

**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

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

Cimarex Energy Co., (“Cimarex”), through its undersigned attorneys, considering the complex questions and issues of first impression raised in Cimarex’s Brief Providing Foundation for Evaluating A Single Reservoir Situated in the Third Bone Spring without Frac Baffles Between Formations, Under the Oil and Gas Act, NMSA 1978 §§ 70-2-1 et al. (“Brief”),” moves the New Mexico Oil Conservation Division (“Division”) to dismiss its prior “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,” submitted to the Division on July 18, 2022, (“Prior Motion”) in the above-referenced cases. At this point in the proceedings involving the above-referenced cases, Cimarex had requested and was granted leave to submit the Brief in order to provide the Division with background information regarding the novelty of the above-referenced

cases that Cimarex believes is essential for their evaluation in a contested hearing. In lieu of its Prior Motion, Cimarex requests that the Division consider and grant as its replacement this “Amended Motion for an Order to Prohibit the Drilling of Wells in the Upper Wolfcamp to Protect Correlative Rights and Optimize Production of the Subject Lands” (“Amended Motion”).

In support of its Amended Motion, Cimarex submits the following:

I. Factual and procedural background:

1. The facts and background are much the same as in the Prior Motion and are presented as follows with certain additions to account for any updates pursuant to Cimarex’s Brief.

2. Cimarex has been preparing to develop Sections 4, 5, 8 and 9, Township 20 South, Range 34 East, NMPM, Lea County, New Mexico (“Subject Lands”) since 2018. Based on its detailed analysis of the specific geology and reservoir characteristics of this area, Cimarex filed on March 9, 2023, 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. Cimarex in its Brief presented Option 1 for the compulsory pooling of the Bone Spring formation but not the Wolfcamp formation and presented Option 2 for the compulsory pooling of both the Bone Spring formation and the Wolfcamp formation. In accordance with Option 2, Cimarex filed applications in Case Nos. 23594 through 23601 for pooling the Wolfcamp formation. *See* Cimarex’s Brief at Section I. p. 10, for a full description of Option 1, and at Section II. p. 15, for a full description of Option 2.

3. 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 Bone Spring Sand but also that the Upper Wolfcamp reservoir under the Subject Lands and surrounding area

(“Subject Area”) was significantly below average in quality and potentially rendering Wolfcamp wells economically unfeasible. *See* Exhibit 1, attached hereto, showing that the consensus landing for optimal development is the Third Bone Spring Sand, not the Upper Wolfcamp. Cimarex respectfully submits that this is why operators¹ in the Subject area overwhelmingly pool the Bone Spring formation only and not the Wolfcamp formation.

4. Cimarex has also determined that there is no baffle between the Third Bone Spring Sand and Upper Wolfcamp that would normally prevent communication between the two formations, resulting in a single reservoir as a common source of supply. Due to the absence of the baffle between the Third Bone Spring Sand and the Upper Wolfcamp, Cimarex has concluded that if Upper Wolfcamp wells were to be completed while drilling and developing the Third Bone Spring Sand, those wells would drain much of the reserves in the Third Bone Spring Sand, where the best reserves are located and would likely result in permanent damage to the target reservoir in the Third Bone Spring Sand.

5. Thus, in Option 1, Cimarex limits its proposed development and applications for compulsory pooling to the Bone Spring and does not seek to pool the Upper Wolfcamp. Option 1 comports to how other operators are developing the surrounding areas that share the same three fundamental characteristics, *viz.*, excellent reserves in the Third 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

¹ Consider that searches in the OCD database appears to show that Permian Resources began actively filing a series of applications for compulsory units in the Subject Area beginning in 2020. Outside of the above-referenced cases it filed with the OCD for the contested hearing with Cimarex, Permian Resources appears to have filed at total of 11 applications to pool units in the Subject Area. Ten of the 11 applications proposed to pool only the Bone Spring and not the Wolfcamp, and only one application pools the Wolfcamp but not the Bone Spring. *See* Case Nos. 23508, 23509, 23510, 23511, 23524, 23525, 23526, 23527, 23528, 23529, and 23530.

rarity of the Wolfcamp development.

6. 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 23516-19. Permian Resources also filed applications for drilling and pooling the Wolfcamp formation in Case Nos. 23512-23515 and 23520-23523, proposing to drill wells in the Upper Wolfcamp despite the fact that those wells would drain the Third 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.

7. Given the poor quality of the Upper Wolfcamp reservoir, the lack of the baffle that would otherwise minimize drainage of the Third 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 dollars² 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.

8. Permian Resources’ decision to propose to develop the Upper Wolfcamp created a dilemma for Cimarex. On the one hand, Cimarex understood, based on clear geological and

² 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.

reservoir data, that the Upper Wolfcamp should not be drilled with additional wells 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.

9. Consequently, Cimarex provided the Division with its Option 2, that involved competing pooling applications for the Wolfcamp in which it explained that the best way to develop the target reservoir is by drilling wells in the Third Bone Springs Sand, the same wells proposed by Cimarex's Bone Spring applications and prohibit the drilling of wells in Upper Wolfcamp. Under Option 2, the "drainage" of the Wolfcamp would be classified as "production" once the Wolfcamp formation is pooled. 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 Third Bone Spring Sand, and not in the Upper Wolfcamp, in order preserve the Upper Wolfcamp from being drilled and thereby protect the common source of supply from drainage and damage.

II. Argument:

A. The optimal development of the Subject Lands is to drill wells in the Third Bone Spring Sand and either select Cimarex's Option 2 or, in the alternative, select Option 1 with a protective buffer zone that would prohibit the drilling of wells in the Upper Wolfcamp.

10. In order to protect the abundant reserves in the Third Bone Spring Sand, and resolve the dilemma created by Permian Resources, the Division, if it finds Cimarex's position in these matters persuasive, should either approve Cimarex's Option 1 or Option 2. If Option 1 is selected for pooling only the Bone Spring formation, this could potentially leave the Upper Wolfcamp open and vulnerable to future applications for drilling and pooling, and therefore, Cimarex under Option 1, if selected, respectfully requests the Division to 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 been repeatedly demonstrated over the years by the fact that operators who were free to drill in both the Bone Spring and Wolfcamp decided to develop the Third Bone Spring Sand and to forego drilling any Upper Wolfcamp wells. *See* Exhibits 1 and 2, attached hereto.

11. Cimarex filed its Wolfcamp applications 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. In its competing Wolfcamp applications, Cimarex emphasized that only the Third Bone Spring Sand 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.

12. Cimarex submits that if Option 1 is pursued, the best course of action for the Division to follow in order to ensure achieving optimal production from the rich reserves located in the Third Bone Spring Sand and to protect the correlative rights would be to allow the drilling of the Third 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 Third Bone Spring, thus protecting the correlative rights of the owners in the Third Bone Spring. In addition, the protective zone would save tens of millions of dollars for wells that would not add to EUR and would likely damage the reservoir. Cimarex has carefully analyzed the need for such a protective buffer zone and provides in Exhibit 4, attached hereto, a graphic depiction and quantification of the area and extent of the Upper Wolfcamp that needs to be protected.

13. In the alternative, Cimarex submits that Option 2, as explained in Cimarex's Brief,

is a fully viable option for the development of the Third Bone Spring for achieving optimal production, preventing waste, and protecting correlative rights. If the Division should decide to select Cimarex's Option 2, then Cimarex would be pooling and spacing the Bone Spring formation as well as the Wolfcamp formation based on the dedication of its Third Bone Spring wells to both units. The granting of operatorship to Cimarex of the Wolfcamp unit, if pooled and spaced, would allow Cimarex to produce the Upper Wolfcamp from its Third Bone Spring Wells, and thereby protect the common source of supply from the drilling of unnecessary wells into the Upper Wolfcamp.

14. The Division has the clear authority under NMSA 1978 Section 70-2-11 to fashion such necessary solutions provided either by Cimarex's Option 2 or Option 1 including the protective buffer zone, as Section 70-2-11 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.

III. Conclusion:

15. Cimarex provides this Amended Motion as an update to and replacement for Cimarex's Prior Motion filed July 18, 2023. The Division granted Cimarex's recent Motion for Continuance of the above-referenced cases to provide additional time to prepare for the hearing to be held August 9-10, 2023, pursuant to a special docket, including allowing Cimarex to submit a Brief that describes the cases from Cimarex's position and allowing Permian Resources to provide a response. In the Brief, Cimarex describes two options, Option 1 and Option 2, based on Cimarex's current applications in place for the Bone Spring formation and the Wolfcamp formation. Cimarex has been grappling with the question of which of its applications best apply to

the Subject Lands to allow the Division to choose the best development plan between Cimarex and Permian Resources. In its Brief, Cimarex shows that both sets of applications can apply depending on which Option the Division would select if it were persuaded that Cimarex's development plan is the one that would best prevent waste, protect correlative rights, and avoid the drilling of unnecessary wells.

16. As a result, Cimarex requests that the Division dismiss its Prior Motion, prior to the contested hearing, and give consideration to this Amended Motion during the hearing along with Cimarex's Brief that describes the Options to be decided at the conclusion of the Division's review of the contested cases when the Division makes its final ruling between Cimarex's development plan and Permian Resources' development plan.

17. If the Division should select Cimarex's Option 2 in its ruling, then Cimarex would receive pooling orders for both the Bone Spring formation and the Wolfcamp formation, and as a consequence of the orders received, the Wolfcamp formation would be protected from drilling. The protective buffer zone requested herein would not be needed, and this Amended Motion would become moot.

18. However, in the alternative, if the Division should select Cimarex's Option 1, then Cimarex would receive an order for the compulsory pooling of just the Bone Spring formation, and in that case, Cimarex respectfully asks the Division to grant its request in this Amended 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, as these applications apply only to Option 2 and not Option 1; (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 target the Lower Wolfcamp, and not the Upper Wolfcamp.

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

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 28, 2023:

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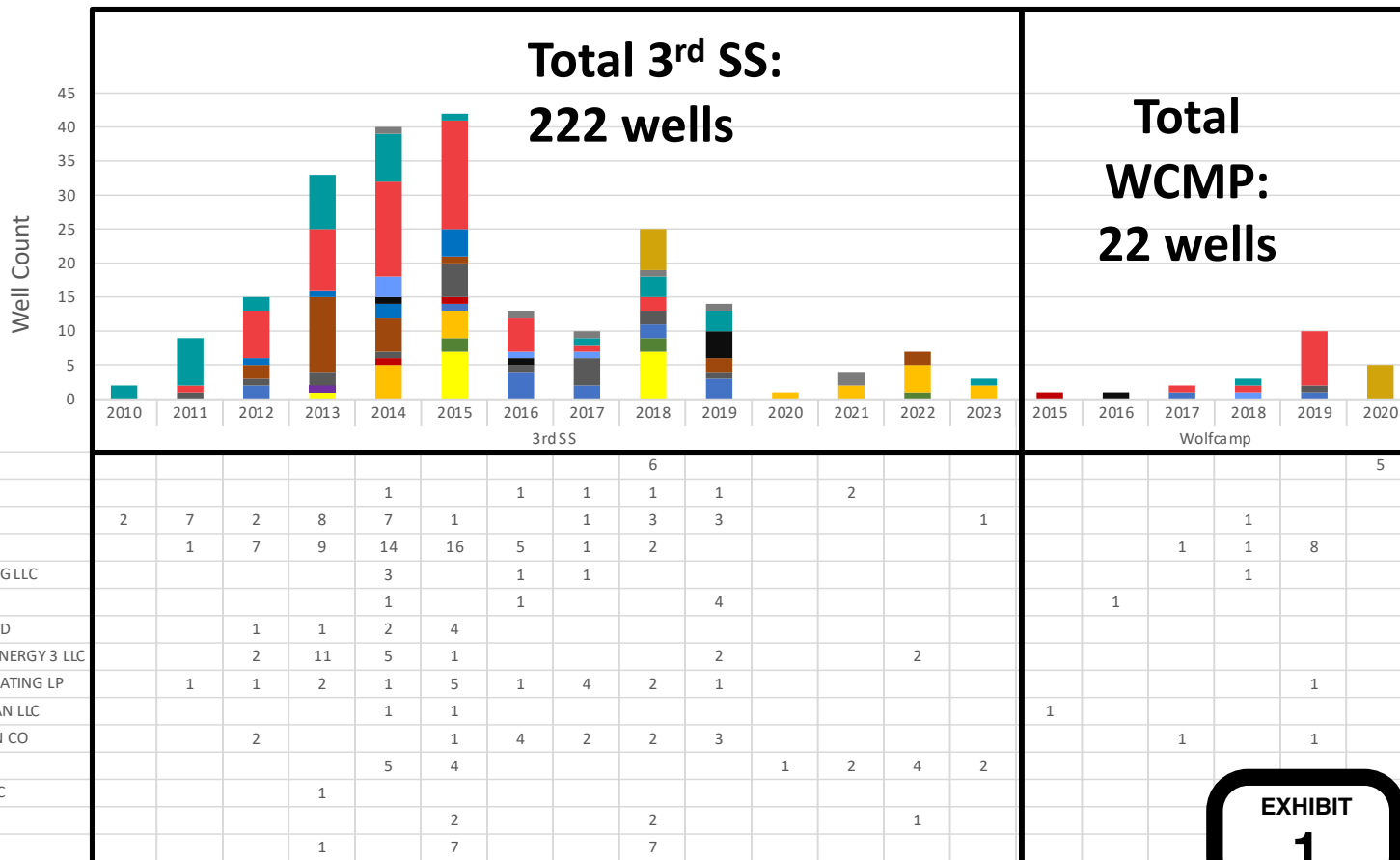
Attorneys for Sandstone Properties, LLC

/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



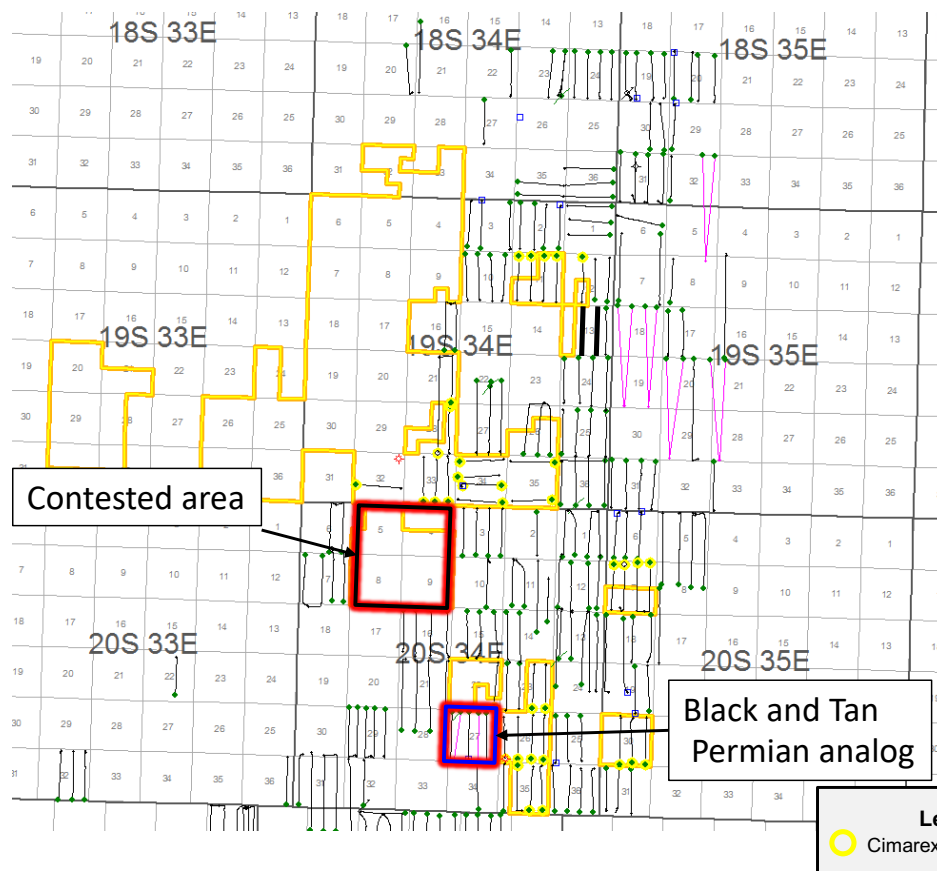
EXHIBIT

1

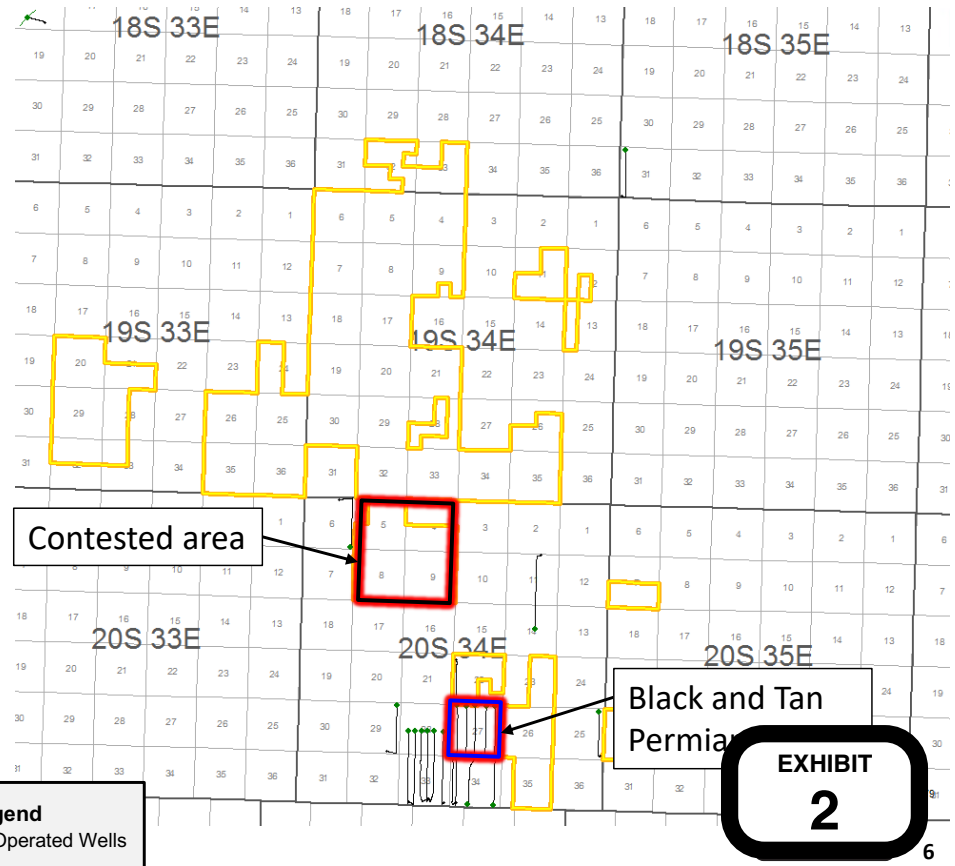
3rd Bone Spring Sand is the Established Single Bench Target at 4 WPS within AOI

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 203H	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		

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
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, 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	36,183	438,183	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 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

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: 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 incurred as set forth or at 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 Permittee agrees to pay its proportionate share of actual costs incurred in the future. Total costs and well costs under the terms of the permit shall be determined by the Permittee. The Permittee shall be notified immediately by the Permittee'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:	Bane 4-9 Federal Com 204H	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		

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11 Drilling	753,820	-	-	753,820
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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
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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

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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
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 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 responsible for the Participant's well.

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 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	429,513	-	-	429,513
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	988,167	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 _____
BC _____ SO _____

NON OPERATING PARTNER APPROVAL:

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

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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 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	\$ 39,066	-	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	34,480	-	102,563
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: FS
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

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		

INTANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
1 Land / Legal / Regulatory	\$ 59,066	-	37,500	\$ 96,566
2 Location, Surveys & Damages	288,979	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
11 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drilling 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
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TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585

TANGIBLE COSTS	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
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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
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)	

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64 Production Liner	-	-	-	-
65 Tubing	-	-	140,000	140,000
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72 Artificial Lift Equipment	-	-	90,000	90,000
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74 Installation Costs	-	-	-	-
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81 Valves, Dumps, Controllers	-	-	108,333	108,333
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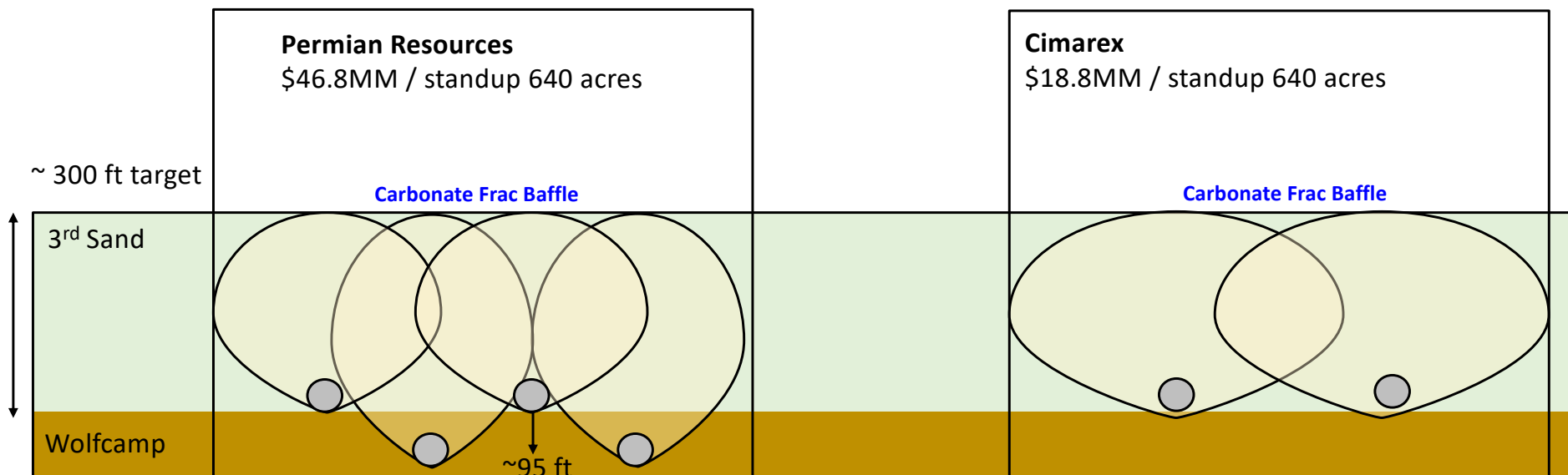
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Title:	Approval: ☐ Yes ☐ No (mark one)	

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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

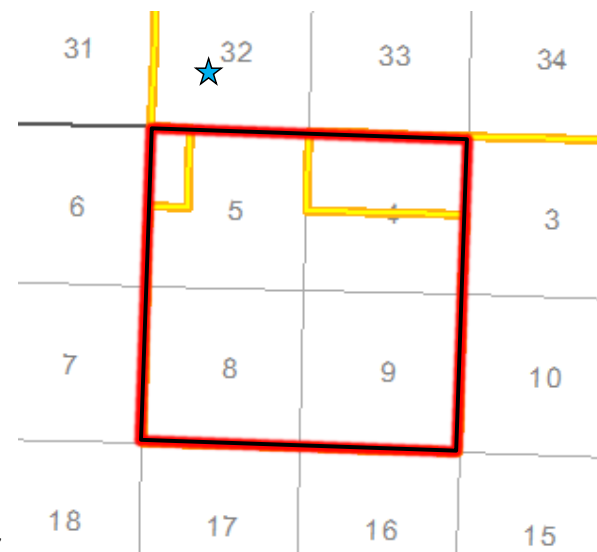
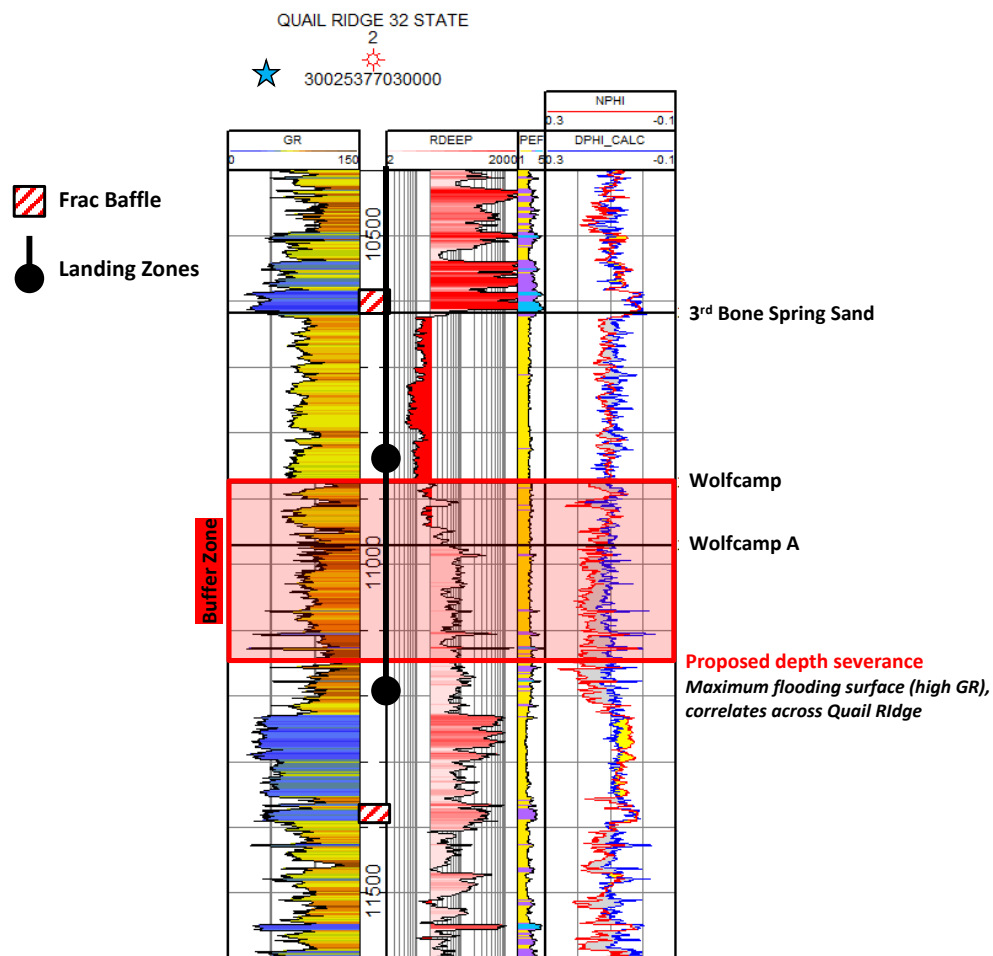


EXHIBIT
5