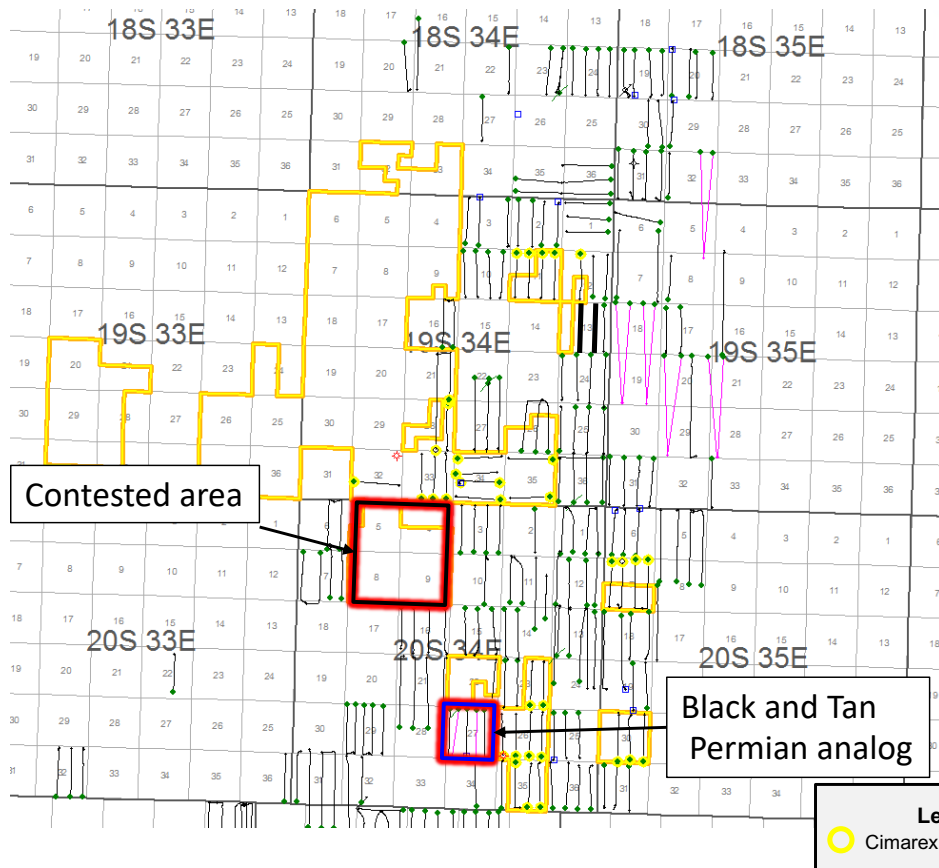
1



3rd 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

3rd Bone Spring Sand Producers



Wolfcamp Producers

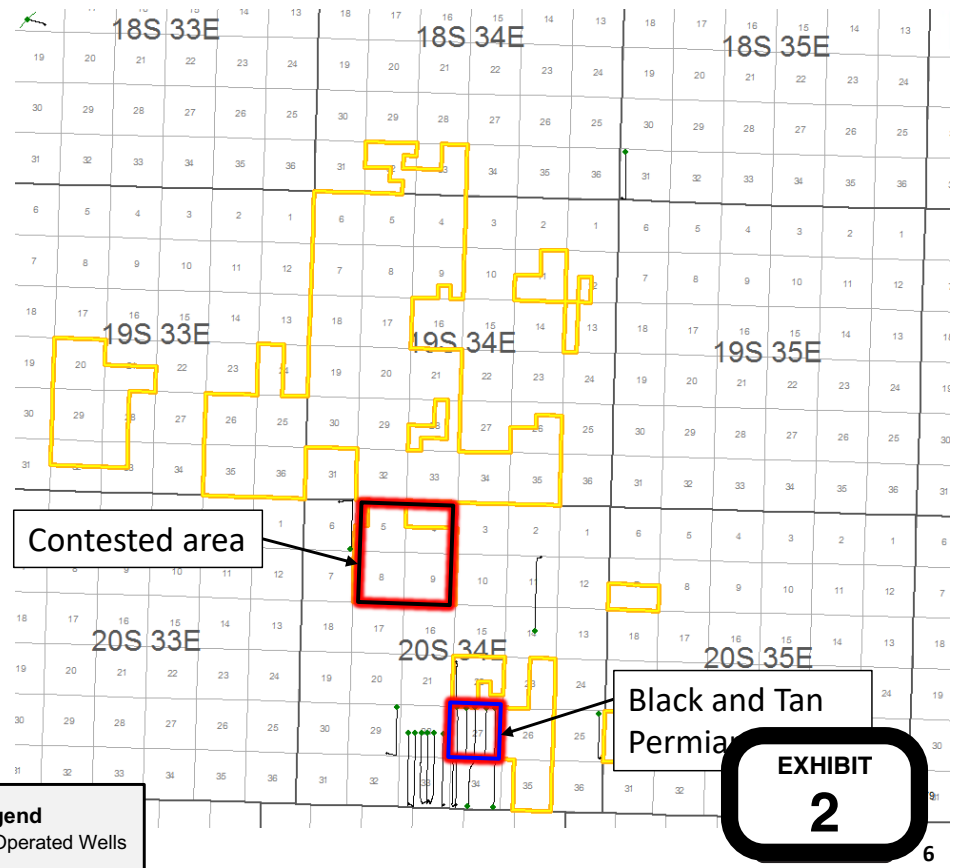


EXHIBIT
2

Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 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:	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 Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE COSTS				
1 Land / Legal / Regulatory	\$ 59,066	-	37,500	\$ 96,566
2 Location, Surveys & Damages	288,079	18,067	2,500	308,647
4 Freight / Transportation	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	59,805	-	265,229
7 Rental - Living Quarters	48,083	54,480	-	102,562
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drill 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, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Silckline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	8,339	-	15,609
23 Mud & Chemicals	36,135	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 & Disp	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,151	-	254,254
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drig. & Completion Overhead	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	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585
TANGIBLE COSTS				
60 Surface Casing	\$ 122,234	-	-	\$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
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	-	-	66,667	66,667
71 Rod string	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer: RS
Completions Engineer: ML
Production Engineer: DC

Permian Resources Operating, LLC APPROVAL:

Co-CBO WH Co-CBO JW VP - Operations CRM
VP - Land & Legal BC VP - Geosciences SO

NON OPERATING PARTNER APPROVAL:

Company Name: Working Interest (%): Tax ID:
Signed by: Date:
Title: Approval: ☐ Yes ☐ No (mark one)

The costs on this AFE are estimates only and may not be considered as ceilings on any specific item or the total cost of the project. Taking installation approved under the AFE may be delayed up to a year after the well has been completed. In executing the AFE, the Participant agrees to pay its proportionate share of actual costs beyond the budget. Actual costs may include, but are not limited to, the costs of the well, completion, production, and other costs incurred by the Participant. The Participant shall be responsible for all costs incurred by the Participant in the well.

Permian Resources Operating, LLC

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ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE

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WELL NAME:	Bane 4-9 Federal Com 203H	FIELD:	Tonto, Wolfcamp
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COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

INTANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
1 Land / Legal / Regulatory	\$ 59,066	-	37,900	\$ 96,966
2 Location, Surveys & Damages	288,079	18,067	2,900	308,647
4 Freight / Transportation	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
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14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,200	8,339	-	15,539
23 Mud & Chemicals	36,1835	438,185	10,000	810,020
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32 Drilg. & Completion Overhead	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	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

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60 Surface Casing	\$ 122,234	-	-	\$ 122,234
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62 Drilling Liner	-	-	-	-
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
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71 Rod string	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
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PREPARED BY Permian Resources Operating, LLC:

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 Completions Engineer: ML
 Production Engineer: DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO: WH Co-CEO: JW VP - Operations: CRM
 VP - Land & Legal: BG VP - Geosciences: SO

NON OPERATING PARTNER APPROVAL:

Company Name: Working Interest (%): Tax ID:
 Signed by: Date:
 Title: Approval: ☐ Yes ☐ No (mark one)

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Permian Resources Operating, LLC

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60 Surface Casing	\$ 122,234	-	-	\$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
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	-	-	66,667	66,667
71 Rod string	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves,umps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer: PS
Completions Engineer: ML
Production Engineer: DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO WH Co-CEO JW VP - Operations CRM
VP - Land & Legal BG VP - Geosciences SO

NON OPERATING PARTNER APPROVAL:

Company Name: Working Interest (%): Tax ID:
Signed by: Date:
Title: Approval: ☐ Yes ☐ No (mark one)

The costs on this AFE are minimum only and may not be covered as refunds on any specific item as the total cost of the project. Taking installation approved under the AFE may be delayed up to a year after the well has been completed. In executing the AFE, the Participant agrees to pay its proportionate share of actual costs incurred in further field activities including, but not limited to, the costs of the well. Participant shall be responsible for and hold immediately for Permian's well.

Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 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 201H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and initial AL install cost		

INTANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
1 Land / Legal / Regulatory	\$ 59,066	-	37,500	\$ 96,566
2 Location, Surveys & Damages	288,079	18,067	2,500	308,647
4 Freight / Transportation	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	39,805	-	245,229
7 Rental - Living Quarters	48,083	54,880	-	102,963
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	733,820	-	-	733,820
12 Drill Bits	180,176	-	-	180,176
13 Fuel & Power	188,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	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	-	814,033	-	814,033
26 Stimulation Flowback & Disp	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,751	-	254,854
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drig & Completion Overhead	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	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

TANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
60 Surface Casing	\$ 122,234	-	-	\$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
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	-	-	66,667	66,667
71 Rod string	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer: PS
 Completions Engineer: ML
 Production Engineer: DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO _____ Co-CEO _____ VP - Operations _____
 VP - Land & Legal _____ VP - Geosciences _____ CRM _____

NON OPERATING PARTNER APPROVAL:

Company Name: _____ Working Interest (%): _____ Tax ID: _____
 Signed by: _____ Date: _____
 Title: _____ Approvals: ☐ Yes ☐ No (mark one)

The costs on this AFE are estimates only and may not be considered as ceilings on any specific item or the total cost of the project. Taking installation approved under the AFE may be delayed up to a year after the well has been completed. In executing this AFE, the Participant agrees to pay its proportionate share of actual costs incurred, including legal, overhead, regulatory, insurance and well costs under the terms of the applicable joint operating agreement, regulatory order or other agreement covering this well. Participants shall be covered by and held proportionately for Operator's well control and general liability insurance unless participant provides Operator a certificate evidencing its own insurance to an extent acceptable to the Operator by the date of approval.

Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 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 202H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WL:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE COSTS				
1 Land/ Legal/ Regulatory	\$ 39,066	-	37,500	\$ 76,566
2 Location, Surveys & Damages	288,079	18,067	2,500	308,647
4 Freight/ Transportation	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	39,805	-	245,229
7 Rental - Living Quarters	48,083	34,480	-	82,563
10 Directional Drilling, Surveys	429,343	-	-	429,343
11 Drilling	753,820	-	-	753,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,335	725,061	-	913,396
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging/ Formation Evaluation	7,270	8,339	-	15,609
23 Mud & Chemicals	361,833	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 & Disp	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,151	-	254,254
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drig & Completion Overhead	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	-	24,421	5,833	29,854
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
TANGIBLE COSTS				
60 Surface Casing	\$ 122,234	-	-	\$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
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	-	-	66,667	66,667
71 Rod string	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning/ Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Hare Stack	-	-	16,667	16,667
84 Electrical/ Grounding	-	-	50,000	50,000
85 Communications/ SCADA	-	-	36,667	36,667
86 Instrumentation/ Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer: PS
 Completions Engineer: ML
 Production Engineer: DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO: WH Co-CEO: JW VP - Operations: CRM
 VP - Land & Legal: BG VP - Geosciences: SO

NON OPERATING PARTNER APPROVAL:

Company Name: _____ Working Interest (%): _____ Tax ID: _____
 Signed by: _____ Date: _____
 Title: _____ Approval: ☐ Yes ☐ No (mark one)

The costs on this AFE are estimates only and may not be considered as ceilings on any specific item on the total cost of the project. Tolling transactions approved under the AFE may be delayed up to a year after the well has been completed. In executing this AFE, the Participant agrees to pay an appropriate share of actual costs incurred, including legal, insurance, regulatory, brokerage and well costs under the terms of the applicable joint operating agreement, regulatory orders or other agreements covering this well. Participants shall be covered by and billed proportionately for the Operator's well control and general liability insurance unless participant provides Operator a certificate evidencing its own insurance to no extent acceptable to the Operator by the date of sign.

Permian Resources Operating, LLC

300 N. Marlenfeld St., Ste. 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 203H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,191' / 10,906'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian Well:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE COSTS				
1 Land / Legal / Regulatory	\$ 59,066	-	37,500	\$ 96,566
2 Location, Surveys & Damages	288,979	18,067	4,900	308,947
4 Freight / Transportation	47,628	43,778	25,000	115,406
5 Rental - Surface Equipment	124,322	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,423	99,805	-	305,229
7 Rental - Living Quarters	48,083	94,480	-	142,563
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drill 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, CUI	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CUI	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	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	-	814,033	-	814,033
26 Stimulation Flowback & Disp	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,151	-	254,254
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drig & Completion Overhead	10,423	-	-	10,423
35 Labor	153,358	69,489	101,667	324,514
54 Proppant	-	1,255,227	-	1,255,227
95 Insurance	14,680	-	-	14,680
97 Contingency	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
TANGIBLE COSTS				
60 Surface Casing	\$ 122,234	-	-	\$ 122,234
61 Intermediate Casing	344,284	-	-	344,284
62 Drilling Liner	-	-	-	-
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	-	-	66,667	66,667
71 Rod string	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862

PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer:	PS
Completions Engineer:	ML
Production Engineer:	DC

Permian Resources Operating, LLC APPROVAL:

Co-CEO	WH	Co-CEO	JW	VP - Operations	CRM
VP - Land & Legal	BC	VP - Geosciences	SO		

NON OPERATING PARTNER APPROVAL:

Company Name:	Working Interest (%):	Tax ID:
Signed by:	Date:	
Title:	Approval: ☐ Yes ☐ No (mark one)	

The costs on this AFE are estimates only and may not be considered as ceilings on any specific item or the total cost of the project. Taking limitations approved under the AFE may be delayed up to a year after the well has been completed. In executing this AFE, the Participant agrees to pay its proportionate share of actual costs incurred, including legal, creative, regulatory, engineering and well costs under the terms of the applicable joint operating agreement, regulatory order or other agreement covering this well. Participant shall be covered by and hold harmless the Operator's well control and general liability insurance unless participant provides Operator a certificate evidencing its own insurance to an amount acceptable to the Operator by the date of input.

Permian Resources Operating, LLC

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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 204H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,181' / 10,896'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian Wt:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE COSTS				
1 Land / Legal / Regulatory	\$ 39,066	-	37,500	\$ 96,566
2 Location, Surveys & Damages	288,079	18,067	2,900	308,647
4 Freight / Transportation	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	39,805	-	245,229
7 Rental - Living Quarters	48,083	54,480	-	102,562
10 Directional Drilling, Surveys	429,343	-	-	429,343
11 Drilling	753,230	-	-	753,230
12 Drilling Bits	100,176	-	-	100,176
13 Fuel & Power	186,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CIU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CIU	-	146,484	-	146,484
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24 Water	43,459	661,625	380,000	1,085,083
25 Stimulation	-	814,033	-	814,033
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35 Labor	133,358	69,889	101,667	304,914
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97 Contingency	-	24,421	5,833	29,254
99 Plugging & Abandonment	-	-	-	-
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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
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71 Rod string	-	-	-	-
72 Artificial Lift Equipment	-	-	90,000	90,000
73 Compressor	-	-	5,833	5,833
74 Installation Costs	-	-	-	-
75 Surface Pumps	-	-	61,667	61,667
76 Downhole Pumps	-	-	-	-
77 Measurement & Meter Installation	-	-	116,667	116,667
78 Gas Conditioning / Dehydration	-	-	-	-
79 Interconnecting Facility Piping	-	-	20,000	20,000
80 Gathering / Bulk Lines	-	-	-	-
81 Valves, Dumps, Controllers	-	-	108,333	108,333
82 Tank / Facility Containment	-	-	43,333	43,333
83 Flare stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
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TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,276
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PREPARED BY Permian Resources Operating, LLC:

Drilling Engineer:	PS
Completions Engineer:	ML
Production Engineer:	DC

Permian Resources Operating, LLC APPROVAL:

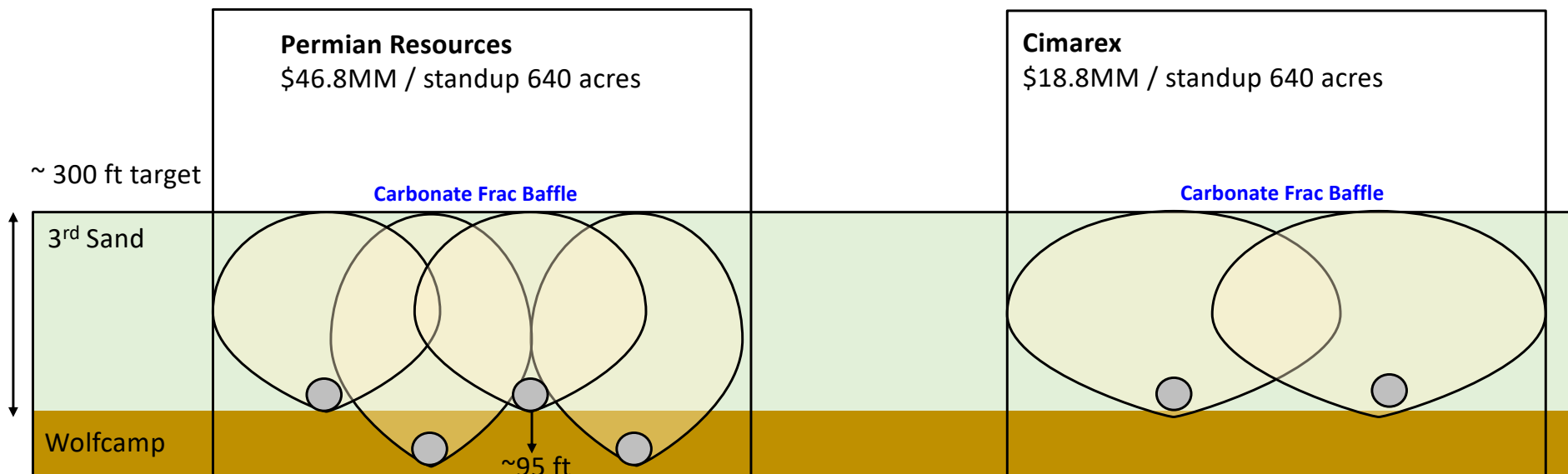
Co-CEO	WH	Co-CEO	JW	VP - Operations	CRM
VP - Land & Legal	BC	VP - Geosciences	SO		

NON OPERATING PARTNER APPROVAL:

Company Name:	Working Interest (%):	Tax ID:
Signed by:	Date:	
Title:	Approval: ☐ Yes ☐ No (mark one)	

The costs on this AFE are estimates only and may not be considered as ceilings on any specific item on the total cost of the project. Taking installation approved under the AFE may be delayed up to a year after the well has been completed. In executing this AFE, the Participant agrees to pay its proportionate share of actual costs incurred, including legal, royalties, regulatory, leasehold and well costs under the terms of the applicable joint operating agreement, regulatory orders or other agreement covering this well. Participant shall be covered by and held indemnified by the Operator's well control and general liability insurance unless participant provides Operator a certificate evidencing its own insurance to its mutual satisfaction to the Operator by the date of sign.

Diagram of Staggered Landing Wolfcamp + 3rd SS vs. 3rd SS Flat



- Cimarex has experience developing as many as 8 landings within a DSU successfully in Lea county with 9th 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.
- 3rd and Wolfcamp landed this close together are equivalent to 8 WPS flat in the 3rd 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 3rd Sand correlative rights and prevent capital waste.

Proposed Wolfcamp Depth Severance to Minimize Interaction with 3rd Bone Spring Sand

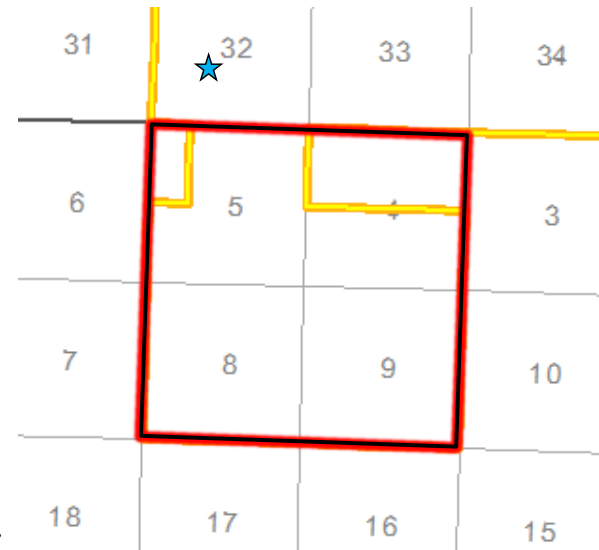
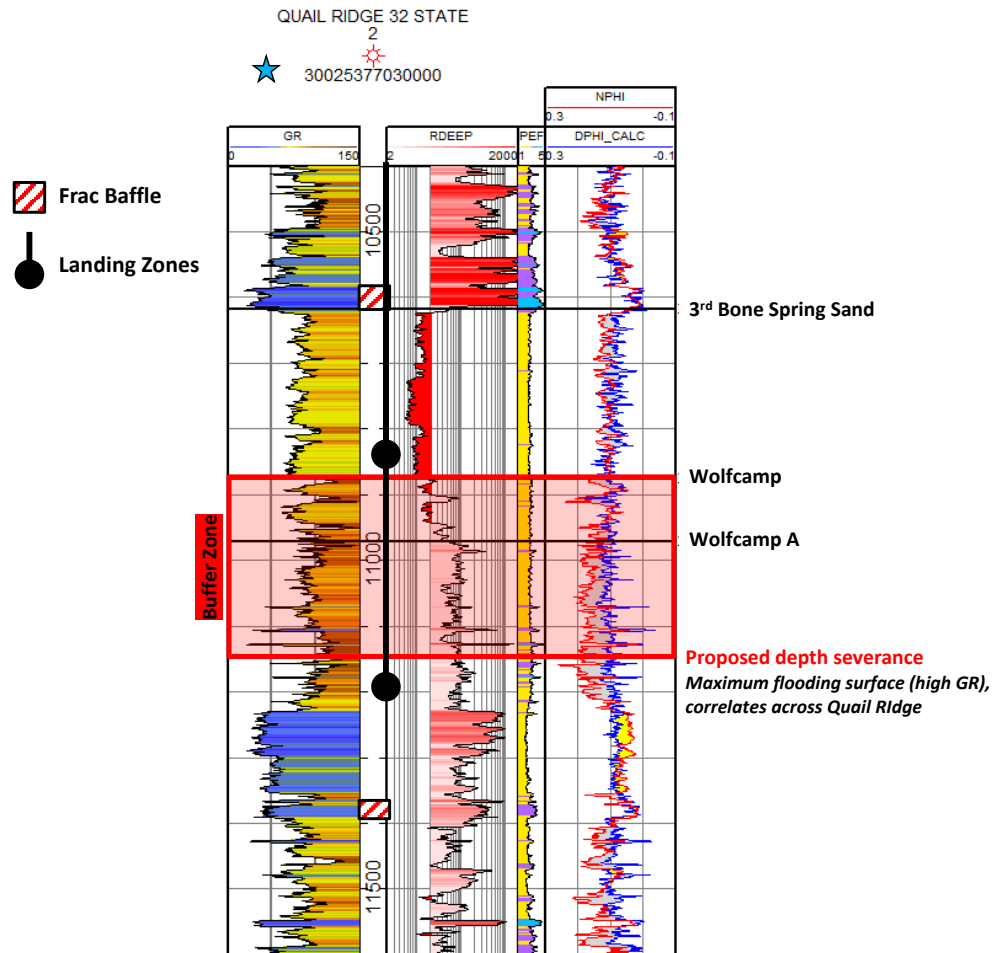


EXHIBIT
5