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

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 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 23516-19. 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 it 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 Wolcamp, below the protective zone, to file separate applications that target the Lower Wolfcamp, and not the Upper Wolfcamp.

Respectfully submitted,

ABADIE & SCHILL, PC

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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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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

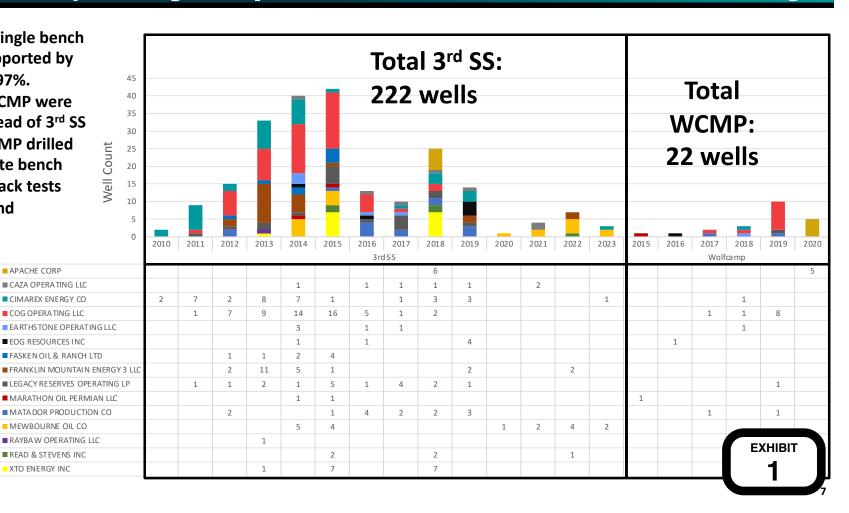
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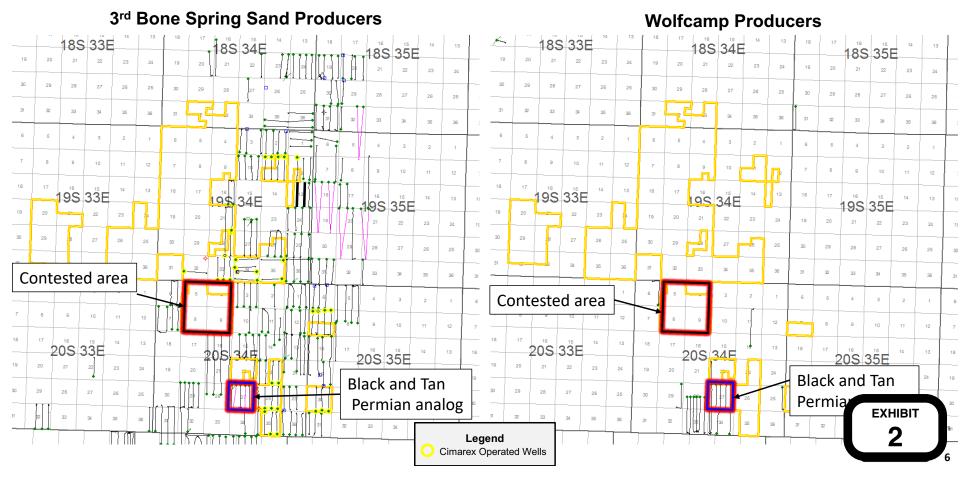
XTO ENERGY INC



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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



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

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ocation, Surveys & Damage regish! Transportation cental - Surface Equipment cental - Downhole Equipmental - Itunia Quarters Directional Drilling, Surve Drilling, Drill Bits Fatel & Tower Cementing & Hoat Equipment of the Completion Unit, Swab, C Perforating, Wireline, Silci High Pressure Pump Tract Completion Unit, Swab, C Mad Circulation System Mud Logging. Formation Evalumd Logging / Formation Evalumd Completion Unit, Swab, C Mad Circulation System Completion Unit, Swab, C Mad Circulation System State Completion Completion Completion Unit, Swab, C Mad Circulation Flowback & E Mady Wastewater Dispose (Spring Spervision) Finginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	ent ys TU tdine t TU ation hisp il ning ead	288,079 47,628 124,327 205,424 48,083 429,543 100,176 188,935 243,296 105,209 17,529 7,270 361,835 43,459 193,164 121,786 10,423 153,358	43,7/8 215,417 39,865 54,480 725,061 1333,136 123,274 146,484 8,339 438,185 661,635 81,033 121,606 6,1,515 133,420	2,500 105,000 105,000	308,641 116,40 144,74 245,72 102,56 149,54 179,36 190,77 191,599 18,999 191,599 191,590 191,752 166,88 181,002 17,52 15,005 100,702 100,703 110,005 11
eright/Transportation cental - Surface Equipment cental - Downhole Equipment ental - Lowenhole Equipment ental - Living Quarters Directional Drilling, Surve Drilling, Surve Drilling, Surve Drilling, Surve Cementing, & Float Equip Completion Unit, Swab, C. Gerefrating, Writerine, Silci High Pressure Pump Truck Completion Unit, Swab, C. Mud Circulation System Mud Logging, Formation Evalument of Chemicals Water Stimulation Flowback & C. Mud Circulation Powback & C. Mud Water Water Stimulation Flowback & C. Mud Circulation Flowback & C. Mud Chemicals Water Chemicals Completion Country Communication Floging Country Coun	ent ys TU tdine t TU ation hisp il ning ead	47,628 124,327 205,424 48,083 429,543 753,820 100,176 188,935 243,296 	43,7/8 215,417 39,865 54,480 725,061 1333,136 123,274 146,484 8,339 438,185 661,635 81,033 121,606 6,1,515 133,420	25,000 105,000 	116,004 444,74 245,72 102,85 102,85 102,85 103,76 103,77 103,77 103,77 104,77 105,77 1
sental - Surface Equipment lental - Dawhole Equipm tental - Livring Quarters Directional Drilling, Surve Drilling, Drill Bils Drill Bils Drill Bils Drill Bils Completion Unit, Swab, Clempletion Systems of Completion Unit, Swab, Clempletion Systems of Clempletion Unit, Swab, Clempletion Stimulation Flowback & E. Mad/Wastewater Disposition of Engineer Unit, & Completion Overh Labor Proppant Contingency Plugging & Abandonment	ys TU Atline TU atlon Hisp II Ining and	124.327 205.424 48.083 429.543 753.820 100.176 188.935 243,296 105.209 17.529 7.2270 361.835 43,459 193,164 10,423 10,423 10,423	215,417 99,865 54,480 	105,000	444/47 265,222 102,552 102,552 102,552 102,552 103,573 103,774 103,594
Rental - Downhole Equipm Rental - Living Quarters Directional Drilling, Surve Drilling, Fuel & Tower Cementing & Float Equip Completion Unit, Swab, C. Ferforating, Witeline, Silci High Pressure Pump Truct Completion Unit, Swab, C. Mud Circulation System Mud Logging, Logging, Formation Evalu Mud & Chemicals Water Stimulation Flowback & E. Mud/Wastewater Dispose Kimulation Flowback & E. Mud/Wastewater Dispose King Supervision/ Enginee Drig & Completion Overh Labor Proppant Insurance	ys TU Atline TU atlon Hisp II Ining and	205,424 48,083 429,543 753,820 100,176 188,935 243,296	\$9,805 \$4,480 7725,061 393,136 123,274 146,484 	15,000 	265,222 102,555 429,54 753,822 100,177 913,999 15,000 393,131 123,277 146,884 105,209 17,525 1,005,008 810,020 811,005,008
Rental - Living Quarters Directional Drilling, Surve Drilling Drill Bils Patel & Fower Cementing & Float Equip Completion Unit, Swab, C Perforating, Wireline, Silci High Pressure Pump Truct Completed Unit, Swab, C Mud Circulation System Mud Capging, Formation Evalu Mud Logging, Formation Evalu Mud & Chemicals Water Stimulation Flowback & E Mud / Wastewater Dispose Stimulation Flowback & E Mud / Wastewater Dispose Labor Proppant Labor Proppant Labor Labor Labor Proppant Lasurance Contingency Plugging & Abandonment	ru kline c ru ation hisp il ining ead	48,083 429543 753,820 100,176 188,935 243,296 105,209 17,529 7,270 361,835 43,459	54,480 7725,061 593,136 122,274 146,484 	15,600 	102,555 429,541 100,177 101,17
Directional Drilling, Surve Drilling Drill Big Drill Big Drill Big Drill Big Steep Lead & Power Cementing & Float Equip Completion Unit, Swab, C Ferforating, Witerline, Silci High Pressure Pamp Truct Completion Unit, Swab, C Mud Circulation System Mud Logging, Logging, Formation Evalum Mud & Chemicals Water Stimulation Flowback & E Mud / Wastewater Dispose Stimulation Flowback & E Mud / Wastewater Dispose Rig Supervision/ Engineer Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	TU titine tit TU ation hisp il ring ead	753,820 100,176 188,935 243,296 	725,061	15,600 	753,822 100,174 913,994 15,500 393,131 122,327 146,484 105,829 17,525 1810,02 1,005,08 814,03 271,005 281,281
Drilling Drill Bits Fuel & Power Cementing & Float Equip Completion Unit, 6wab, C Perforating, Witerline, Sitch High Pressure Tump Truct Completion Unit, 5wab, C Mud Circulation System Mud Logging, Formation Evalu Mud Expansion Formation Evalu Mud & Chemicals Water Stimulation Flowback & C Mud Mud Wastewater Dispos Rig Supervision/ Enginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	TU titine tit TU ation hisp il ring ead	100,176 188,935 243,296	725,061	15,600 	100,17% 913,999 243,299 15,000 939,131 123,272,21 146,488 105,207 17,525 11,005,008 810,02,020 1,005,008 2,005,009 2,005,009 1,005,008 1
Field & Power Cementing, & Float Equip Completion Unit, Swah, C. Ferforating, Wireline, Slich High Pressure Pump Truck Completion Unit, Swah, C. Mud Circulation System Mud Logging, Formation Evalu Mud & Chemicals Water Stimulation Stimulation Flowback & C. Mud / Wastewater Dispose Rig, Sapervision/ Enginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	ation ation isp il	188,933 243,296 105,209 17,529 7,2270 361,833 43,459 193,164 121,196 10,423 153,358	725,061	15,000 10,000 300,000 150,000	913,999 243,299 243,299 15,000 393,131 2123,277 146,484 105,249 17,525 17,525 1810,022 1,005,038 814,033 221,050 2254,255
Cementing & Float Equip Completion Unit, Swab, C Perforating, Wireline, Silei High Pressure Pamp Tract Completion Unit, Swab, C Mad Circulation System Mud Expained, Formation Evalumd Logging, Formation Evalumd & Chemicals Water Stimulation Flowback & E Mud / Wastewater Dispose, Stimulation Flowback & E Mud / Wastewater Dispose, Swap Swap Swap Swap Swap Swap Swap Swap	ation ation isp il	243,296 	393,136 122,274 146,484 8,339 438,185 661,625 814,033 122,606 61,151 133,420	15,000 	243,292 15,000 393,131 123,272 146,484 105,209 17,522 15,609 810,020 21,005,08 814,03 271,600 284,25
Completion Unit, Swab, C. Ferforating, Witchien, Silci High Pressure Pump Truct Completen Unit, Swab, C. Mud Circulation System Mud Logging, Formation Evalu Mud & Chemicals Water Stimulation Stimulation Stimulation Flowback & I: Mud / Wastewater Dispose King Supervision Finginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	ation ation isp il	105,209 17,529 7,2270 361,835 43,459 193,164 121,196 10,423 153,358	123,274 146,484 	10,000 300,000 150,000	15,000 393,131 123,277 146,484 105,200 17,752 15,600 810,002 1,005,088 814,030 271,600
Perforating, Witerline, Silci High Pressure Dramp Truck Completion Unit, Swab, C Mud Citrulation System Mud Engling, Formation Evaluation Research Committee	ation ation isp il	105,209 17,529 7,2270 361,835 43,459 	123,274 146,484 	10,000 300,000 150,000	393,13 123,27 146,48 105,20 17,52 15,60 810,022 1,005,08 814,03 271,60
High Pressure Pump Truc. Completion Lutl, Swab, C Mud Circulation System Mud Logging, Tomation Evalu Mud & Chemicals Water Stimulation Stimulation Stimulation Flowback & I: Mud / Wastewater Dispose King Supervision/ Enginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	c TU Hisp II Ing aad	105,209 17,529 7,2270 361,835 43,459 	123,274 146,484 	10,000 300,000 150,000	146,48- 105,209 17,52: 15,509 810,02: 1,005,08 814,03, 271,609
Completion Unit, Swab, C Mud Circulation System Mud Logsing, Formation Evalu Mud & Chemicals Water Stimulation Flowback & E Mud/ Wastewater Dispos Rig Supervision/ Enginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	TU ation hisp il tring ead	17,529 7,220 361,835 43,459 	8,339 438,185 661,625 814,033 121,696 61,151	10,000 300,000 - 150,000 - 21,667	105,20 17,52 15,60 810,02 1,005,08 814,03 271,60 254,25
Mud Logging Logging/Formation Evalu Mud & Chemicals Water Stimulation Stimulation Flowback & E Mud/ Wastewater Dispose Rig Supervision/Enginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	Hsp II Iring aad	17,529 7,220 361,835 43,459 	8,339 438,185 661,625 814,033 121,606 61,151 133,420	10,000 300,000 150,000 21,667	17,52: 15,60* 810,02 1,005,08 814,03 271,60 254,25
Logging/Formation Evalu Mud & Chemicals Water Stimulation Flowback & I. Mud / Wastewater Dispose Rig Supervision/Enginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	Hsp II Iring aad	7,270 361,835 43,459 	8,339 438,185 661,625 814,033 121,606 61,151 133,420	10,000 300,000 - 150,000 - 21,667	15,60 810,02 1,005,08 814,03 271,60 254,25
Mud & Chemicals Water Stimulation Stimulation Flowback & E Mudd/Wastewater Dispose Rig, Supervision / Enginee Dring & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	Hsp II Iring aad	361,835 43,459 193,104 121,196 10,423 153,358	438,185 661,625 814,033 121,606 61,151 133,420	10,000 300,000 - 150,000 - 21,667	810,021 1,005,08: 814,03: 271,600 254,25:
Waler Stimulation Stimulation Flowback & E Mud / Wastewater Dispose Rig Supervision Finginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	il ring ead	193,104 121,196 10,423 153,358	661,625 814,033 121,606 61,151 133,420	300,000 - 150,000 - 21,667	1,005,08 814,03 271,60 254,25
Stimulation Stimulation Flowback & Di Mud/Wastewater Dispose Rig Supervision / Enginee: Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	il ring ead	193,104 121,796 10,423 153,358	814,033 121,606 61,151 133,420	150,000	814,03: 271,600 254,25
Stimulation Flowback & E. Mud/Wastewater Disposi Rig Sepervision/Enginee: Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	il ring ead	121,196 10,423 153,358	121,606 61,151 133,420	21,667	271,600 254,25
Mud/Wastewater Disposa Rig/Supervision/Enginee Drig & Completion Overh Labor Proppant Insurance Contingency Plugging & Abandonment	il ring ead	121,196 10,423 153,358	133,420	21,667	254,25
Drig & Completion Overh Theopeant Insurance Contingency Plugging & Abandonment	ead	10,423 153,358			276.28
Labor Proppant Insurance Contingency Plugging & Abandonment		153,358	69 489		
Proppant Insurance Contingency Plugging & Abandonment			NG 489	101 667	10,42
Insurance Contingency Plugging & Abandonment		14,660		101,667	324,51- 1,255,22
Contingency Plugging & Abandonment			1,255,227		1,255,22
Plugging & Abandonment			24,421	3,833	28,25
	TOTAL INTANGIBLES >		-		
		3,516,419	5,367,000	772,167	9,655,58
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE C	OSTS	COSTS	COSTS	COSTS	COSTS \$ 122,23
Surface Casing Intermediate Casing	5	122,234 344,284			344,28
Drilling Liner					
Production Casing		687,039	•	-	687,03
Production Liner					
Tubing				140,000	140,00
Wellhead		64,820 14,732		40,000 20,000	104,82 34,73
Packers, Liner Hangers Tanks		14,/32		45,833	45,83
Production Vessels				126,667	126,66
Flow Lines				66,667	66,66
Rod string			-		-
Artificial Lift Equipment			-	90,000	90,00
Compressor		=		5,833	5,83
Installation Costs					
Surface Pumps			-	61,667	61,66
Downhole Pumps Measurement & Meter Ins	tallation			116,667	116,66
Gas Conditioning / Dehyd	ration			110,007	- 110,00
Interconnecting Facility Pi			-	20,000	20,00
Gathering/Bulk Lines				-	-
Valves, Dumps, Controller				108,333	108,33
Tank/Facility Containme	at			43,333	43,33
Flare Stack Electrical / Grounding		<u>:</u>		16,667 50,000	16,66 50,00
i Electrical/Grounding i Communications/SCADA				36,667	36,66
Instrumentation/Safety	-		 -	833	83
	TOTAL TANGIBLES >	1,233,109	0	989,167	2,222,27
	TOTAL COSTS >		5,367,000	1,761,334	11,877,84
ARED BY Permian Reso	urces Operating, LLC:				
Drilling Engineer	PS PS				
Completions Engineer					
Production Engineer					
ian Resources Operating	, LLC APPROVAL:				
Co-CEC		Co	-CEO	VP - Oper	
	WH		JW	•	CRM
VP - Land & Lega		VP - Geosci			
	BG		50		
		-			
OPERATING PARTNE	R APPROVAL:				
Company Name			Working Interest (%):	T	ax ID:
Signed by	:		Date:		
Title			Approval:	Yes	
1 LLC			Approved under the ATE may be delayed up to a your		NO (I

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

	ESTIMATE	OF COSTS AND AUTHO			
DATE:	2.17.2023			AFE NO.:	1
WELL NAME:	Bane 4-9 Federal Com 2	02H		FIELD:	Tonto; Wolfcamp
LOCATION:	Section 4, T20S-R34E			MD/IVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mexic	0		LATERAL LENGTH:	10,000
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
GLOCOSIC IARGEI:		Y well and complete wi	th 44 stages. AFE include		
REMARKS:	AL install cost		-		
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE	COSTS	COSTS	COSTS	COSTS	COSTS
1 Land/Legal/Regulatory		5 59,066	•	37,500	S 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 Rental - Surface Equipmen		124,327	215,417	105,000	444,744
6 Rental - Downhole Equips	ient	205,424	59,805		265,229
7 Rental - Living Quarters		48,083 429,543	54,480		102,562 429,543
10 Directional Drilling, Surv 11 Drilling	cys	753,820			753,820
11 Drilling 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, C				15,000	15,000
16 Perforating, Wireline, Slic			393,136		393,136
17 High Pressure Pump Truc		<u> </u>	123,274	<u> </u>	123,274
18 Completion Unit, Swab, C	.TU	105 300	146,484		146,484 105,209
20 Mud Circulation System		105,209		<u>-</u>	17,529
21 Mud Logging 22 Logging/Formation Eval	nation	17,529 7,270	8,339		15,609
22 Logging/Formation Eval 23 Mud & Chemicals	nanvit	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 &			121,606	150,000	271,606
28 Mud/Wastewater Dispos	al .	193,104	61,151		254,254
30 Rig Supervision / Engine	ering	121,196	133,420	21,667	276,283
32 Drig & Completion Over	nead	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	24,421	3,833	14,660 28,254
97 Contingency 99 Plugging & Abandonmer	4		24,421	3,033	28,2,4
33 I lugging & Abandonmer	TOTAL INTANGIBLES		5,367,000	772,167	9,655,585
· · · · · · · · · · · · · · · · · · ·	TOTALINTANOIDELD			·	_
_		DRILLING	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
TANGIBLE C	OSTS	COSTS		C0313	5 122,234
60 Surface Casing 61 Intermediate Casing		5 122,234 344,284			344,284
62 Drilling Liner		344,204			371,201
63 Production Casing		687,039			687,039
64 Production Liner		- 007,039			
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		-	<u>-</u>	45,833	45,833
69 Production Vessels		·		126,667	126,667
70 Flow Lines		<u> </u>		66,667	66,667
71 Rod string				90,000	90,000
72 Artificial Lift Equipment		<u> </u>		5,833	5,833
73 Compressor 74 Installation Costs				3,633	3,033
75 Surface Pumps				61,667	61,667
76 Downhole Pumps		—— <u> </u>	_ _		- 01,007
77 Measurement & Meter In	stallation			116,667	116,667
78 Gas Conditioning / Dehy			-	-	
79 Interconnecting Facility I	lping			20,000	20,000
80 Gathering / Bulk Lines					
81 Valves, Dumps, Controlle				108,333	108,333
82 Tank / Facility Containme				43,333	43,333
83 Flare Stack				16,667	16,667
84 Electrical/Grounding				50,000	50,000
85 Communications / SCAD	Λ			36,667	36,667
86 Instrumentation / Safety	TOTAL TANGIBLES				2,222,27
_	TOTAL COSTS		5,367,000	989,167 1,761,334	11,877,86
	IOTALCOSIS	- 4,147,340	000,106,6	1,/01,33%	11,017,00.
EPARED BY Permian Res	ources Operating, LLC:				
Drilling Enginee					
Completions Enginee					
Production Enginee	r: DC				
mian Resources Operatin	g LIC APPPOVAL.		-		
Co-CB		Co-C	CEO	VF - Oper	
	WH		JW		CRM
VP - Land & Leg	BG BG	VP - Geoscier	nces		
			- -		
	ER APPROVAL:				
N OPERATING PARTN					
N OPERATING PARTN		-	Working Interest (%):	т	ax ID:
Company Nam	e:		Working Interest (%):	т	ax ID:
	e:		Working Interest (%):	1	'ax ID:
Company Nam	e:				`ax ID:

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

DATE: WELL NAME:	2.17.2023 Bane 4-9 Federal Com 2	203H		AFE NO.: FIELD:	1 Tonto; Wolfcamp
WELL NAME: LOCATION:	Section 4, T20S-R34E			MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mexi	ico		LATERAL LENGTH:	10,000'
Permian WI:	Dea County, New Mex			DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
GEOLOGIC (ARGE);		Y well and complete un	ith 44 stages. AFF includ	les drilling, completions,	
REMARKS:	AL install cost	.1 Well and complete wi	tur 44 stages. Ar E factor	les trining, completions,	HOWDACK AND HILIAN
INTERNATION FOR	· · · · · · · · · · · · · · · · · · ·	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
INTANGIBLE C Land/Legal/Regulatory	USIS	\$ 59,066		37,500	5 96,566
Location, Surveys & Damag	PS.	288,079	18,067	2,500	308,647
Freight/Transportation		47,628	43,778	25,000	116,406
Rental - Surface Equipment		124,327	215,417	105,000	444,744
6 Rental - Downhole Equipme	ent	205,424	59,805		265,229
7 Rental - Living Quarters		48,083	54,480	<u> </u>	102,563
10 Directional Drilling, Surve	ys	429,543 753,820			429,543 753,820
II Drilling I2 Drill Bits		100.176		<u>_</u>	100,176
13 Fuel & Power		188,935	725,061		913,990
14 Cementing & Float Equip		243,296	-		243,29
15 Completion Unit, Swab, C				15,000	15,000
16 Perforating, Wireline, Slick			393,136	-	393,136
17 High Pressure Pump Truck		<u>·</u>	123,274 146,484		123,274 146,484
18 Completion Unit, Swab, C	TU	105,209	140,484		105,205
20 Mud Circulation System 21 Mud Logging		17,529			17,529
22 Logging/Formation Evalu	ation	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 & D		102.104	121,606	150,000	271,600 254,25
28 Mud/Wastewater Disposa 30 Pig Supervision / Engineer		193,104	61,151	21,667	254,25
30 Rig Supervision / Engineer 32 Drig & Completion Overho		10,423	133/420	21,00/	10.42
35 Labor	au	153,358	69,489	101,667	324,514
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	9,655,58
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE CO	OSTS	COSTS	COSTS	COSTS	COSTS
60 Surface Casing		\$ 122,234			5 122,23-
61 Intermediate Casing 62 Drilling Liner		344,284		<u> </u>	344,28
62 Drilling Liner 63 Production Casing		687,039			687,03
64 Production Liner					
65 Tubing				140,000	140,00
66 Wellhead		64,820		40,000	104,82
67 Packers, Liner Hangers		14,732	<u> </u>	20,000	34,73
68 Tanks 69 Production Vessels		<u>-</u>		45,833 126,667	45,83 126,66
70 Flow Lines				66,667	66,667
71 Rod string					
72 Artificial Lift Equipment				90,000	90,00
73 Compressor		-		5,833	5,833
74 Installation Costs		-			
75 Surface Pumps			<u>-</u>	61,667	61,66
76 Downhole Pumps	tallation			116,667	116,66
77 Measurement & Meter Ins 78 Gas Conditioning / Dehyd				110,007	110,00
79 Interconnecting Facility Pi				20,000	20,00
80 Gathering / Bulk Lines				•	-
81 Valves, Dumps, Controller			•	108,333	108,33
82 Tank / Facility Containme			•	43,333	43,333
83 Flare Stack				16,667	16,66
84 Electrical / Grounding 85 Communications / SCADA				50,000 36,667	50,000 36,660
86 Instrumentation / Safety	-			833	83
	TOTAL TANGIBLES		0	989,167	2,222,27
	TOTAL COSTS		5,367,000	1,761,334	11,877,86
PARED BY Domeion D	urrae Opombin - 110				
PARED BY Permian Reso					
Drilling Engineer:					
Completions Engineer					
Production Engineer:	DC		-		
nian Resources Operating	LLC APPROVAL:				
Co-CEO		Co-C		VP - Oper	
VP - Land & Legal	WH	VP - Geoscie	JW		CRM
· · · · Lanu & LCBa	BG	71 GUSER	50		
OPERATING PARTNE	R APPROVAL:			<u></u>	
OF EXALING LAK IIVE					
Company Name			Working Interest (%):		Tax ID:
Company Name			Working Interest (%):		Tax ID:
			Working Interest (%): Date:		ax ID:

Permian Resources Operating, LLC 300 N. Marienfeld St., Ste. 1000 Midland, TX 79701

	ESTIMATE	OF COSTS AND AUTHO	RIZATION FOR EXPEND	ITURE	
DATE:	2.17.2023			AFE NO.:	1
WELL NAME:	Bane 4-9 Federal Com	20417		FIELD:	Tonto; Wolfcamp
		20411		_	
LOCATION:	Section 4, T20S-R34E			MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mexi	ico		LATERAL LENGTH:	10,000
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
GEOLOGIC TARGET:		Y wall and complete tril	th 44 stages. AFE include	_	
REMARKS:	AL install cost	. I well and complete wit	ar 44 surges. 711 is include	s ariming, completions, i	DWOLK LILL HUILL
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE	COSTS	COSTS	COSTS	COSTS	COSTS
1 Land/Legal/Regulatory		S 59,066		37,500	S 96,566
2 Location, Surveys & Dam	ages	288,079	18,067	2,500	308,647
4 Freight / Transportation		47,628	43,778	25,000	116,406
5 Rental - Surface Equipme	rat .	124,327	215,417	105,000	444,744
6 Rental - Downhole Equip		205,424	59,805		265,229
7 Rental - Living Quarters		48,083	54,480		102,562
10 Directional Drilling, Sur	vevs	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 Equi		243,296			243,296
15 Completion Unit, Swab,				15,000	15,000
16 Perforating, Wireline, Sl.			393,136		393,136
17 High Pressure Pump Tru			123,274		123,274
18 Completion Unit, Swab,			146,484		146,484
20 Mud Circulation System		105,209			105,209
		17,529			17,529
21 Mud Logging 22 Logging / Formation Eva	Instina	7,270	8,339		15,609
	10011011		438,185	10,000	810,020
23 Mud & Chemicals		361,835			
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation	m.	<u> </u>	814,033		814,033
26 Stimulation Flowback &			121,606	150,000	271,606
28 Mud/Wastewater Dispo		193,104	61,151		254,254
30 Rig Supervision / Engine		121,196	133,420	21,667	276,283
32 Drlg & Completion Over	rhead	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 & Abandonme	nt			-	•
	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE	COSTS	COSTS	COSTS	COSTS	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 Equipmen	•			90,000	90,000
73 Compressor	•			5,833	5,833
74 Installation Costs				3,000	
75 Surface Pumps				61,667	61,667
				01,007	01,007
76 Downhole Pumps			<u>_</u>	116667	116.667
77 Measurement & Meter I				116,667	116,667
78 Gas Conditioning / Deh		<u>-</u> _		20,000	20,000
79 Interconnecting Facility	riping	<u>-</u>	<u> </u>	20,000	20,000
80 Gathering/Bulk Lines	_	<u>-</u>	·		
81 Valves, Dumps, Control		•		108,333	108,333
82 Tank / Facility Contains	nent			43,333	43,333
83 Flare Stack				16,667	16,667
84 Electrical / Grounding				50,000	50,000
85 Communications / SCA1	JA			36,667	36,667
86 Instrumentation / Safety					833
				833	
,		> 1,233,109	0	989,167	2,222,276
			0 5,367,000		2,222,276 11,877,862
	TOTAL TANGIBLES TOTAL COSTS			989,167	
EPARED BY Permian Re	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC:			989,167	
EPARED BY Permian Re	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er: PS			989,167	
EPARED BY Permian Re	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er: PS			989,167	
EPARED BY Permian Re Drilling Engine Completions Engine	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er: ML			989,167	
EPARED BY Permian Re	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er: ML			989,167	
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er: PS er: ML er: DC			989,167	
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er. ML er. DC ang, LLC APPROVAL:		5,367,000	989,167 1,761,334	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er. ML er. DC ang, LLC APPROVAL:	> 4,749,528	5,367,000	989,167	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er: ML er. DC ng, LLC APPROVAL: 30 WH	> 4,749,528	5,367,000	989,167 1,761,334	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine mian Resources Operation	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er. ML er. DC ng, LLC APPROVAL:	> 4,749,528	5,367,000	989,167 1,761,334	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine mian Resources Operation	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er: ML er. DC ng, LLC APPROVAL: 30 WH	> 4,749,528	5,367,000	989,167 1,761,334	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine mian Resources Operatin Co-Cl VP - Land & Let	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er. ML er. DC ng_LLC APPROVAL: 50 WH 541 BG	> 4,749,528	5,367,000	989,167 1,761,334	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine mian Resources Operati Co-Cl VP - Land & Le	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er. ML er. DC ng_LLC APPROVAL: 50 WH 541 BG IER APPROVAL:	> 4,749,528	5,367,000 EO	989,167 1,761,334 VP - Opera	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine mian Resources Operation	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er. PS er. ML er. DC ng_LLC APPROVAL: 50 WH 541 BG IER APPROVAL:	> 4,749,528	5,367,000	989,167 1,761,334 VP - Opera	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine mian Resources Operati Co-Cl VP - Land & Le	TOTAL TANGIBLES TOTAL COSTS sources Operating, LLC: er: PS er: ML er: DC mg_ LLC APPROVAL: 30 WH gal BG IER APPROVAL:	> 4,749,528	5,367,000 EO	989,167 1,761,334 VP - Opera	11,877,862
EPARED BY Permian Re Drilling Engine Completions Engine Production Engine mian Resources Operati Co-Cl VP - Land & Let N OPERATING PARTN Company Nan	TOTAL TANGIBLES TOTAL COSTS SOURCES Operating, LLC: er: PS er: ML er: DC WH Sal	> 4,749,528	5,367,000 ECO	989,167 1,761,334 VP - Opera	11,877,862

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

ESTIMATE OF COST:	S AND AUT	HORIZATION	FOR EXPE	NDITUR

DATE:	2,17.2023			AFE NO.:	1
WELL NAME:	Joker 5-8 Federal Com 2	01H		FIELD:	Tonto; Wolfcamp
	Section 5, T20S-R34E			MD/TVD:	21,211' / 10,926'
	Lea County, New Mexic	~		LATERAL LENGTH:	10,000'
	cou county, rien men			DRILLING DAYS:	19.6
ermian WI:					19
	WCXY			COMPLETION DAYS:	
		Y well and complete wi	th 44 stages. AFE includ	es drilling, completions, f	nowback and initial
EMARKS:	AL install cost	<u> </u>			
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE C	OSTS	COSTS	COSTS	COSTS	COSTS
Land/Legal/Regulatory		59,066		37,500	\$ 96,56
Location, Surveys & Damage	s	288,079	18,067	2,500	308,64
Freight/Transportation		47,628	43,778	25,000	116,40
Rental - Surtace Equipment		124,32/	215,417	105,000	444,74
Rental - Downhole Equipme	nt	205,424	59,805		265,22
Rental - Living Quarters		48,083	54,480		102,56
Directional Drilling, Survey	rs	429,543			429,54
1 Orilling		753,820			753,82
2 Orll 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, CI	U			15,000	15,00
6 Pertorating, Wireline, Slick	line		393,136		393,13
7 High Pressure Pump Truck			123,274	-	123,27
8 Completion Unit, Swab, Cl	ับ		146,484		146,48
0 Mud Circulation System		105,209		-	105,20
1 Mud Logging		17,529			17,52
2 Logging / Formation Evalua	tion	7,270	8,339		15,60
3 Mud & Chemicals		361,835	438,185	10,000	810,02
4 Water		43,459	661,625	300,000	1,003,00
5 Stimulation			814,033		814,03
6 Stimulation Flowback & D	sp		121,606	150,000	271,60
8 Mud/Wastewater Disposa		193,104	61,151		254,2
0 Rig Supervision / Engineer		121,196	133,420	21,667	2/6,20
2 Drig & Completion Overhe	ad	10,423			10,42
5 Labor		153,358	69,489	101,667	324,5
4 Proppant			1,255,227		1,255,2
5 Insurance		14,660			14,66
7 Contingency			24,421	3,833	28,25
" Plugging & Abandonment					
7 I lugging at Athanaoinment			7.4/7.000	PM 4/8	9,655,5
	TOTAL INTANGIBLES	> 3,516,419	5,367,000	772,167	
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE CO	STS	COSTS	COSTS	COSTS	COSTS
0 Surface Casing		5 122,234	·····		5 122,23
1 Intermediate Casing		344,284			344,21
2 Drilling Liner					-
3 Production Casing		687,039	-		687,0
4 Production Liner					
5 Tubing				140,000	140,00
66 Wellhead		64,820		40,000	104,82
7 Packers, Liner Hangers		14,732		20,000	34,73
8 Tanks				45,833	45,83
9 Production Vessels				126,667	126,66
70 Flow Lines				66,667	66,66
71 Kod string					
2 Artificial Lift Equipment				90,000	90,00
3 Compressor				5,833	5,83
4 Installation Costs					
5 Surface Pumps				61,667	61,60
6 Downhole Pamps					
7 Measurement & Meter Inst	illation			116,667	116,60
'8 Gas Conditioning / Dehydr					
9 Interconnecting Facility Pig				20,000	20.00
O Gathering / Bulk Lines	•				
1 Valves, Dumps, Controllers				108,333	108,33
2 Tank / Facility Containmen				43,333	43,33
3 Flare Stack	•			16,667	15,66
4 Electrical / Grounding				50,000	50,00
5 Communications / SCADA			_	36,667	36,66
6 Instrumentation / Safety				833	- 80,00
Jerety	TOTAL TANGIBLES	1,233,109			2,222,2
				989,167	
	TOTAL COSTS	> 4,749,528	5,367,000	1,761,334	11,877,8
PARED BY Permian Resor	rces Operating, LLC:				
Drilling Engineer:	PS				
Completions Engineer:	ML				
Production Engineer:	DC				
ian Resources Operating,	II.C APPROVAT				
an resources operating,	LEC HITROTAL				
Co-CEO		Co-C		VP - Opera	ations
	WH		JW	·	CRM
VP - Land & Legal		VP - Geoscier	nces		
•	BG BG		so		
	APPROVAL:				
OPERATING PARTNER				т.	ax ID:
OPERATING PARTNER			Working Interest (%):		
Company Name:			_		
Company Name: Signed by:			Working Interest (%):		
• •			_		No (mark one)

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:	oker 5-8 Federal Com 2	02H		FIELD:	Tonto; Wolfcamp
	Section 5, T20S-R34E			MD/TVD:	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexic	•		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
		well and complete	with 44 stages. AFE inclu	des drilling, completions,	flowback and Initial
REMARKS:	AL install cost				
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLE CO	OSTS	COSTS	COSTS	COSTS	COSTS
Land/Legal/Regulatory		59,066	39767	37,500	\$ 96,566 308,647
! Location, Surveys & Damage ! Freight/Transportation	•	288,079	18,067	25,000	116,406
Kental - Surtace Equipment		124,327	215,417	105,000	444,744
Kental • Downhole Equipme	nt	205,424	59,805	-	265,229
Rental - Living Quarters		48,083	54,480		102,562
O Directional Dritting, Survey	5	429,543 753,820		-	429,543 753,820
11 Drilling 12 Drill Bits		100,176			100,176
3 Fuel & Power		188,935	725,06T		913,996
4 Cementing & Float Equip		243,296	•		243,296
5 Completion Unit, Swab, CT				15,000	15,000
6 Pertorating, Wireline, Slicki	ine		393,136 123,274		393,136
7 High Pressure Pump Truck 8 Completion Unit, Swab, CT	U		146,484	 -	146,484
0 Mud Circulation System	-	105,209			105,209
1 Mud Logging		17,529			17,529
2 Logging / Formation Evalua	tion	7,270	8,339		15,609
23 Mud & Chemicals 24 Water		361,833 43,459	438,185	10,000	810,020 1,005,083
24 vvater 25 Stimulation			814,033		814,033
to Stimulation Flowback & Di	;p		121,606	150,000	2/1,606
25 Mud/Wastewater Disposal	•	193,104	61,151		254,254
30 Rig Supervision / Engineeri		121,196	133,420	21,667	2/6,283
32 Drig & Completion Overhe 35 Labor	ıa	10,423	69,489	101,667	10,423 324,514
54 Proppant		133,336	1,255,227	101,007	1,255,22/
5 Insurance		14,660			14,660
7 Contingency			24,421	3,833	28,254
99 Plugging & Abandonment					
	TOTAL INTANGIBLES >		5,367,000	772,167	9,655,585
T. M. C. D. F. C. O.		DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
TANGIBLE CO O Surface Casing	515	122,234			5 122.234
1 Intermediate Casing	•	344,284			344,284
2 Drilling Liner					
3 Production Casing		687,039	-		687,039
4 Production Liner				140,000	140,000
5 Tubing 6 Wellhead		64,820		40,000	104,820
7 Packers, Liner Hangers		14,/32		20,000	34,732
88 Tanks				45,833	45,833
9 Production Vessels				126,667	126,667
'U Flow Lines '1 Rod string				66,667	66,667
72 Artificial Lift Equipment			- _	90,000	90,000
3 Compressor				5,833	5,833
4 Installation Costs					
5 Surtace Pumps				61,667	61,667
'6 Downhole Pumps '7 Measurement & Meter Insia	Halion		 -	116,667	116,667
8 Gas Conditioning/Dehydra				- 170,007	- 110,007
⁷⁹ Interconnecting Facility Pip				20,000	20,000
O Gathering / Bulk Lines					
1 Valves, Dumps, Controllers			<u> </u>	108,333	108,333
32 Tank / Facility Containment 33 Flare Stack				43,333	43,333
A Electrical / Grounding				50,000	50,000
5 Communications / SCADA				36,667	36,667
66 Instrumentation / Satety				833	833
	TOTAL TANGIBLES >			989,167	2,222,276
	TOTAL COSTS >	4,749,528	5,367,000	1,761,334	11,877,862
	_				
ARED BY Permian Resou	rces Operating, LLC:				
Drilling Engineer:	PS				
Completions Engineer:	ML				
Production Engineer:	DC				
			· -		
ian Resources Operating,	LLC APPKOVAL:				
Co-CEO		c	Co-CEO	VP - Ope	
•	WH		JW		CRM
VP - Land & Legal	BG	VP - Geos	ciences		
			3.0		
			_		
-	APPROVAL				
N OPERATING PARTNER Company Name:	APPROVAL:		Working Interest (%):	1	Tax ID:
-	APPROVAL:		Working Interest (%): Date:	1	Fax ID:
Company Name:	APPROVAL		•		Tax ID:

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

STIMATE OF	COSTS	AND AL	THORIZATION	N FOR EXPENDE	TURE

DATE:	2.17.2023			AFE NO.: _	- IV. 16
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	TO		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
		well and complete wi	ith 44 stages. AFE include		lowback and Initial
REMARKS:	AL install cost	wen und compicte wi	an 11 subcas i u D dicaduc	S draming, compression,	
KENDARG.	7E libuli cost				
		DRILLING	COMPLETION	PRODUCTION	TOTAL
INTANGIBLI	PERON	COSTS	COSTS	COSTS	COSTS
1 Land/ Legal/ Regulatory	100313	59,066		37,500	\$ 96,566
2 Location, Surveys & Dam	1005	288,079	18,067	2,500	308,647
4 Freight / Transportation	uges	47,628	43,778	25,000	116,406
5 Rental - Surface Equipme	ent	124,327	215,417	105,000	444,744
6 Rental - Downhole Equip		205,424	59,805		265,229
7 Rental - Living Quarters		48,083	54,480		102,562
10 Directional Urilling, Sur	vevs	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 Equi	p	243,296			243,296
15 Completion Unit, Swab,	CIU			15,000	15,000
16 Periorating, Wireline, Si	ickline		393,136		393,136
17 High Pressure Pump Tru	ick		123,2/4	 -	123,274
18 Completion Unit, Swab,	CIU		146,484		146,484
20 Mud Circulation System	ı	105,209			105,209
21 Mud Logging		17,529	-		17,529
22 Logging / Formation Eva	luation	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 &			121,606	150,000	271,606
28 Mud / Wastewater Dispo		193,104	61,151		254,254
30 Rig Supervision / Engine		121,196	133,420	21,667	2/6,283
32 Drig & Completion Over	rhead	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 & Abandonme				•	
	TOTAL INTANGIBLES >	3,516,419	5,367,000	772,167	9,655,585
		DRILLING	COMPLETION	PRODUCTION	TOTAL
TANGIBLE	coere	COSTS	COSTS	COSTS	COSTS
60 Surface Casing	COSIS				
61 Intermediate Casing	•	122,234		<u> </u>	\$ 122,234
62 Drilling Liner		344,284			344,284
63 Production Casing		687,039			
64 Production Liner		007,037			687,039
65 Tubing			- _	140,000	140,000
66 Weilhead		64,820		40,000	104,820
67 Packers, Liner Hangers		14,732		20,000	34,732
68 Tanks		14,732		45,833	45,833
69 Production Vessels				126,667	126,667
70 Flow Lines				66,667	66,667
71 Rod string				00,007	00,007
72 Artiticial Lift Equipment	•			90,000	90,000
73 Compressor	٠ .			5,833	5,833
74 Installation Costs				3,033	5,833
75 Surtace Pumps				61,667	61,667
76 Downhole Pumps				01,007	61,007
77 Measurement & Meter I	ustallation	<u>_</u>		116,667	116,667
78 Gas Conditioning / Dehy				110,007	110,007
79 Interconnecting Facility	Piping		<u>-</u> _	20,000	20,000
80 Gathering / Bulk Lines	7-0				
81 Valves, Dumps, Controll	ers			108,333	108,333
82 Tank / Facility Containm				43,333	43,333
83 Flare Stack				16,667	16,667
84 Electrical / Grounding				50,000	50,000
85 Communications/SCAL)A			36,667	36,667
86 Instrumentation / Safety				833	833
	TOTAL TANGIBLES >	1,233,109		989,167	2,222,276
	TOTAL COSTS >		5,367,000		
	IOIAL COSIS?	7,/17,045	3,367,000	1,761,334	11,877,862
EPARED BY Permian Res	ources Operating, LLC:				
Drilling Enginee	er: PS				
Completions Enginee					
Production Enginee					
Troubchon Enginee	E.C. DC				
rmian Resources Operatin	g, LLC APPROVAL:				
Co-CE	o <u></u>	Co-C		VP - Opera	tions
	WH		JW		CRM
VP • Land & Leg	ai	VP - Geoscien	ices		
	BG		50		
			_		
ON OPER ATTRIC PARTY	ED ADDDOVAL.				
ON OPERATING PARTN	ER AFFRUVAL:				
Company Nam	e:		Working Interest (%).	-	~ ID:
Company Nam	··		Working Interest (%):	Ta	x ID:
Signed b	1 2		B		
Signed b	7.		Date:		
Tai			A	T Von '	No (made and
Titl	e:		Approval:	Yes	No (mark one)
Title	e:	toet of the project. Tuking installation appro- ider the irrors of the applicable joint operatin	erred under the AFE may be delayed up to a year o		

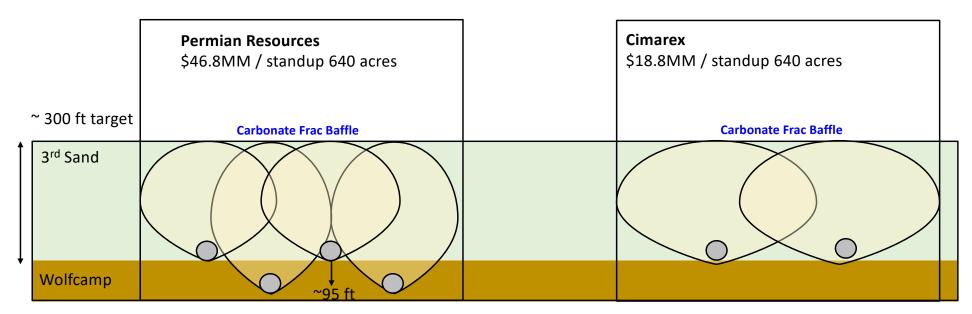
Permian Resources Operating, LLC 300 N. Marienfeld St., Ste. 1000 Midland, TX 79701 Phone (432) 695-4222 • Fax (432) 695-4063

TIMATE OF COSTS AND AUTHORIZATION FOR EXPENDI	TURF

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 Mexi	со		LATERAL LENGTH:	10,000'
Permian WI:				DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY			COMPLETION DAYS:	19
	Drill a horizontal WCX	Y well and complete w	ith 44 stages. AFE includ	des drilling, completions, i	lowback and Initial
REMARKS:	AL install cost		·		
		DRILLING	COMPLETION	PRODUCTION	TOTAL
		COSTS	COMPLETION	PRODUCTION COSTS	COSTS
INTANGIBLE TLand/Legal/Regulatory	0515	5 59,066		37,500	\$ 96,566
2 Location, Surveys & Dama	205	288,079	18,067	2,500	308,647
4 Freight/Transportation	,	47,628	43,778	25,000	116,406
5 Rental - Surface Equipmen		124,327	215,417	105,000	444,744
6 Rental - Downhole Equipm	ent	205,424	59,805		265,229 102,562
7 Rental - Living Quarters 10 Directional Drilling, Surv	ntee	48,083	54,480		429,543
11 Drilling	.,,,	753,820			753.820
12 Drill Bits		100,176			100,176
13 Fuel & l'ower		188,935	725,061		913,996
14 Cementing & Float Equip	•••	243,296			243,296
15 Completion Unit, Swab, C 16 Perforating, Wireline, Slice			393,136	15,000	15,000 393,136
17 High Pressure Pump Truc			123,274		123,2/4
18 Completion Unit, Swab, C			146,484		146,484
20 Mud Circulation System		105,209			105,209
21 Mud Logging		17,529			17,529
22 Logging / Formation Evalu 23 Mud & Chemicals	iation	361,835	8,339 438,185	10,000	15,609 810,020
24 Water		43,459	661,625	300,000	1,005,083
25 Stimulation			814,033		814,033
26 Stimulation Flowback & L			121,606	150,000	271,606
28 Mud/Wastewater Dispos		193,104	61,151		254,254
30 Kig Supervision / Enginee		121,196	133,420	21,667	276,283
32 Drig & Completion Overh 35 Labor	rau.	10,423	69,489	101,667	10,423 324,514
54 Proppant		- 133,36	1,255,227	- 101,007	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		\$ 122,234	·	•	5 122,234
61 Intermediate Casing		344,284		•	344,284
62 Orilling 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 69 Production Vessels		<u> </u>		45,833 126,667	45,833 126,667
70 Flow Lines			<u>:</u>	66,667	66,667
71 Rod string					
72 Artiticial 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			.	61,007	61,007
77 Measurement & Meter Ins	tallation			116,667	116,667
78 Gas Conditioning / Dehyo	tration	•			
79 Interconnecting Facility P	ping			20,000	20,000
80 Gathering / Bulk Lines		-		108,333	300000
81 Valves, Dumps, Controlle 82 Tank / Facility Containme				43,333	108,333
83 Flare Stack				15,667	16,667
84 Electrical / Grounding		•		50,000	50,000
85 Communications / SCAD	1			36,667	36,667
86 Instrumentation / Safety	mam			833	833
	TOTAL TANGIBLES		0	989,167	2,222,276
	TOTAL COSTS	> 4,749,528	5,367,000	1,761,334	11,877,862
-					
EPARED BY Permian Reso	urces Operating, LLC:				
			-		
Drilling Engineer					
Completions Engineer					
Completions Engineer Production Engineer	: DC ·				
Completions Engineer Production Engineer	: DC ·				
Completions Engineer Production Engineer mian Resources Operating	LLC APPROVAL:	Cod	CEO	VP. Opera	tions
Completions Engineer Production Engineer	LLC APPROVAL:	Co-4	CEO	VP - Opera	itions
Completions Engineer Production Engineer mian Resources Operating Co-CEC	LLC APPROVAL:		jw	VP - Opera	
Completions Engineer Production Engineer mian Resources Operating	LLC APPROVAL:	Co-4 VP - Geoscie	jw	VP - Opera	
Completions Engineer Production Engineer mian Resources Operating Co-CEC	LLC APPROVAL:		JW	VP - Opera	
Completions Engineer Production Engineer mian Resources Operating Co-CEC	LLC APPROVAL:		JW	VP - Opera	
Completions Engineer Production Engineer mian Resources Operating Co-CEC	LLC APPROVAL:		JW	VP - Opera	
Completions Engineer Production Engineer mian Resources Operating Co-CEC VP - Land & Lega	LLC APPROVAL: WH BG		JW	VP - Opera	
Completions Engineer Production Engineer mian Resources Operating Co-CEC VP - Land & Lega N OPERATING PARTNE	LLC APPROVAL: WH BG R APPROVAL:		ncesSO		CRM
Completions Engineer Production Engineer mian Resources Operating Co-CEC VP - Land & Lega	LLC APPROVAL: WH BG R APPROVAL:		JW		
Completions Engineer Production Engineer mian Resources Operating Co-CEC VP - Land & Lega NO OPERATING PARTNE Company Name	LLC APPROVAL: WH BG R APPROVAL:		SO Working Interest (%):		CRM
Completions Engineer Production Engineer mian Resources Operating Co-CEC VP- Land & Lega NO OPERATING PARTNE Company Name Signed by	LLC APPROVAL: WH BG R APPROVAL:		SO Working Interest (%): Date:	Te	CRM
Completions Engineer Production Engineer mian Resources Operating Co-CEC VP - Land & Lega NO OPERATING PARTNE Company Name	LLC APPROVAL: WH BG R APPROVAL:		SO Working Interest (%):	Te	CRM

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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.



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

