

**BEFORE THE OIL CONSERVATION DIVISION  
EXAMINER HEARING JULY 20, 2023**

**APPLICATION OF CIMAREX ENERGY CO.  
FOR A COMPULSORY POOLING, LEA COUNTY, NEW MEXICO**

**Case Nos. 23594, 23595, 23596, 23597, 23598, 23599, 23600, 23601**

**CIMAREX ENERGY CO.**

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## **TAB 1**

Reference for Case Nos. 23594-23601  
Applications Case Nos. 23594-23601  
Prehearing Statement Case No. 23594-23601 with Attached Motion

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

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

Case No. 23594

APPLICATION

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.01-acre, more or less, spacing and proration unit comprised of Lot 4 (NW/4 NW/4 equivalent), the SW/4 NW/4, and the W/2 SW/4 of Section 5 and the W/2 W/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Mighty Pheasant 5-8 Fed Com 301H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 301H well described in the application filed by Cimarex in Case No. 23449. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Mighty Pheasant 5-8 Fed Com 301H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23520, for the Wolfcamp formation.

3. Cimarex proposes the **Mighty Pheasant 5-8 Fed Com 301H Well**, an oil well, to be horizontally drilled from a surface location in Lot 4 (NW/4 NW/4 equivalent) of Section 5 to a bottom hole location in the SW/4 SW/4 (Unit M) of Section 8.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted interests in the Wolfcamp formation underlying the proposed HSU.

B. Approving the **Mighty Pheasant 5-8 Fed Com 301H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **301H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**



*Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.*

Applicant in the above-styled cause seeks an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.01-acre, more or less, spacing and proration unit comprised of Lot 4 (NW/4 NW/4 equivalent), the SW/4 NW/4, and the W/2 SW/4 of Section 5 and the W/2 W/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Mighty Pheasant 5-8 Fed Com 301H Well**, an oil well, to be horizontally drilled from a surface location in Lot 4 (NW/4 NW/4 equivalent) of Section 5 to a bottom hole location in the SW/4 SW/4 (Unit M) of Section 8. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23595

APPLICATION

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.04-acre, more or less, spacing and proration unit comprised of Lot 3 (NE/4 NW/4 equivalent), the SE/4 NW/4, and the E/2 SW/4 of Section 5 and the E/2 W/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Mighty Pheasant 5-8 Fed Com 302H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 302H well described in the application filed by Cimarex in Case No. 23450. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Mighty Pheasant 5-8 Fed Com 302H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23521, for the Wolfcamp formation.

3. Cimarex proposes the **Mighty Pheasant 5-8 Fed Com 302H Well**, an oil well, to be horizontally drilled from a surface location in Lot 4 (NW/4 NW/4 equivalent) of Section 5 to a bottom hole location in the SE/4 SW/4 (Unit N) of Section 8.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted interests in the Wolfcamp formation underlying the proposed HSU.

B. Approving the **Mighty Pheasant 5-8 Fed Com 302H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **302H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.04-acre, more or less, spacing and proration unit comprised of Lot 3 (NE/4 NW/4 equivalent), the SE/4 NW/4, and the E/2 SW/4 of Section 5 and the E/2 W/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Mighty Pheasant 5-8 Fed Com 302H Well**, an oil well, to be horizontally drilled from a surface location in Lot 4 (NW/4 NW/4 equivalent) of Section 5 to a bottom hole location in the SE/4 SW/4 (Unit N) of Section 8. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

formation, based on the geology of the lands, is achieved by drilling the **Mighty Pheasant 5-8 Fed Com 303H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23522, for the Wolfcamp formation.

3. Cimarex proposes the **Mighty Pheasant 5-8 Fed Com 303H Well**, an oil well, to be horizontally drilled from a surface location in SW/4 SE/4 (Unit O) of Section 32, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SE/4 (Unit O) of Section 8, Township 20 South, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

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

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

Case No. 23596

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.06-acre, more or less, spacing and proration unit comprised of Lot 2 (NW/4 NE/4 equivalent), the SW/4 NE/4, and the W/2 SE/4 of Section 5 and the W/2 E/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Mighty Pheasant 5-8 Fed Com 303H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 303H well described in the application filed by Cimarex in Case No. 23451. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp



WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted interests in the Wolfcamp formation underlying the proposed HSU.

B. Approving the **Mighty Pheasant 5-8 Fed Com 303H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **303H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

*Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.* Applicant in the above-styled cause seeks an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.06-acre, more or less, spacing and proration unit comprised of Lot 2 (NW/4 NE/4 equivalent), the SW/4 NE/4, and the W/2 SE/4 of Section 5 and the W/2 E/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Mighty Pheasant 5-8 Fed Com 303H Well**, an oil well, to be horizontally drilled from a surface location in SW/4 SE/4 (Unit O) of Section 32, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SE/4 (Unit O) of Section 8, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23597

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.09-acre, more or less, spacing and proration unit comprised of Lot 1 (NE/4 NE/4 equivalent), the SE/4 NE/4, and the E/2 SE/4 of Section 5 and the E/2 E/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Mighty Pheasant 5-8 Fed Com 304H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 304H well described in the application filed by Cimarex in Case No. 23448. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Mighty Pheasant 5-8 Fed Com 304H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23523, for the Wolfcamp formation.

3. Cimarex proposes the **Mighty Pheasant 5-8 Fed Com 304H Well**, an oil well, to be horizontally drilled from a surface location in SW/4 SE/4 (Unit O) of Section 32, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SE/4 (Unit P) of Section 8, Township 20 South, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted interests in the Wolfcamp formation underlying the proposed HSU.

B. Approving the **Mighty Pheasant 5-8 Fed Com 304H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **304H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

*Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.* Applicant in the above-styled cause seeks an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.09-acre, more or less, spacing and proration unit comprised of Lot 1 (NE/4 NE/4 equivalent), the SE/4 NE/4, and the E/2 SE/4 of Section 5 and the E/2 E/2 of Section 8, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 5 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Mighty Pheasant 5-8 Fed Com 304H Well**, an oil well, to be horizontally drilled from a surface location in SW/4 SE/4 (Unit O) of Section 32, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SE/4 (Unit P) of Section 8, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.



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

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

Case No. 23598

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.21-acre, more or less, spacing and proration unit comprised of Lot 4 (NW/4 NW/4 equivalent), the SW/4 NW/4, and the W/2 SW/4 of Section 4 and the W/2 W/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Loosey Goosey 4-9 Fed Com 301H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 301H well described in the application filed by Cimarex in Case No. 23453. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Loosey Goosey 4-9 Fed Com 301H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23512, for the Wolfcamp formation.

3. Cimarex proposes the **Loosey Goosey 4-9 Fed Com 301H Well**, an oil well, to be horizontally drilled from a surface location in the SE/4 SW/4 (Unit N) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SW/4 (Unit M) of Section 9, Township 20, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted mineral interests in the Wolfcamp formation underlying the proposed HSU;

B. Approving the **Loosey Goosey 4-9 Fed Com 301H Well** as the proper well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **301H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order from the Division pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.21-acre, more or less, horizontal spacing and proration unit comprised of Lot 4 (NW/4 NW/4 equivalent), the SW/4 NW/4, and the W/2 SW/4 of Section 4 and the W/2 W/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Loosey Goosey 4-9 Fed Com 301H Well**, an oil well, to be horizontally drilled from a surface location in the SE/4 SW/4 (Unit N) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SW/4 (Unit M) of Section 9, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23599

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.44-acre, more or less, spacing and proration unit comprised of Lot 3 (NE/4 NW/4 equivalent), the SE/4 NW/4, and the E/2 SW/4 of Section 4 and the E/2 W/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Loosey Goosey 4-9 Fed Com 302H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 302H well described in the application filed by Cimarex in Case No. 23454. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Loosey Goosey 4-9 Fed Com 302H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23513, for the Wolfcamp formation.

3. Cimarex proposes the **Loosey Goosey 4-9 Fed Com 302H Well**, an oil well, to be horizontally drilled from a surface location in the SE/4 SW/4 (Unit N) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SW/4 (Unit N) of Section 9, Township 20, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted mineral interests in the Wolfcamp formation underlying the proposed HSU;

B. Approving the **Loosey Goosey 4-9 Fed Com 302H Well** as the well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **302H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.



Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order from the Division pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.44-acre, more or less, horizontal spacing and proration unit comprised of Lot 3 (NE/4 NW/4 equivalent), the SE/4 NW/4, and the E/2 SW/4 of Section 4 and the E/2 W/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Loosey Goosey 4-9 Fed Com 302H Well**, an oil well, to be horizontally drilled from a surface location in the SE/4 SW/4 (Unit N) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SW/4 (Unit N) of Section 9, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23600

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.66-acre, more or less, spacing and proration unit comprised of Lot 2 (NW/4 NE/4 equivalent), the SW/4 NE/4, and the W/2 SE/4 of Section 4 and the W/2 E/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Loosey Goosey 4-9 Fed Com 303H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 303H well described in the application filed by Cimarex in Case No. 23455. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp

formation, based on the geology of the lands, is achieved by drilling the **Loosey Goosey 4-9 Fed Com 303H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23514, for the Wolfcamp formation.

3. Cimarex proposes the **Loosey Goosey 4-9 Fed Com 303H Well**, an oil well, to be horizontally drilled from a surface location in the SW/4 SE/4 (Unit O) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SE/4 (Unit O) of Section 9, Township 20, Range 34 East, NMPM.

4. The proposed well is orthodox in its location, and the take points and completed interval comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on July 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted mineral interests in the Wolfcamp formation underlying the proposed HSU;

B. Approving the **Loosey Goosey 4-9 Fed Com 303H Well** as the well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **303H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order from the Division pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.66-acre, more or less, horizontal spacing and proration unit comprised of Lot 2 (NW/4 NE/4 equivalent), the SW/4 NE/4, and the W/2 SE/4 of Section 4 and the W/2 E/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Loosey Goosey 4-9 Fed Com 303H Well**, an oil well, to be horizontally drilled from a surface location in the SW/4 SE/4 (Unit O) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SW/4 SE/4 (Unit O) of Section 9, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed interval will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

Case No. 23601

**APPLICATION**

Cimarex Energy Co. (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, hereby files this Application with the Oil Conservation Division (“Division”) pursuant to the provisions of NMSA 1978, Section 70-2-17, seeking an order pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.89-acre, more or less, spacing and proration unit comprised of Lot 1 (NE/4 NE/4 equivalent), the SE/4 NE/4, and the E/2 SE/4 of Section 4 and the E/2 E/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section with correction Lots.

In support of its Application, Cimarex states the following:

1. Cimarex is a working interest owner in the proposed horizontal spacing and proration unit (“HSU”) and has a right to drill a well thereon.
2. Cimarex proposes and dedicates to the HSU the **Loosey Goosey 4-9 Fed Com 304H Well**, as the initial well, to be drilled to a sufficient depth to test production and ultimately produce from the Wolfcamp formation. This well is the same 304H well described in the application filed by Cimarex in Case No. 23452. Cimarex’s geology shows that, because there are no natural barriers between formation, the hydrocarbons freely communicate between the Third Sand of the Bone Spring and the Wolfcamp, and thus, optimal development of the Wolfcamp formation, based on the



geology of the lands, is achieved by drilling the **Loosey Goosey 4-9 Fed Com 304H Well**, which will properly produce both the Wolfcamp and Third Bone Spring, as demonstrated by the history of production in this area, and the drilling of this one well will avoid the drilling of unnecessary wells into the Wolfcamp, a practice shown to be inefficient, uneconomical, and wasteful for these particular lands based on their unique geology. This application competes with the application filed by Read & Stevens, Inc., in Case No. 23515, for the Wolfcamp formation.

3. Cimarex proposes the **Loosey Goosey 4-9 Fed Com 304H Well**, an oil well, to be horizontally drilled from a surface location in the SW/4 SE/4 (Unit O) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SE/4 (Unit P) of Section 9, Township 20, Range 34 East, NMPM.

4. The proposed well is orthodox in their locations, and the take points and completed intervals comply with setback requirements under the statewide rules.

5. Cimarex's review of the land records did not reveal any overlapping units.

6. Cimarex has sought in good faith but has been unable to obtain voluntary agreement from all interest owners to participate in the drilling of the well or the commitment of their interests to the well for their development within the proposed HSU.

7. The pooling of all interests in the Wolfcamp formation within the proposed HSU will avoid the drilling of unnecessary wells, prevent waste, and protect correlative rights.

8. In order to provide for its just and fair share of the oil and gas underlying the subject lands, Cimarex requests that all uncommitted interests in this HSU be pooled and that Cimarex be designated the operator of the proposed horizontal well and HSU.

WHEREFORE, Cimarex requests that this Application be set for hearing on April 6, 2023, before an Examiner of the Oil Conservation Division, and after notice and hearing as required by law, the Division enter an order:

A. Pooling all uncommitted mineral interests in the Wolfcamp formation underlying the proposed HSU;

B. Approving the **Loosey Goosey 4-9 Fed Com 304H Well** as the well for the HSU, and recognizing, based on geological evidence to be provided by Cimarex, that the **304H Well** is properly placed and located to develop the hydrocarbons of the HSU in a manner that will avoid the drilling of unnecessary wells.

C. Designating Cimarex as operator of this HSU and the horizontal well drilled to produce from the HSU, and because of the communication between the Wolfcamp and Bone Spring, restricting to the extent prescribed by statewide rules, other operators from drilling into the Wolfcamp formation;

D. Authorizing Cimarex to recover its costs of drilling, equipping, and completing the well;

E. Approving actual operating charges and costs of supervision, to the maximum extent allowable, while drilling and after completion, together with a provision adjusting the rates pursuant to the COPAS accounting procedures;

F. To the extent necessary, approving downhole commingling, or in the alternative, allowing Cimarex to seek, if necessary, administrative approval for downhole commingling; and

G. Setting a 200% charge for the risk assumed by Cimarex in drilling and completing the well in the event a working interest owner elects not to participate in the well.

Respectfully submitted,

ABADIE & SCHILL, PC

*/s/ Darin C. Savage*

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**Attorneys for Cimarex Energy Co.**

***Application of Cimarex Energy Co. for Compulsory Pooling, Lea County, New Mexico.***

Applicant in the above-styled cause seeks an order from the Division pooling all uncommitted interests in the Wolfcamp formation, designated as an oil pool, underlying a standard 320.89-acre, more or less, horizontal spacing and proration unit comprised of Lot 1 (NE/4 NE/4 equivalent), the SE/4 NE/4, and the E/2 SE/4 of Section 4 and the E/2 E/2 of Section 9, in Township 20 South, Range 34 East, NMPM, Lea County, New Mexico. Section 4 is an irregular section containing correction lots. The proposed well to be dedicated to the horizontal spacing unit is the **Loosey Goosey 4-9 Fed Com 304H Well**, an oil well, to be horizontally drilled from a surface location in the SW/4 SE/4 (Unit O) of Section 33, Township 19 South, Range 34 East, NMPM, to a bottom hole location in the SE/4 SE/4 (Unit P) of Section 9, Township 20 South, Range 34 East, NMPM. The well will be orthodox, and the take points and completed intervals will comply with the setback requirements under the statewide Rules; also to be considered will be the cost of drilling and completing the well and the allocation of the costs thereof; actual operating costs and charges for supervision; downhole commingling, to the extent and if necessary; the designation of the Applicant as Operator of the well and unit; and a 200% charge for the risk involved in drilling and completing the well. The well and lands are located approximately 40 miles northeast of Carlsbad, New Mexico.

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

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

**Case Nos. 23594, 23595, 23596, 23597,  
23598, 23599, 23600 & 23601**

**PREHEARING STATEMENT**

Cimarex Energy Co., (“Cimarex”), OGRID No. 215099, through its undersigned attorneys, submits the following Prehearing Statement pursuant to the rules of the Oil Conservation Division (“Division”) for the above referenced Cases which are consolidated with the Case Nos. 23452-23455, and 23508 – 23523 for a contested hearing pursuant to that certain “Further Amended Pre-Hearing Order” issued on June 8, 2023. This Prehearing Statement describes the status of Cimarex’s Case Nos. 23594 - 23601, which were originally filed in response to Read & Stevens, Inc., in association with Permian Resources Operating, LLC (collectively referred to herein as “Permian Resources”) proposing to pool the Wolfcamp formation underlying Sections 5 and 8, and Sections 4 and 9, in Township 20 South, Range 34 East, NMPM, Lea County (“Subject Lands”) in Case Nos. 23512-23515 and 23520 – 23523.

**APPEARANCES**

**APPLICANT**

Cimarex Energy Co.

**ATTORNEY**

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COMPETING PARTY

Read & Stevens, Inc., in association  
with Permian Resources Operating, LLC

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**APPLICANT'S STATEMENT OF THE CASES**

Cimarex provides this Prehearing Statement to inform the Division of the current status of Case Nos. 23594, 23595, 23596 and 23597, 23598, 23599, 23600 & 23601. A little more than a month after Cimarex filed its applications to develop and pool the Bone Spring formation in the Subject Lands, Permian Resources not only filed applications for the Bone Spring but also filed applications for drilling and pooling the Wolfcamp formation in the Subject Lands in Case Nos. 23512-23515 and 23520 – 23523, and proposed to drill wells in the Upper Wolfcamp of the Subject Lands despite the fact that, based on the geological and reservoir data, those wells would drain the 3<sup>rd</sup> Bone Spring Sand and would likely result in permanent damage to the target reservoir located in the Bone Spring where the target reservoir is located.

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

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

Cimarex has further evaluated its applications in Case Nos. 23594 – 23601 as a response to the applications filed by Permian Resources in Case Nos. 23512 – 23515 and 23520 – 23523, and Cimarex has determined that the best way to develop the Subject Lands and both protect the primary reservoir of said Lands while optimizing production is to request that the Division establish a protective zone covering the Upper Wolfcamp in order to protect correlative rights and prevent waste.

As a result, Cimarex has filed a 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 (“Motion”), attached hereto as Exhibit 1, in which it has asked the Division to consider and rule on the Motion as part of the Division’s ruling in the contested hearing. Should the Division decide that Cimarex has the better development plan, then the Upper Wolfcamp would not be drilled.

**APPLICANT’S PROPOSED EVIDENCE AND WITNESS QUALIFICATIONS**

WITNESS	ESTIMATED TIME	EXHIBITS
<p>Landman: John Coffman  Qualifications: I graduated in 2018 from Texas Tech University with a bachelor’s degree in Business Administration with an emphasis on Energy Commerce. I have worked at Cimarex for approximately 4 years, and I have been working in New Mexico for 4 years. My credentials as an expert witness in petroleum land matters have been accepted by the Division and made a matter of record.</p>	Approx. 5 min	Approx. 1
<p>Geologist: Staci Meuller  Qualifications: I have a Bachelor of Science Degree in Geophysical Engineering from Colorado School of Mines, and a Master of Science Degree in Geophysics from Colorado School of Mines. I have worked on New Mexico Oil and Gas matters since July 2018. My credentials as an expert witness in geology have been accepted by the Division and made a matter of record.</p>	Approx. min	Approx. 21
<p>Reservoir Engineer: Eddie Behm  Qualifications: I attended the University of Tulsa and graduated with a bachelor’s in petroleum engineering in 2011. I have worked for Occidental, California Resources prior to working for Cimarex and have been employed as a Production and Reservoir engineer for Cimarex for the last 6 years, working in the Delaware Basin with a primary focus on Lea County, New Mexico. I have</p>	Approx. 45 minutes	Approx. 17



previously testified before the Division as an expert reservoir engineer, and my credentials have been accepted of record.

Facilities Engineer: Calvin Boyle Available for questions (15 min) Approx. 1  
Qualifications: I attended the University of Oklahoma and graduated with a bachelor's in petroleum engineering in 2016 followed by Oklahoma State University where I graduated with a Master of Business Administration in 2018. I worked for Halliburton prior to working for Cimarex Energy Co. ("Cimarex") and have been employed as a Field, Production, and Facilities engineer for Cimarex for the last 4 years, working in the Delaware Basin with a primary focus on Lea County, New Mexico. I am familiar with the subject applications filed in the above-referenced Cases and the engineering involved. I have not testified previously before the Division and am providing a one-page resume.

### **LIST OF MATERIAL FACTS NOT IN DISPUTE**

Parties are in general agreement that the Bone Spring formation underlying the Subject Lands would be productive if drilled and developed and should be developed; however, there is disagreement about whether the Upper Wolfcamp should be drilled and developed simultaneously with the Bone Spring.

### **LIST OF DISPUTED FACTS AND ISSUES**

The central issue in Cimarex's Case Nos. 23594 - 23601 and Permian Resources' competing Case Nos. 23512 – 23515 and 23520 - 23523 is whether the Upper Wolfcamp should be drilled and developed (Cimarex asserts that the drilling of the Upper Wolfcamp would result in waste and harm to correlative rights and to the target reservoir, and therefore the Upper Wolfcamp should not be drilled; while Permian Resources proposes to drill the Upper Wolfcamp). As an alternative to drilling the Upper Wolfcamp, Cimarex has filed a Motion to establish a protective buffer zone in the Upper Wolfcamp to prevent it from being drilled.

### **PROCEDURAL MATTERS**

For Cimarex's Case Nos. 23594 – 23601 and Permian Resources' Case Nos. 23512 – 23515 and 23520 – 23523, Cimarex requests that the Division review and consider the Motion (attached

hereto as Exhibit 1) that Cimarex has filed concerning the Wolfcamp formation and how best to develop the Subject Lands.

Respectfully submitted,

ABADIE & SCHILL, PC

/s/ Darin C. Savage

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Darin C. Savage

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**Attorneys for Cimarex Energy Co.**

**CERTIFICATE OF SERVICE**

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

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*Attorneys for Sandstone Properties, LLC*

*/s/ Darin C. Savage*

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Darin C. Savage

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

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

**Case Nos. 23448 – 23455**

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

**Case Nos. 23594 – 23601**

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

**Case Nos. 23508 – 23523**

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

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

**I. Factual and procedural background**

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

**EXHIBIT  
1**

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

2. As a result of its evaluation of the Subject Lands, as well as the surrounding area, Cimarex found that not only were the best reserves of oil and gas residing in the 3<sup>rd</sup> Bone Spring Sand but also that the Upper Wolfcamp reservoir under the Subject Lands and surrounding area was significantly below average in quality and potential, rendering Wolfcamp wells economically unfeasible. *See* Exhibit 1, attached hereto, showing that the consensus landing for optimal development is the 3<sup>rd</sup> Bone Spring Sands, not the Upper Wolfcamp.

3. Cimarex has also determined that there are no indications of any major geomechanical changes/frac baffles in between Cimarex's 3<sup>rd</sup> Sand target and Permian Resources' Wolfcamp Sands target, indicating that these two intervals are most likely one shared reservoir tank. Due to the absence of the baffle between the 3<sup>rd</sup> Bone Spring Sand and the Upper Wolfcamp, Cimarex has concluded that if Upper Wolfcamp wells were to be completed while drilling and developing the 3<sup>rd</sup> Bone Spring Sand, those wells would drain much of the reserves in the 3<sup>rd</sup> Bone Spring Sand, where the best reserves are located, and would likely result in permanent damage to the target reservoir in the 3<sup>rd</sup> Bone Spring Sand.

4. Thus, Cimarex limited its proposed development and applications for compulsory pooling to the Bone Spring and did not seek to pool the Upper Wolfcamp. Cimarex's analysis of the Subject Lands comports to how other operators are developing the surrounding areas that share the same three fundamental characteristics, *viz.*, excellent reserves in the 3<sup>rd</sup> Bone Spring Sand, poor quality reservoir in the Upper Wolfcamp, and the lack of a baffle between the two. *See* Exhibit 2, attached hereto, showing the overwhelming predominance of Bone Spring development

and the dearth and rarity of the Wolfcamp development.

5. A little more than a month after Cimarex filed its applications to develop and pool the Bone Spring Formation, Read & Stevens, Inc., in association with Permian Resources Operating, LLC (collectively referred to as “Permian Resources”), filed competing applications to pool the Bone Spring formation of the Subject Lands in Case Nos. 23508-23511 and 23516-23519. Permian Resources also filed applications for drilling and pooling the Wolfcamp formation in Case Nos. 23512-23515 and 23520-23523, proposing to drill eight wells in the Upper Wolfcamp despite the fact that those wells would drain the 3<sup>rd</sup> Bone Spring Sand and would likely result in permanent damage to the target reservoir located in the Bone Spring where the best reservoirs are located.

6. Given the poor quality of the Upper Wolfcamp reservoir, the lack of the baffle that would otherwise minimize drainage of the 3<sup>rd</sup> Bone Spring, the fact that additional Upper Wolfcamp wells will not increase EUR, and the recent history of developing the lands in the area that account for these facts, Permian Resources’ decision to seek to develop the Upper Wolfcamp Formation is baffling. The geological data demonstrates that expending tens of millions of dollars<sup>1</sup> drilling unnecessary wells in the Upper Wolfcamp that will not increase EUR, but instead would place a substantial financial burden on Working Interest owners, incur environmental risks of drilling additional and unnecessary wells, undermine overall production, and likely result in permanent damage to the target reservoir, creating waste of oil and gas that would be forever lost through the misguided development of the Upper Wolfcamp. See Exhibit 4

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

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

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

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

## **II. Argument**

### **A. The optimal development of the Subject Lands is to drill wells in the 3<sup>rd</sup> Bone Spring Sand and create a protective buffer zone that would prohibit the drilling of wells in the Upper Wolfcamp.**

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

10. Cimarex filed its Wolfcamp applications only as a response to Permian Resources'

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

11. Cimarex recognizes that filing its competing applications for pooling the Upper Wolfcamp based on wells drilled in 3<sup>rd</sup> Bone Spring Sand may not be the best way to protect correlative rights and counter Permian Resources' plan for the Upper Wolfcamp. Cimarex submits that the best course of action for the Division to follow, in order to ensure achieving optimal production from the rich reserves located in the 3<sup>rd</sup> Bone Spring Sand and to protect correlative rights, would be to allow the drilling of the 3<sup>rd</sup> Bone Spring Sand wells, as proposed by Cimarex, and to establish a vertical protective zone that would preclude the drilling of wells in the subpar Upper Wolfcamp. Such a protective zone would prevent drainage of the 3<sup>rd</sup> Bone Spring, thus protecting the correlative rights of the owners in the 3<sup>rd</sup> Bone Spring. In addition, the protective zone would spare the working interest owners approximately \$95 Million for wells that not only fail to increase the EUR but would also likely damage the reservoir. Cimarex has carefully analyzed the need for such a protective buffer zone and provides in Exhibit 5, attached hereto, a graphic depiction and quantification of the area and extent of the Upper Wolfcamp that needs to be protected.

12. The Division has the clear authority to fashion such a necessary solution and establish a protective zone under NMSA 1978 Section 70-2-11, which grants the Division authority "to do whatever may be reasonably necessary" to protect correlative rights, prevent waste, and prevent the drilling of unnecessary wells. The wells proposed to be drilled by Permian



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

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

**III. Conclusion:**

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

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

Respectfully submitted,

ABADIE& SCHILL, PC

*/s/ Darin C. Savage*

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**CERTIFICATE OF SERVICE**

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

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*Attorneys for Sandstone Properties, LLC*

*/s/ Darin C. Savage*

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Darin C. Savage

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

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

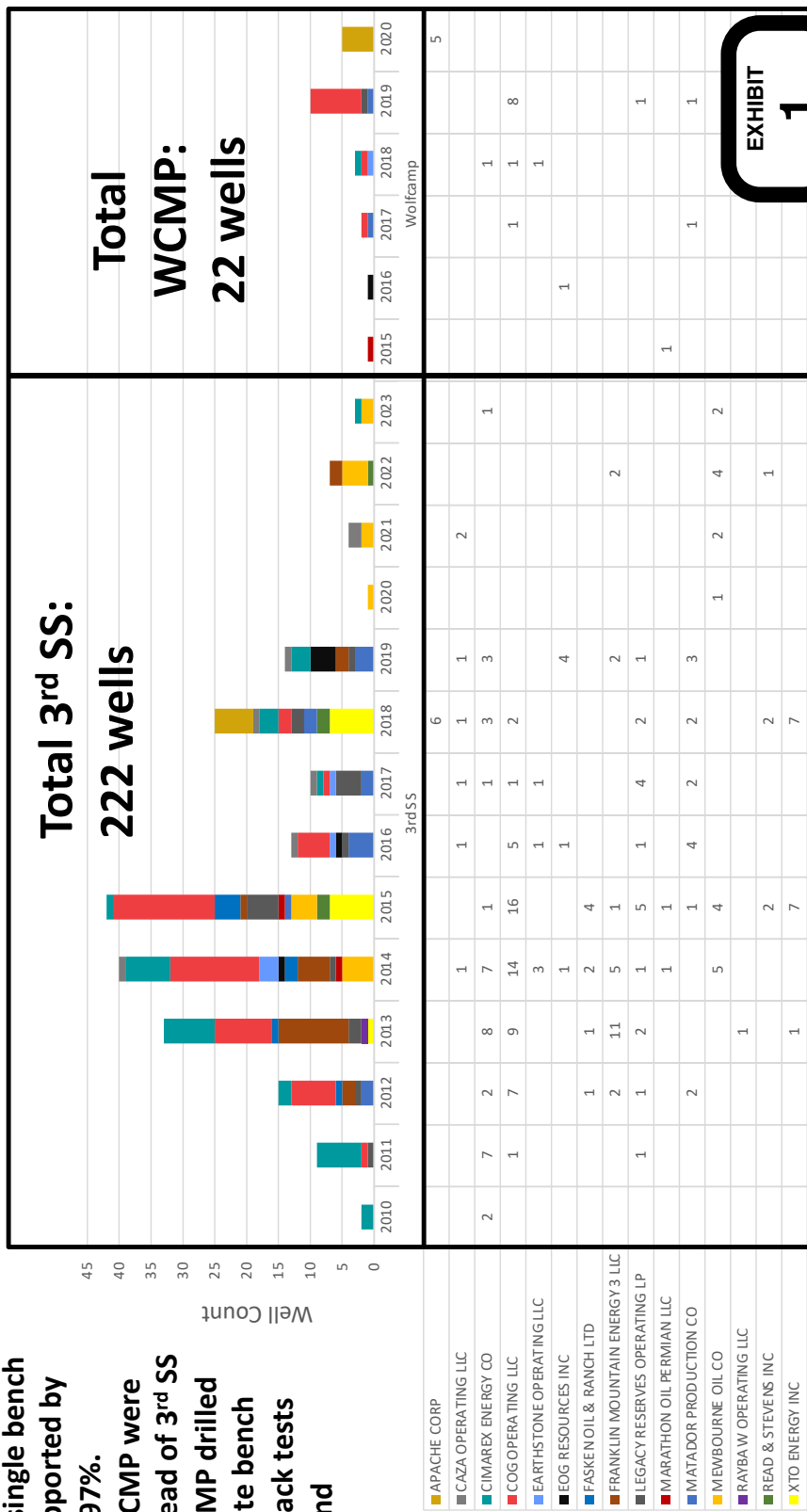


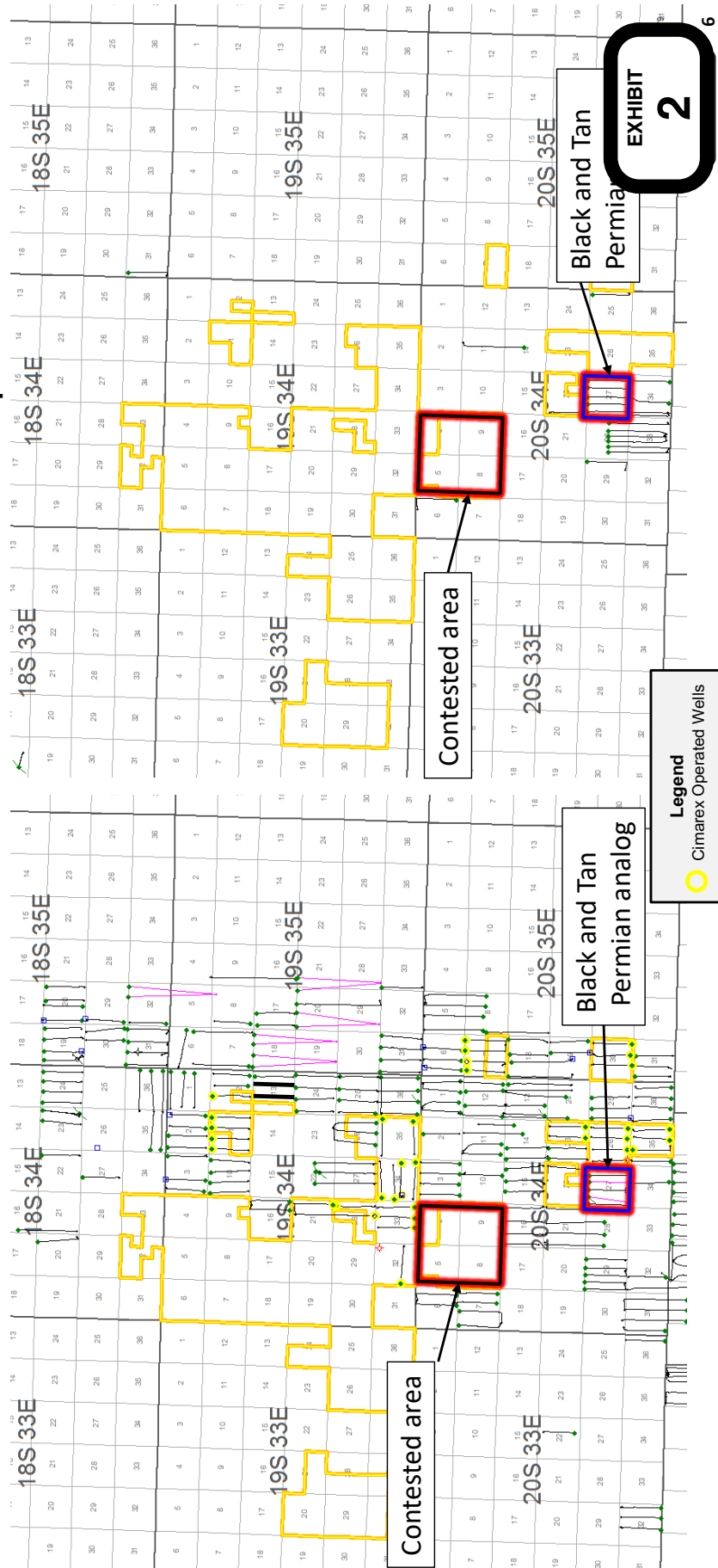
EXHIBIT  
1

**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**



**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 201H	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 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
<b>INTANGIBLE COSTS</b>				
1 Land / Legal / Regulatory	\$ 59,066	-	\$ 37,500	\$ 96,566
2 Location, Surveys & Damages	288,079	18,067	2,500	308,647
4 Freight / Transportation	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	59,805	-	265,229
7 Rental - Living Quarters	48,083	54,480	-	102,562
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, 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	-	614,033	-	614,033
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	104,223	-	-	104,223
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	-	-	-	-
<b>TOTAL INTANGIBLES &gt;</b>	<b>3,516,419</b>	<b>5,367,000</b>	<b>772,167</b>	<b>9,655,585</b>

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>TANGIBLE COSTS</b>				
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
<b>TOTAL TANGIBLES &gt;</b>	<b>1,233,109</b>	<b>0</b>	<b>989,167</b>	<b>2,222,276</b>
<b>TOTAL COSTS &gt;</b>	<b>4,749,528</b>	<b>5,367,000</b>	<b>1,761,334</b>	<b>11,877,862</b>

PREPARED BY Permian Resources Operating, LLC:

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

Permian Resources Operating, LLC APPROVAL:

Co-CEO	WHI	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:	Approval: <input type="checkbox"/> Yes <input type="checkbox"/> No
Title:		



The costs on this AFE are estimates only and may not be considered as ceilings on any specific item or the total cost of the project. Taking installation approved under the AFE may be delayed up to a year after the well has been completed. In preparing this AFE, the Participants represent and warrant that they have reviewed the information provided and each certifies that the information is true and correct to the best of their knowledge and belief and that they are not aware of any information that would cause the information to be materially false or misleading.

**Permian Resources Operating, LLC**

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

**ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE**

DATE:	2.17.2023	AFE NO.:	1
WELL NAME:	Bane 4-9 Federal Com 202H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 4, T20S-R34E	MD/TVD:	21,210' / 10,925'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian Wh:		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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6 Rental - Downhole Equipment	205,424	59,805	-	265,229
7 Rental - Living Quarters	48,083	54,480	-	102,562
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Silckline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	8,339	-	15,609
23 Mud & Chemicals	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	14,660	-	-	14,660
97 Contingency	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
<b>TOTAL INTANGIBLES &gt;</b>	<b>3,516,419</b>	<b>5,367,000</b>	<b>772,167</b>	<b>9,655,585</b>

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>TANGIBLE COSTS</b>				
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
<b>TOTAL TANGIBLES &gt;</b>	<b>1,233,109</b>	<b>0</b>	<b>989,167</b>	<b>2,222,276</b>
<b>TOTAL COSTS &gt;</b>	<b>4,749,528</b>	<b>5,367,000</b>	<b>1,761,334</b>	<b>11,877,862</b>

**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: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one)	

The costs on this AFE are estimates only and may not be identical to actual costs on any specific well or the total cost of the project. Taking installation approved under the AFE may be delayed up to a year after the well has been completed. In executing the AFE, the Participant agrees to pay its proportionate share of actual costs incurred by the other non-operating partner. In the event of a cost overrun, the Participant shall be responsible for the cost of the cost overrun. Participants shall be deemed to have approved the Participant's work.

**Permian Resources Operating, LLC**

300 N. Marienfeld 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:	Banc 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 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 AI. install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>INTANGIBLE COSTS</b>				
1 Land / Legal / Regulatory	\$ 59,066	-	37,500	\$ 96,566
2 Location, Surveys & Damages	288,099	18,067	2,500	308,667
4 Freight / Transportation	47,228	43,778	25,000	116,006
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	39,805	-	265,229
7 Rental - Living Quarters	48,083	54,480	-	102,562
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,820	-	-	753,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,935	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CTU	-	-	15,000	15,000
16 Perforating, Wireline, Silckline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CTU	-	146,484	-	146,484
20 Mud Circulation System	105,209	-	-	105,209
21 Mud Logging	17,529	-	-	17,529
22 Logging / Formation Evaluation	7,270	8,339	-	15,609
23 Mud & Chemicals	351,835	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	14,660	-	-	14,660
97 Contingency	-	21,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
<b>TOTAL INTANGIBLES &gt;</b>	<b>3,516,419</b>	<b>5,367,000</b>	<b>772,167</b>	<b>9,655,585</b>

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>TANGIBLE COSTS</b>				
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
<b>TOTAL TANGIBLES &gt;</b>	<b>1,233,109</b>	<b>0</b>	<b>989,167</b>	<b>2,222,276</b>
<b>TOTAL COSTS &gt;</b>	<b>4,749,528</b>	<b>5,367,000</b>	<b>1,761,334</b>	<b>11,877,862</b>

**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: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one)	

This AFE and the AFE are estimates only and may not be controlled as a total cost of the project. Taking installation approved under the AFE may be delayed up to a year after the well has been completed. In executing this AFE, the Participant agrees to pay the reasonable share of actual costs incurred by the operator. The operator and well user shall be bound by the terms of the well site lease operator agreement, including any other agreement executed by the well user. Participants shall be bound by the terms of the well site lease operator agreement, including any other agreement executed by the well user.



**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 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
<b>INTANGIBLE COSTS</b>				
1 Land / Legal / Regulatory	\$ 39,066	-	37,500	\$ 76,566
2 Location, Surveys & Damages	288,099	18,067	2,500	308,667
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	733,820	-	-	733,820
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	7,270	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 Hq 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	-	-	-	-
<b>TOTAL INTANGIBLES &gt;</b>	<b>3,516,419</b>	<b>5,367,000</b>	<b>772,167</b>	<b>9,655,585</b>

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>TANGIBLE COSTS</b>				
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
<b>TOTAL TANGIBLES &gt;</b>	<b>1,233,109</b>	<b>0</b>	<b>989,167</b>	<b>2,222,276</b>
<b>TOTAL COSTS &gt;</b>	<b>4,749,528</b>	<b>5,367,000</b>	<b>1,761,334</b>	<b>11,877,862</b>

**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	_____
	WH		JW		CRM
VP - Land & Legal	_____	VP - Geosciences	_____		
	BC		SO		

**NON OPERATING PARTNER APPROVAL:**

Company Name:	_____	Working Interest (%):	_____	Tax ID:	_____
Signed by:	_____	Date:	_____		
Title:	_____	Approval:	<input type="checkbox"/> Yes <input type="checkbox"/> No (mark one)		

The items on this AFE are estimates only and may not be considered as rebid or as the final cost of the project. Taking installation approval under the AFE may be delayed up to a year after the well has been completed. In reviewing this AFE, the Participants agree to pay no more than their full cost share in their land ownership. Further, each well cost under the terms of the well cost ownership agreement. Installation under other agreement for this well. Participants shall be required to add their own estimate of their own well.

**Permian Resources Operating, LLC**

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

**ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE**

DATE:	2.17.2023	AFE NO.:	1
WELL NAME:	Joker 5-8 Federal Com 201H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and initial AL install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>INTANGIBLE COSTS</b>				
1 Land / Legal / Regulatory	\$ 59,066	-	3,500	\$ 96,566
2 Location, Surveys & Damages	288,079	18,067	2,500	308,647
4 Freight / Transportation	47,528	43,778	25,000	116,306
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	-	102,563
10 Directional Drilling, Surveys	429,343	-	-	429,343
11 Drilling	755,820	-	-	755,820
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,358	725,081	-	913,439
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, C/U	-	-	15,000	15,000
16 Perforating, Wireline, Silckline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, C/U	-	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 & Disposal	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,751	-	254,855
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drig & Completion Overhead	10,423	-	-	10,423
35 Labor	153,358	69,489	101,667	324,514
54 Proppant	-	1,255,227	-	1,255,227
95 Insurance	14,680	-	-	14,680
97 Contingency	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
<b>TOTAL INTANGIBLES &gt;</b>	<b>3,516,419</b>	<b>5,367,000</b>	<b>772,167</b>	<b>9,655,585</b>

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>TANGIBLE COSTS</b>				
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	-	-	45,333	45,333
83 Haze Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	50,000	50,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
<b>TOTAL TANGIBLES &gt;</b>	<b>1,233,109</b>	<b>0</b>	<b>989,167</b>	<b>2,222,276</b>
<b>TOTAL COSTS &gt;</b>	<b>4,749,528</b>	<b>5,367,000</b>	<b>1,761,334</b>	<b>11,877,862</b>

**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: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one)	

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

**Permian Resources Operating, LLC**

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

**ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE**

DATE:	2.17.2023	AFE NO.:	1
WELL NAME:	Joker 5-8 Federal Com 202H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T205-R34E	MD/TVD:	21,211' / 10,926'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WL:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>INTANGIBLE COSTS</b>				
1 Land/ Legal/ Regulatory	\$ 39,066	-	3,500	\$ 96,566
2 Location, Surveys & Damages	288,079	18,067	2,900	308,647
4 Freight/ Transportation	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	59,805	-	265,229
7 Rental - Living Quarters	48,083	34,480	-	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	186,353	725,061	-	913,996
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CIU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CIU	-	146,484	-	146,484
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 & Dlop	-	121,606	130,000	271,606
28 Mud/ Wastewater Disposal	193,104	61,751	-	254,254
30 Rig Supervision/ Engineering	121,196	133,420	21,667	276,283
32 Drig & Completion Overhead	10,423	-	-	10,423
35 Labor	133,328	69,489	101,667	304,484
54 Proppant	-	1,259,227	-	1,259,227
95 Insurance	14,660	-	-	14,660
97 Contingency	-	24,421	3,833	28,254
99 Plugging & Abandonment	-	-	-	-
<b>TOTAL INTANGIBLES &gt;</b>	<b>3,516,419</b>	<b>5,367,000</b>	<b>772,167</b>	<b>9,655,585</b>

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>TANGIBLE COSTS</b>				
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	147,922	-	20,000	167,922
68 Tanks	-	-	43,833	43,833
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	-	-	30,000	30,000
85 Communications/ SCADA	-	-	36,667	36,667
86 Instrumentation/ Safety	-	-	833	833
<b>TOTAL TANGIBLES &gt;</b>	<b>1,233,109</b>	<b>0</b>	<b>989,167</b>	<b>2,222,276</b>
<b>TOTAL COSTS &gt;</b>	<b>4,749,528</b>	<b>5,367,000</b>	<b>1,761,334</b>	<b>11,877,862</b>

**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	BC	VP - Geosciences	SO		

**NON OPERATING PARTNER APPROVAL:**

Company Name:	Working Interest (%):	Tax ID:
Signed by:	Date:	
Title:	Approval: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one)	

This cost estimate is for informational purposes only and does not constitute an offer or a contract. It is subject to change without notice. The Operator shall be responsible for obtaining all necessary permits, licenses, and approvals from the appropriate regulatory agencies. The Operator shall be responsible for obtaining all necessary permits, licenses, and approvals from the appropriate regulatory agencies. The Operator shall be responsible for obtaining all necessary permits, licenses, and approvals from the appropriate regulatory agencies.

**Permian Resources Operating, LLC**

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

**ESTIMATE OF COSTS AND AUTHORIZATION FOR EXPENDITURE**

DATE:	2.17.2023	AFE NO.:	1
WELL NAME:	Joker 5-8 Federal Com 203H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T20S-R34E	MD/TVD:	21,191' / 10,906'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian Well		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>INTANGIBLE COSTS</b>				
1 Land/ Legal/ Regulatory	\$ 59,066	-	37,500	\$ 96,566
2 Location, Surveys & Damages	288,079	18,067	2,500	308,647
4 Freight / Transportation	47,628	43,778	25,000	116,406
5 Rental - Surface Equipment	124,327	215,417	105,000	444,744
6 Rental - Downhole Equipment	205,424	59,805	-	265,229
7 Rental - Living Quarters	48,083	54,480	-	102,563
10 Directional Drilling, Surveys	429,543	-	-	429,543
11 Drilling	753,807	-	-	753,807
12 Drill Bits	100,176	-	-	100,176
13 Fuel & Power	188,355	725,061	-	913,416
14 Cementing & Float Equip	243,296	-	-	243,296
15 Completion Unit, Swab, CIU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
18 Completion Unit, Swab, CIU	-	146,484	-	146,484
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 & Dlop	-	121,606	150,000	271,606
28 Mud / Wastewater Disposal	193,104	61,151	-	254,255
30 Rig Supervision / Engineering	121,196	133,420	21,667	276,283
32 Drig & Completion Overhead	10,943	-	-	10,943
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	-	-	-	-
<b>TOTAL INTANGIBLES &gt;</b>	<b>3,516,419</b>	<b>5,367,000</b>	<b>772,167</b>	<b>9,655,585</b>

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
<b>TANGIBLE COSTS</b>				
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	-	-	140,600	140,600
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	-	-	45,333	45,333
83 Flare Stack	-	-	16,667	16,667
84 Electrical / Grounding	-	-	30,000	30,000
85 Communications / SCADA	-	-	36,667	36,667
86 Instrumentation / Safety	-	-	833	833
<b>TOTAL TANGIBLES &gt;</b>	<b>1,233,109</b>	<b>0</b>	<b>989,167</b>	<b>2,222,276</b>
<b>TOTAL COSTS &gt;</b>	<b>4,749,528</b>	<b>5,367,000</b>	<b>1,761,334</b>	<b>11,877,862</b>

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	BC	VP - Geosciences	SO		

NON OPERATING PARTNER APPROVAL:

Company Name:	Working Interest (%):	Tax ID:
Signed by:	Date:	
Title:	Approval: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one)	

The costs on this AFE are estimates only and may not be considered as budgets on any specific item or the total cost of the project. Taking finalization 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, including legal, creative, regulatory, findings and well costs under the terms of the applicable joint operating agreement, regulatory order or other agreement covering this well. Participants shall be covered by and hold indemnity for the Operator's well and general liability insurance unless participant provides Operator a certificate evidencing its own insurance in an amount acceptable to the Operator by the date of sign.

**Permian Resources Operating, LLC**

300 N. Mariefeld 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 204H	FIELD:	Tonto; Wolfcamp
LOCATION:	Section 5, T205-R34E	MD/TVD:	21,181' / 10,896'
COUNTY/STATE:	Lea County, New Mexico	LATERAL LENGTH:	10,000'
Permian WI:		DRILLING DAYS:	19.6
GEOLOGIC TARGET:	WCXY	COMPLETION DAYS:	19
REMARKS:	Drill a horizontal WCXY well and complete with 44 stages. AFE includes drilling, completions, flowback and Initial AL install cost		

	DRILLING COSTS	COMPLETION COSTS	PRODUCTION COSTS	TOTAL COSTS
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14 Cementing & Hoist Equip	243,296	-	-	243,296
15 Completion Unit, Swab, L'IU	-	-	15,000	15,000
16 Perforating, Wireline, Slickline	-	393,136	-	393,136
17 High Pressure Pump Truck	-	123,274	-	123,274
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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	147,322	-	20,000	167,322
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
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84 Electrical / Grounding	-	-	30,000	30,000
85 Communications / SCADA	-	-	36,667	36,667
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PREPARED BY Permian Resources Operating, LLC:

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

Permian Resources Operating, LLC APPROVAL:

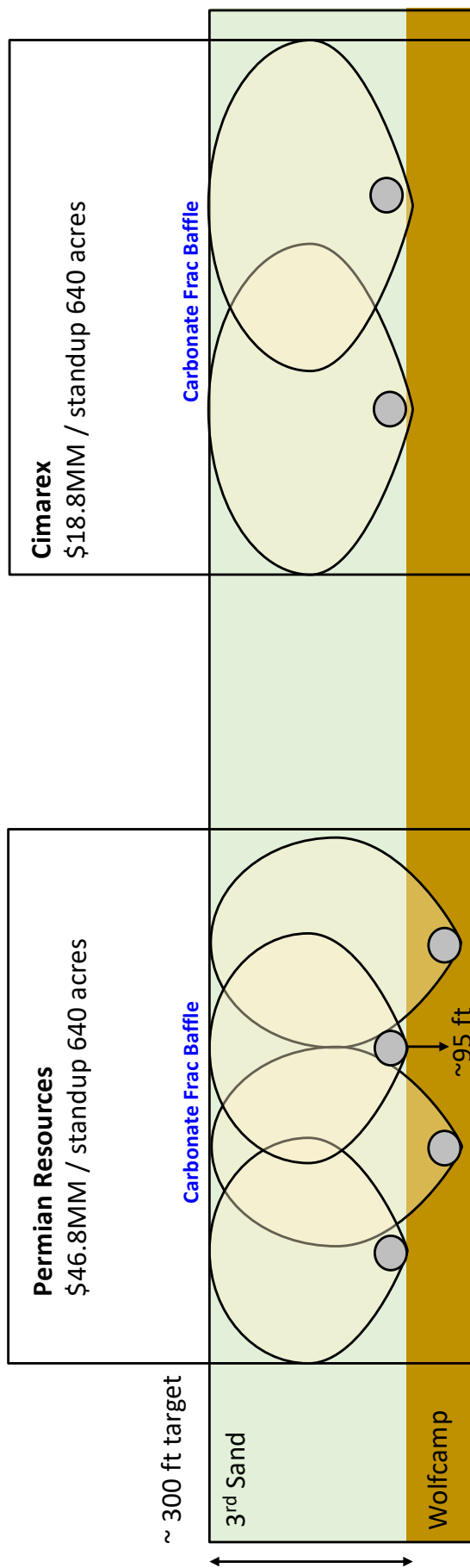
Co-CEO	WH	Co-CEO	JW	VP - Operations	CRM
VP - Land & Legal	BC	VP - Geosciences	SO		

NON OPERATING PARTNER APPROVAL:

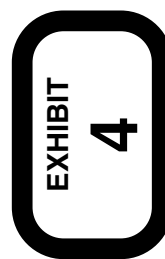
Company Name:	Working Interest (%):	Tax ID:
Signed by:	Date:	
Title:	Approval: <input type="checkbox"/> Yes <input type="checkbox"/> No (mark one)	

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

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



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



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

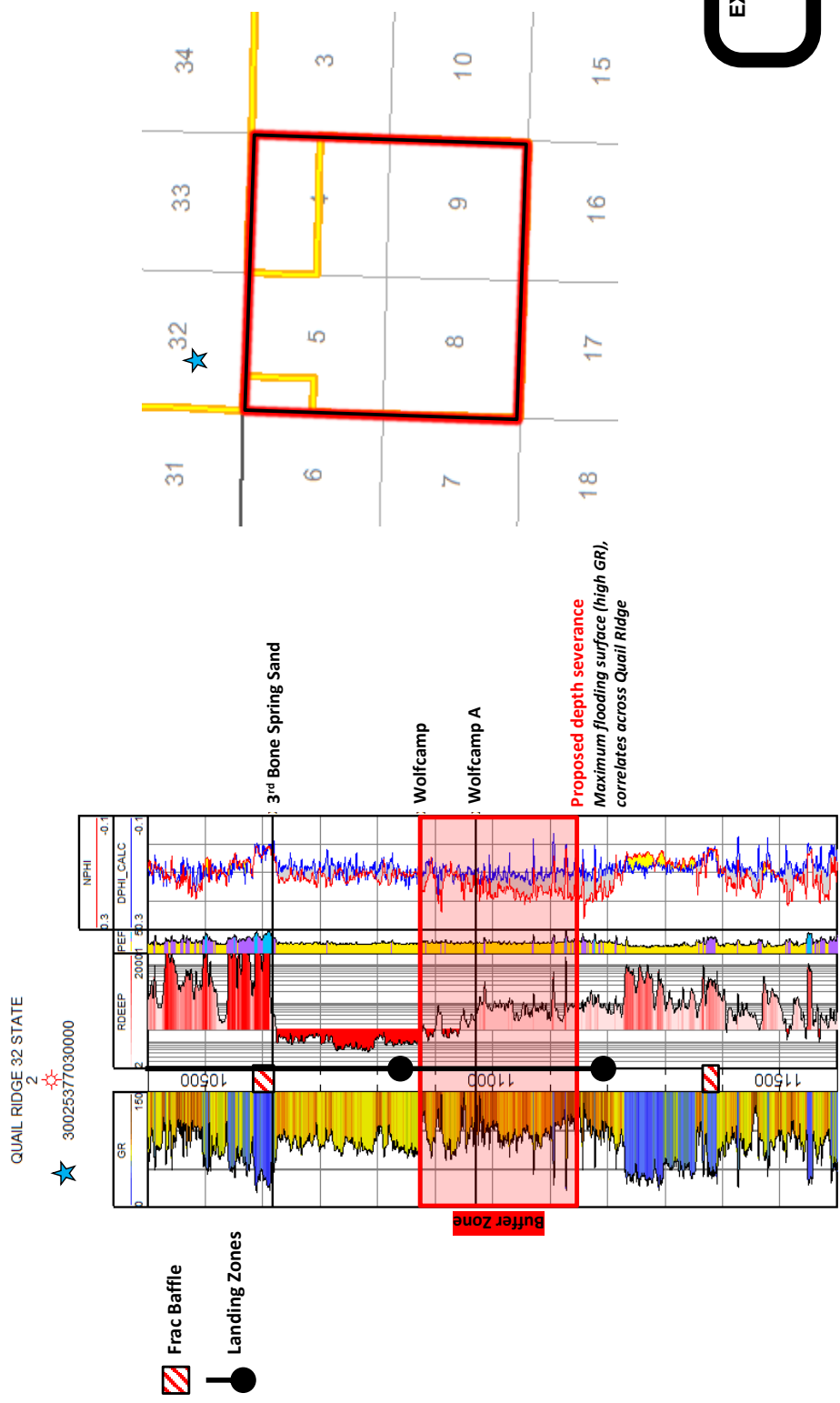


EXHIBIT  
5

## **TAB 2**

Case Nos. 23594-23601

Exhibit A: Self-Affirmed Statement of John Coffman Landman



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

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

**Case Nos. 23594, 23595, 23596, 23597,  
23598, 23599, 23600, & 23601**

**SELF-AFFIRMED STATEMENT OF JOHN COFFMAN**

I, being duly sworn on oath, state the following:

1. I am over the age of eighteen years and have the capacity to execute this Self-Affirmed Statement, which is based on my personal knowledge.
2. I am employed as a Landman with Coterra Energy, Inc., and its subsidiary Cimarex Energy Co. (“Cimarex”), the applicant in this case, and I am familiar with the subject application and the lands involved.
3. I graduated in 2018 from Texas Tech University with a bachelor’s degree in Business Administration with an emphasis on Energy Commerce. I have worked at Cimarex for approximately 4 years, and I have been working in New Mexico for 5 years. My credentials as an expert witness in petroleum land matters have been accepted by the New Mexico Oil Conservation Division (“Division”) and made a matter of record.
4. This Statement concerns the status of Cimarex’s Case Nos. 23594 - 23601, which were originally filed in response to Read & Stevens, Inc., in association with Permian Resources Operating, LLC (collectively referred to herein as “Permian Resources”) proposing to pool the Wolfcamp formation underlying Sections 5 and 8, and Sections 4 and 9, in Township 20 South,



Range 34 East, NMPM, Lea County (“Subject Lands”) in Case Nos. 23512-23515 and 23520 – 23523.

5. A little over a month after Cimarex filed its applications to develop and pool the Bone Spring formation in the Subject Lands, Permian Resources not only filed competing applications for the Bone Spring but also -- unexpectedly and surprisingly -- filed applications for drilling and pooling Wolfcamp formation in the Subject Lands in Case Nos. 23512-23515 and 23520 – 23523, proposing to drill wells in the Upper Wolfcamp of the Subject Lands despite the fact that, based on the geological and reservoir data, those wells would drain the 3<sup>rd</sup> Bone Spring Sand, would not contribute or add to the overall EUR, would incur excessive costs, and would likely result in permanent damage to the target reservoir located in the Bone Spring where the best reservoirs are located.

6. Permian Resources’ decision to propose to develop the Upper Wolfcamp created a dilemma for Cimarex, as we understood, based on clear geological and reservoir data, that the Upper Wolfcamp should not be developed in the Subject Lands, but also, we 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.

7. As a result, Cimarex drafted competing pooling applications for the Wolfcamp in which we explained that the best way to develop the target reservoir is by drilling wells in the 3<sup>rd</sup> Bone Springs Sands, the same wells proposed by Cimarex’s Bone Spring applications, and prohibit the drilling of wells in Upper Wolfcamp to prevent drainage from and damage to the target reservoir. Cimarex filed its Wolfcamp applications in Case Nos. 23594 – 23601, in which it dedicated the Wolfcamp units exclusively to wells drilled in the 3<sup>rd</sup> Bone Spring Sands, and not in

the Upper Wolfcamp, in order to preserve the Upper Wolfcamp from being drilled and thereby protect the 3<sup>rd</sup> Bone Spring Sand from drainage and damage.

8. Cimarex has further evaluated its applications in Case Nos. 23594 – 23601 as a response to the applications filed by Permian Resources in Case Nos. 23512 – 23515 and 23520 – 23523, and Cimarex has determined that the best way to develop the Subject Lands and protect the primary reservoir of said Lands while optimizing production is to request that the Division establish a protective zone covering the Upper Wolfcamp in order to protect correlative rights and prevent waste.

9. As a result, Cimarex has filed a 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 in which it has asked the Division to consider and rule on the Motion as part of the contested hearing process.

10. Cimarex respectfully submits that the best way to optimize production of the Subject Lands, prevent waste, protect correlative rights, and avoid the unnecessary and risky drilling of numerous and very expensive additional wells is to drill and pool the Bone Spring formation underlying the Subject Lands, including the 3<sup>rd</sup> Bone Spring Sand, and establish a protective buffer zone that prohibits drilling the Upper Wolfcamp.

11. The geology and engineering exhibits provided herein, which describe and analyze the Wolfcamp formation, support Cimarex's approach that only the Bone Spring should be drilled and developed and not the Upper Wolfcamp.

*[Signature page follows]*

*Signature page of Self-Affirmed Statement of John Coffman:*

I understand that this Self-Affirmed Statement will be used as written testimony before the Division in Case Nos. 23594 – 23601 and affirm that my testimony herein is true and correct, to the best of my knowledge and belief and made under penalty of perjury under the laws of the State of New Mexico.

  
John Coffman

7/12/23  
Date Signed

## TAB 3

Case Nos. 23594-23601

- Exhibit B: Self-Affirmed Statement of Staci Mueller, Geologist
- Exhibit B-1: Locator Map & Stress Direction
- Exhibit B-2: Permit Status
- Exhibit B-3: Gun Barrel View
- Exhibit B-4: Development Plan Comparison
- Exhibit B-5: Subsea Structure Map
- Exhibit B-6: 3<sup>rd</sup> Bone Spring Isopach Map
- Exhibit B-7: Structural Cross Section
- Exhibit B-8: 3<sup>rd</sup> Bone Spring Producers vs. all Wolfcamp Producers
- Exhibit B-9: All 3<sup>rd</sup> Bone Spring and Wolfcamp Producers
- Exhibit B-10: Comparing 3<sup>rd</sup> Sand to Wolfcamp Reservoir (SoPhiH)
- Exhibit B-11: 2<sup>nd</sup> Bone Spring Structure Map
- Exhibit B-12: 2<sup>nd</sup> Bone Spring Sand Isopach
- Exhibit B-13: 2<sup>nd</sup> Bone Spring Sand Cross Section
- Exhibit B-14: 2<sup>nd</sup> Bone Spring Sand vs. 3<sup>rd</sup> Bone Spring Carbonate Producers
- Exhibit B-15: PhilH L 2<sup>nd</sup> Sand vs. 3<sup>rd</sup> Carbonate
- Exhibit B-16: 1<sup>st</sup> Bone Spring Sand Structure
- Exhibit B-17: 1<sup>st</sup> Bone Spring Sand Isopach
- Exhibit B-18: 1<sup>st</sup> Bone Spring Structural Cross Section
- Exhibit B-19: Wolfcamp Structure Map (Subsea TVD)
- Exhibit B-20: Wolfcamp XY Isopach
- Exhibit B-21: Wolfcamp XY West to East Cross Section

**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 – 23451  
(Mighty Pheasant; Bone Spring)**

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

**Case Nos. 23594 – 23597  
(Mighty Pheasant; Wolfcamp)**

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

**Case Nos. 23452 – 23455  
(Loosey Goosey; Bone Spring)**

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

**Case Nos. 23598 – 23601  
(Loosey Goosey; Wolfcamp)**

**SELF-AFFIRMED STATEMENT OF STACI MUELLER**

I, being duly sworn on oath, state the following:

1. I am over the age of 18, and I have personal knowledge of the matters stated herein.
2. I am employed as a petroleum geologist for Cimarex Energy Co. (“Cimarex”), and I am familiar with the subject application and the geology involved.
3. This testimony is submitted in connection with the filing by Cimarex in the above-referenced compulsory pooling application pursuant to 19.15.4.12.A(1) NMAC.



4. I have testified previously by affidavit before the Oil Conservation Division (“Division”) as an expert petroleum geologist; my credentials have been made a matter of record, and I have been qualified as an expert by the Division.
  - a. I have a Bachelor of Science Degree in Geophysical Engineering from Colorado School of Mines, and a Master of Science Degree in Geophysics from Colorado School of Mines.
  - b. I have worked on New Mexico Oil and Gas matters since July 2018.
5. Cimarex is an established operator in the Quail Ridge area, with 35 horizontal wells drilled within the basal 3<sup>rd</sup> Bone Spring Sand starting in 2010 through 2022. In most of the 3<sup>rd</sup> Sand developments, Triple Combo logs were taken to further the reservoir characterization of both the Bone Spring and Wolfcamp formations. From these extensive mapping efforts along with offset production analyses, Cimarex has verified that the 3<sup>rd</sup> Sand is the most economic target at the Mighty Pheasant and Loosey Goosey proposed development.
6. **Exhibit B-1** shows a map made by Jens-Erik Lund Snee and Mark D. Zoback from Stanford University, which depicts the maximum horizontal stress direction throughout the Delaware and Midland Basins. The map on the right is a zoomed in portion of the regional map (red outline), where the blue lines represent the digitized version of the same stress directions. Based on the regional trend observed by Lund Snee and Zoback, the estimated stress direction at Mighty Pheasant and Loosey Goosey is approximately N70E, which means the favorable well orientation is north-south instead of east-west. Both Cimarex and Permian Resources plan to drill in the north-south orientation.
7. **Exhibit B-2** is a table summarizing the permit status for the Mighty Pheasant and Loosey Goosey developments. Highlighted in yellow are the wells that Cimarex has submitted to the BLM,

and each well has “AFMSS-Accepted” noted to show that these wells are high enough on Cimarex’s priority list for the BLM to be currently working on them. Ten permits were submitted between February and March 2022 for a 3<sup>rd</sup> Bone Spring Sand development (tier 1 target in area) plus a 1<sup>st</sup> Sand or 2<sup>nd</sup> Sand well to de-risk the sections in more highly channelized reservoirs.

8. **Exhibit B-3** is a gun barrel view of Cimarex’s development plan across both Mighty Pheasant (Sections 5 & 8) and Loosey Goosey (Sections 4 & 9). Cimarex plans to develop the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Bone Spring Sands at 4 wells per section spacing. The 1<sup>st</sup> Sand target is the high porosity, clean sand in the upper half of the interval. The 2<sup>nd</sup> Sand target is the basal siltstone/sandstone interval, and the 3<sup>rd</sup> Sand target is the basal clean sand lobe, which is also the established target across several townships.

9. **Exhibit B-4** is a gun barrel view of Cimarex’s plan (left side) versus Permian Resources (right side). Permian Resources plans to include 3 additional landing zones in their full section development: the Upper 2<sup>nd</sup> Bone Spring Sand, the 3<sup>rd</sup> Carbonate, and the Wolfcamp XY Sands. This is a risky development scenario, because the 3<sup>rd</sup> Sand & Wolfcamp XY vertical spacing is about 95 ft, which is not considered a true stagger and subsequently treated as a flat development. Therefore, Permian Resource plans to develop the 3<sup>rd</sup> Sand & Wolfcamp XY combined reservoir tank at 8 wells per section, which is over-spaced for this area, where almost every operator has developed the 3<sup>rd</sup> Sand with 4 wells per section. Permian Resources’ 3<sup>rd</sup> Carbonate target is approximately 135 ft vertical distance from their proposed Lower 2<sup>nd</sup> Sand target, which is also very tight vertical spacing when there is no frac baffle in between (no tight carbonates). The Lower 2<sup>nd</sup> Sand is the established target across several townships, while there has only been one well landed in the 3<sup>rd</sup> Carbonate (with no 2<sup>nd</sup> Sand above). The Upper 2<sup>nd</sup> Sand is a target that Cimarex has investigated and determined to be too risky to drill before collecting data.



10. **Exhibit B-5** is a structure map (Subsea TVD) of the top of the Wolfcamp, which is about 50 ft below the 3<sup>rd</sup> Bone Spring Sand Target, as noted by the type log located at the blue star. The contour interval is 100 ft, well control points are displayed, and structure is dipping to the south. From the first take point to the last take point of the Mighty Pheasant and Loosey Goosey wells (located within black and red box), there is approximately 100 ft of relief.

11. **Exhibit B-6** is an isopach map of the 3<sup>rd</sup> Bone Spring Sand, as noted by the type log located at the blue star. The contour interval is 20 ft, well control points are displayed, and the 3<sup>rd</sup> Sand is consistently between 260-280 ft at the Mighty Pheasant and Loosey Goosey development (located within black and red box).

12. **Exhibit B-7** is a structural cross section from west to east on the northern end of the Mighty Pheasant and Loosey Goosey sections. Gamma Ray is displayed in the first log track, on a scale from 0 to 150 API, shaded to the right with blue representing low Gamma Ray, brown representing high Gamma Ray, and yellow in between. The second track is deep resistivity (RDEEP), on a scale from 2 to 2000 Ohms, with RDEEP less than 20 Ohms shaded solid red to represent the Bone Spring Sand reservoirs. The third track is the photoelectric log (PEF) which is shaded blue and purple for higher values and yellow for lower values. The fourth track is neutron and density porosity (NPHI and DPHI). NPHI is shown in red, while DPHI is blue, and when DPHI crosses to the left of NPHI, the space in between the two curves is shaded yellow. Otherwise, it is shaded grey. The basal 3<sup>rd</sup> Sand target is often characterized by the yellow crossover shading in the NPHI and DPHI track, Gamma Ray around 50-70 API, and RDEEP below 20 Ohms. Cimarex's target is the standard basal 3<sup>rd</sup> Bone Spring Sand target across the area (a few townships), which is shown as a green stick in all three logs. Frac baffles are shown in red and white striped boxes within the depth track, and there are only a couple frac baffles present within the 3<sup>rd</sup> Bone Spring Carbonate.

These baffles are characterized by low Gamma Ray <50 API, indicating carbonate, along with high resistivity, and low neutron and density porosities (0-4%). There are no indications of any major geomechanical changes/frac baffles in between Cimarex's 3<sup>rd</sup> Sand target and Permian Resources' Wolfcamp Sands target, indicating that these two intervals are most likely one shared reservoir tank.

13. **Exhibit B-8** is showing a map with all the producing 3<sup>rd</sup> Bone Spring Sand wells across almost three townships (left), versus all of the Wolfcamp producers across the area (right). This Exhibit highlights the fact that the 3<sup>rd</sup> Sand is the established target in the area surrounding the Mighty Pheasant and Loosey Goosey sections (black and red box), while there have only been two Wolfcamp developments plus some parent well tests. Cimarex is also an established operator in this area, with 36 wells drilled including a Wolfcamp test.

14. **Exhibit B-9** shows all of the 3<sup>rd</sup> Bone Spring Sand producing wells with blue diamonds, and all of the Wolfcamp Sands producing wells with orange diamonds. Mighty Pheasant and Loosey Goosey are located within the black and red box which lies among almost all 3<sup>rd</sup> Sand wells. There are a couple of Wolfcamp development tests two miles to the south, but the majority of Wolfcamp and 3<sup>rd</sup> Sand co-development occurs 3 townships to the south, where the total 3<sup>rd</sup> Sand and Wolfcamp Sands reservoir tank is much thicker and deeper into the basin.

15. **Exhibit B-10** shows the PhiH (porosity\*height) of the 3<sup>rd</sup> Bone Spring Sand (left) versus the Wolfcamp X and Y Sands (right) as shown by the type log located at the blue star. PhiH is one of the most common reservoir maps to identify ideal target areas within the Bone Spring Sands because it represents total pore space, and more pore space means more room for hydrocarbon storage. Both maps have the same color scale, with a contour interval of 2 pore-ft. The Mighty Pheasant and Loosey Goosey sections are shown in the black and red box, and the well control

points are displayed, along with the values of the closest control points to the subject development. Higher PhiH values are indicated in yellow and red, while lower values are shown in blue. The average PhiH within the 3<sup>rd</sup> Sand, based on the closest control points, is 26.75 pore-ft. While the average PhiH within the Wolfcamp X and Y Sands is 10 pore-ft, which means that the 3<sup>rd</sup> Sand is at least 72.8% of the total reservoir, while the Wolfcamp Sands are 27.2% of the total reservoir. However, because there are no frac baffles separating the 3<sup>rd</sup> Sand and Wolfcamp Sands, and because the two Permian Resource targets would have about 95 ft of vertical separation, their Wolfcamp wells would drain a significant portion of the 3<sup>rd</sup> Sand reservoir that the four 3<sup>rd</sup> Sand wells would already be targeting.

16. **Exhibit B-11** is a structure map (Subsea TVD) of the top of the 3<sup>rd</sup> Bone Spring Carbonate, which is about 40 ft below the 2<sup>nd</sup> Bone Spring Sand Target, as noted by the type log located at the blue star. The contour interval is 100 ft, well control points are displayed, and structure is dipping to the south. From the first take point to the last take point of the Mighty Pheasant and Loosey Goosey wells (located within black and red box), there is approximately 200 ft of relief on the eastern edge of the proposed development, and about 100 ft of relief on the western edge.

17. **Exhibit B-12** is an isopach map of the 2<sup>nd</sup> Bone Spring Sand, as noted by the type log located at the blue star. The contour interval is 20 ft, well control points are displayed, and the 2<sup>nd</sup> Sand is consistently between 420-440 ft at the Mighty Pheasant and Loosey Goosey development (located within black and red box).

18. **Exhibit B-13** is a structural cross section from west to east on the northern end of the Mighty Pheasant and Loosey Goosey sections. Gamma Ray is displayed in the first log track, on a scale from 0 to 150 API, shaded to the right with blue representing low Gamma Ray, brown representing high Gamma Ray, and yellow in between. The second track is deep resistivity

(RDEEP), on a scale from 2 to 2000 Ohms, with RDEEP less than 20 Ohms shaded solid red to represent the Bone Spring Sand reservoirs. The third track is the photoelectric log (PEF) which is shaded blue and purple for higher values and yellow for lower values. The fourth track is neutron and density porosity (NPHI and DPHI). NPHI is shown in red, while DPHI is blue, and when DPHI crosses to the left of NPHI, the space in between the two curves is shaded yellow. Otherwise, it is shaded grey. The Lower 2<sup>nd</sup> Sand target is often characterized by the yellow crossover shading in the NPHI and DPHI track, Gamma Ray around 50-70 API, and RDEEP below 200 Ohms (not as low as basal 3<sup>rd</sup> Sand target). Cimarex's target is the standard Lower 2<sup>nd</sup> Bone Spring Sand target across the area (a few townships), which is shown as a green stick in all three logs. Frac baffles are shown in red and white striped boxes within the depth track, and there are only a couple frac baffles present within the 2<sup>nd</sup> Bone Spring Carbonate and in the middle of the 2<sup>nd</sup> Sand. These baffles are characterized by low Gamma Ray <50 API, indicating carbonate, along with high resistivity, and low neutron and density porosities (0-4%). These frac baffles within the 2<sup>nd</sup> Sand, plus the vertical distance of approximately 400 ft, indicate that there may be another target within the Upper 2<sup>nd</sup> Sand (similar log characteristics as the Lower Sand target). However, this would be a several mile step-out test, so Cimarex is planning advanced logging/data collection through this interval to de-risk it while drilling the 3<sup>rd</sup> Sand wells.

19. **Exhibit B-14** is showing a map with all the producing Lower 2<sup>nd</sup> Bone Spring Sand wells across almost nine townships (left), versus all of the 3<sup>rd</sup> Bone Spring Carbonate producers across the area (right). This Exhibit highlights the fact that the Lower 2<sup>nd</sup> Sand is the established target in the area surrounding the Mighty Pheasant and Loosey Goosey sections (black and red box), while there has only been one well landed in the 3<sup>rd</sup> Carbonate, with no 2<sup>nd</sup> Sand development above.

20. **Exhibit B-15** shows the PhiH (porosity\*height) of the 2<sup>nd</sup> Bone Spring Sand (left) versus the 3<sup>rd</sup> Bone Spring Carbonate (right) as shown by the type log located at the blue star. PhiH is one of the most common reservoir maps to identify ideal target areas within the Bone Spring Sands because it represents total pore space, and more pore space means more room for hydrocarbon storage. Both maps have the same color scale, with a contour interval of 2 pore-ft. The Mighty Pheasant and Loosey Goosey sections are shown in the black and red box, and the well control points are displayed. Higher PhiH values are indicated in yellow and red, while lower values are shown in blue. The average PhiH within the 2<sup>nd</sup> Sand, based on the closest control points, is 30 pore-ft. While the average PhiH within the 3<sup>rd</sup> Carbonate is 20 pore-ft, which means that the 2<sup>nd</sup> Sand is at least 60% of the total reservoir, while the 3<sup>rd</sup> Carbonate is 40% of the total reservoir. However, because there are no frac baffles separating the 2<sup>nd</sup> Sand and 3<sup>rd</sup> Carbonate, and because the two Permian Resource targets would have about 135 ft of vertical separation, their 3<sup>rd</sup> Carbonate wells would drain a significant portion of the 2<sup>nd</sup> Sand reservoir that the four 2<sup>nd</sup> Sand wells would already be targeting.

21. **Exhibit B-16** is a structure map (Subsea TVD) of the top of the 1<sup>st</sup> Bone Spring Sand, which is about 40 ft above the 1<sup>st</sup> Bone Spring Sand Target, as noted by the type log located at the blue star. The contour interval is 100 ft, well control points are displayed, and structure is dipping to the south. From the first take point to the last take point of the Mighty Pheasant and Loosey Goosey wells (located within black and red box), there is approximately 85 ft of relief.

22. **Exhibit B-17** is an isopach map of the 1<sup>st</sup> Bone Spring Sand, as noted by the type log located at the blue star. The contour interval is 20 ft, well control points are displayed, and the 1<sup>st</sup> Sand is consistently between 280-300 ft at the Mighty Pheasant and Loosey Goosey development (located within black and red box).

23. **Exhibit B-18** is a structural cross section from west to east on the northern end of the Mighty Pheasant and Loosey Goosey sections. Gamma Ray is displayed in the first log track, on a scale from 0 to 150 API, shaded to the right with blue representing low Gamma Ray, brown representing high Gamma Ray, and yellow in between. The second track is deep resistivity (RDEEP), on a scale from 2 to 2000 Ohms, with RDEEP less than 20 Ohms shaded solid red to represent the Bone Spring Sand reservoirs. The third track is the photoelectric log (PEF) which is shaded blue and purple for higher values and yellow for lower values. The fourth track is neutron and density porosity (NPHI and DPHI). NPHI is shown in red, while DPHI is blue, and when DPHI crosses to the left of NPHI, the space in between the two curves is shaded yellow. Otherwise, it is shaded grey. The 1<sup>st</sup> Sand target is often characterized by the yellow crossover shading in the NPHI and DPHI track, Gamma Ray around 50-70 API, and RDEEP below 20 Ohms. Cimarex's target is the standard 1<sup>st</sup> Bone Spring Sand target across the area (a few townships), which is shown as a green stick in all three logs.

#### **WOLFCAMP STATEMENT**

**(See Cimarex's 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, filed as an Exhibit in Cases 23594 – 23597 and Cases 23598 - 23601)**

24. **Exhibit B-19** is a structure map (Subsea TVD) of the top of the Wolfcamp, which is about 50 ft below the 3<sup>rd</sup> Bone Spring Sand Target, as noted by the type log located at the blue star. The contour interval is 100 ft, well control points are displayed, and structure is dipping to the south. From the first take point to the last take point of the Mighty Pheasant and Loosey Goosey wells (located within black and red box), there is approximately 100 ft of relief.

25. **Exhibit B-20** is an isopach map of the Wolfcamp X and Y Sands, as noted by the type log located at the blue star. The contour interval is 20 ft, well control points are displayed, and the

Wolfcamp X and Y Sands are consistently about 100 ft at the Mighty Pheasant and Loosey Goosey development (located within black and red box).

26. **Exhibit B-21** is a structural cross section from west to east on the northern end of the Mighty Pheasant and Loosey Goosey sections. Gamma Ray is displayed in the first log track, on a scale from 0 to 150 API, shaded to the right with blue representing low Gamma Ray, brown representing high Gamma Ray, and yellow in between. The second track is deep resistivity (RDEEP), on a scale from 2 to 2000 Ohms, with RDEEP less than 20 Ohms shaded solid red to represent the Bone Spring Sand reservoirs. The third track is the photoelectric log (PEF) which is shaded blue and purple for higher values and yellow for lower values. The fourth track is neutron and density porosity (NPHI and DPHI). NPHI is shown in red, while DPHI is blue, and when DPHI crosses to the left of NPHI, the space in between the two curves is shaded yellow. Otherwise, it is shaded grey. The basal 3<sup>rd</sup> Sand target is often characterized by the yellow crossover shading in the NPHI and DPHI track, Gamma Ray around 50-70 API, and RDEEP below 20 Ohms. Cimarex's target is the standard basal 3<sup>rd</sup> Bone Spring Sand target across the area (a few townships), which is located above the Wolfcamp X & Y Sands (highlighted yellow on the left side). Frac baffles are shown in red and white striped boxes within the depth track, and there are only a couple frac baffles present within the 3<sup>rd</sup> Bone Spring Carbonate. These baffles are characterized by low Gamma Ray <50 API, indicating carbonate, along with high resistivity, and low neutron and density porosities (0-4%). There are no indications of any major geomechanical changes/frac baffles in between Cimarex's 3<sup>rd</sup> Sand target and Permian Resources' Wolfcamp Sands target, indicating that these two intervals are most likely one shared reservoir tank; therefore, Permian Resources' Wolfcamp XY Sands target will primarily produce from the 3<sup>rd</sup> Bone Spring Sand.

27. The Exhibits to this Affidavit were prepared by me or compiled from Cimarex's company business records under my supervision.

28. The granting of this Application is in the interests of conservation, the prevention of waste, and the protection of correlative rights.

29. The foregoing is correct and complete to the best of my knowledge and belief.

*[Signature page follows]*



*Signature page of Self-Affirmed Statement of Staci Mueller:*

I understand that this Self-Affirmed Statement will be used as written testimony before the Division in Case Nos. 23448-23455 and 23594 – 23601 and affirm that my testimony herein is true and correct, to the best of my knowledge and belief and made under penalty of perjury under the laws of the State of New Mexico.

  
STACI MUELLER

7 / 11 / 2023

Date Signed

# *Geology Exhibits*



# Locator Map & Stress Direction

- 1. 8 Lower 3<sup>rd</sup> Bone Spring Sand
  - 2. 8 2<sup>nd</sup> Bone Spring Sand
  - 3. 8 1<sup>st</sup> Bone Spring Sand
- The wells will be drilled north to south from 2 pads/ Section

## State of stress in the Permian Basin, Texas and New Mexico: Implications for Induced seismicity

lens: Erik Lund, Snee and Mark D. Zoback

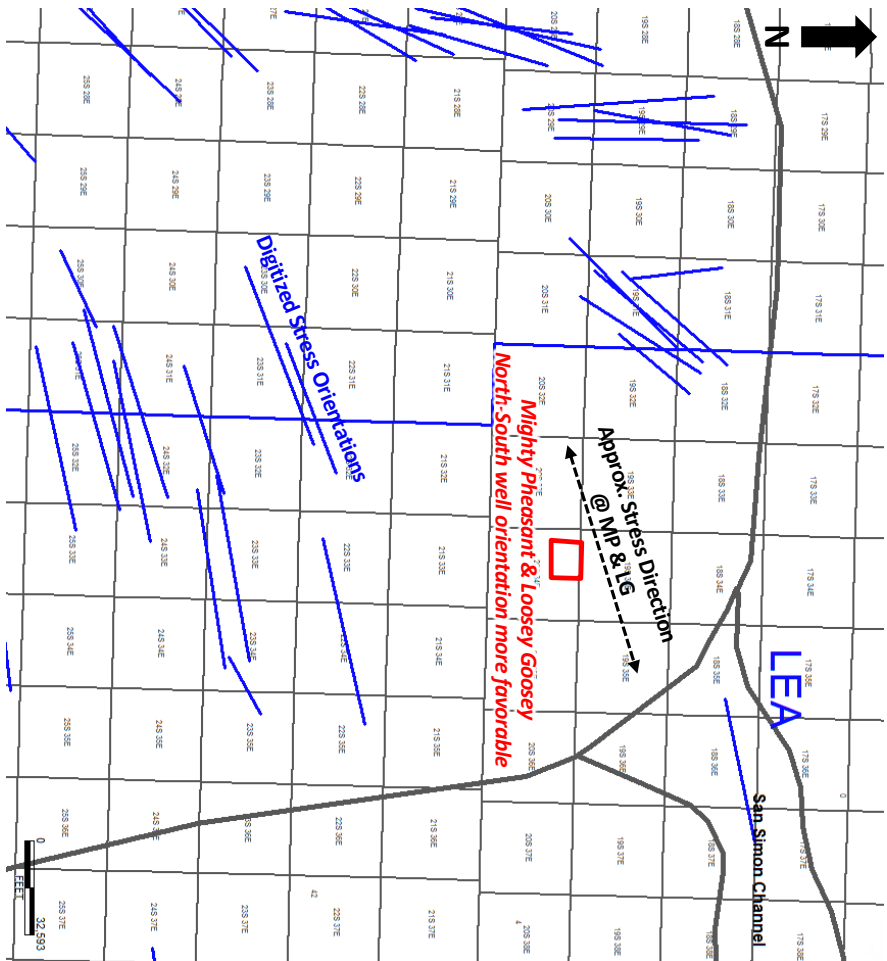
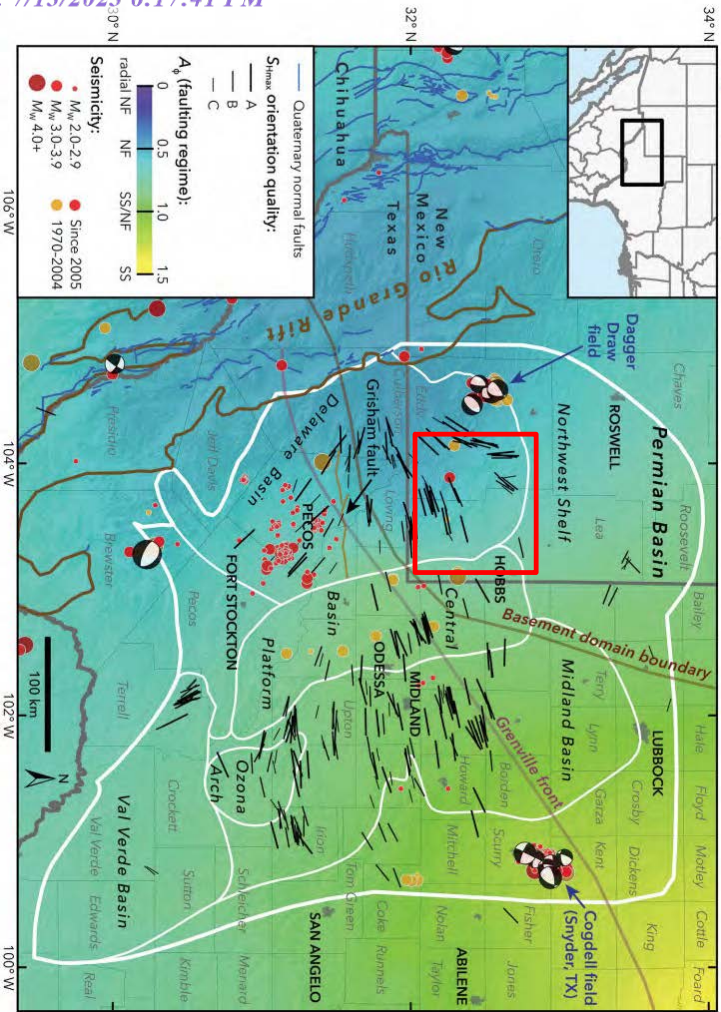


EXHIBIT B-1



# Permit Status

State	County	Well Name & Number	Permit Status	Permit Submission Due Date	Permit Submitted Date	10-Day Letter Date	10-Day Letter Due
NM	Lea	Mighty Pheasant 5-8 Fed Com 101H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 102H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 103H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 104H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 201H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 202H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 203H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 204H	AFMSS-Accepted	2/14/2022	2/14/2022	6/2/2023	7/17/2023
NM	Lea	Mighty Pheasant 5-8 Fed Com 301H	AFMSS-Accepted	3/1/2022	3/1/2022		
NM	Lea	Mighty Pheasant 5-8 Fed Com 302H	AFMSS-Accepted	3/2/2022	3/2/2022		
NM	Lea	Mighty Pheasant 5-8 Fed Com 303H	AFMSS-Accepted	2/14/2022	2/14/2022	6/2/2023	7/17/2023
NM	Lea	Mighty Pheasant 5-8 Fed Com 304H	AFMSS-Accepted	3/1/2022	3/1/2022	6/2/2023	7/17/2023
NM	Lea	Loosey Goosey 4-9 Fed Com 101H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 102H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 103H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 104H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 201H	To be permitted				
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NM	Lea	Loosey Goosey 4-9 Fed Com 203H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 204H	AFMSS-Accepted	3/15/2022	3/15/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 301H	AFMSS-Accepted	3/9/2022	3/9/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 302H	AFMSS-Accepted	3/9/2022	3/9/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 303H	AFMSS-Accepted	3/15/2022	3/15/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 304H	AFMSS-Accepted	3/15/2022	3/15/2022		

Submitted permits for 3<sup>rd</sup> Sand development & 1<sup>st</sup> Sand/2<sup>nd</sup> Sand test  
 BLM is currently working on these





# Cimarex Development Plan

Quail Ridge 32  
State 2

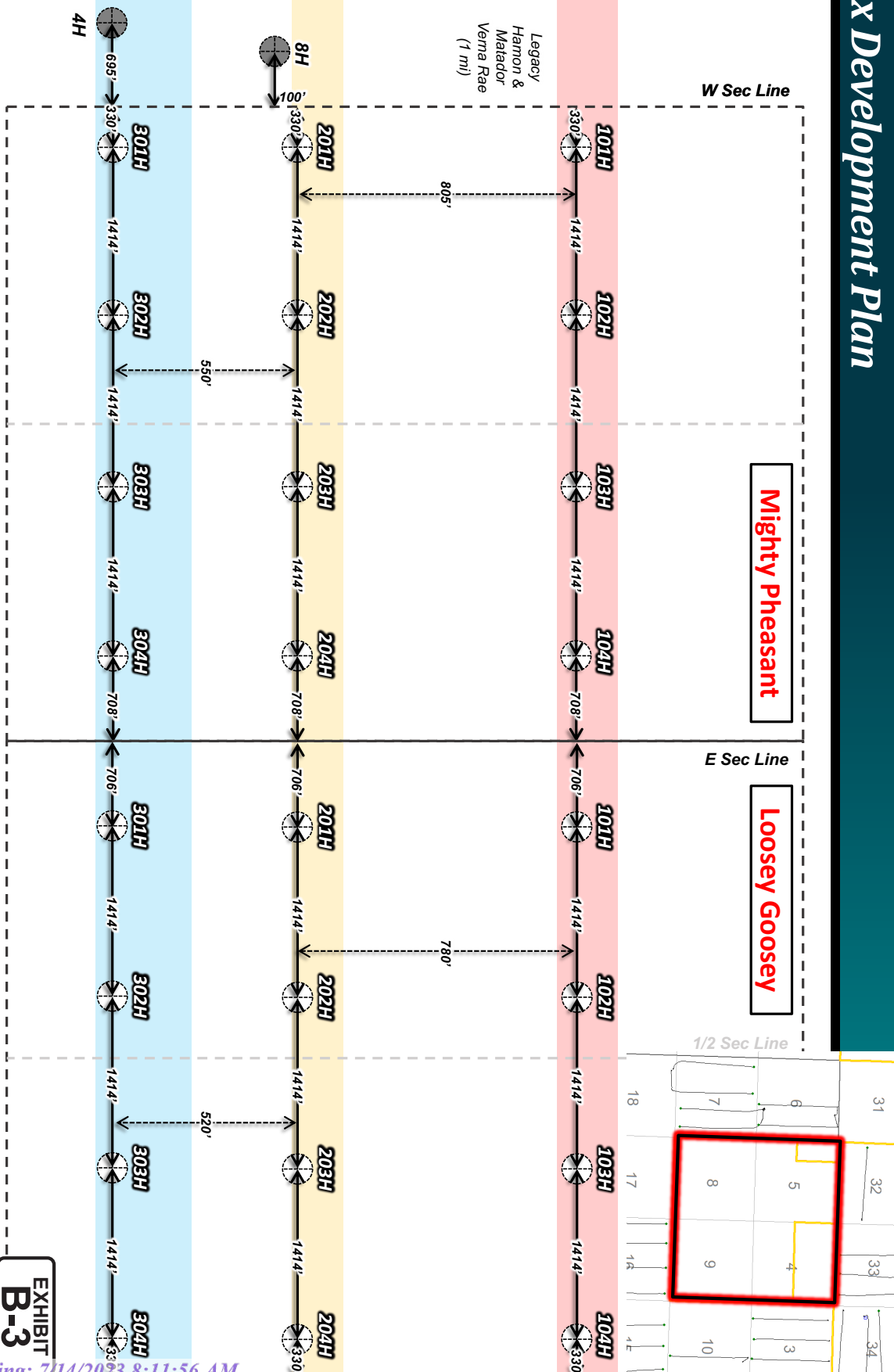
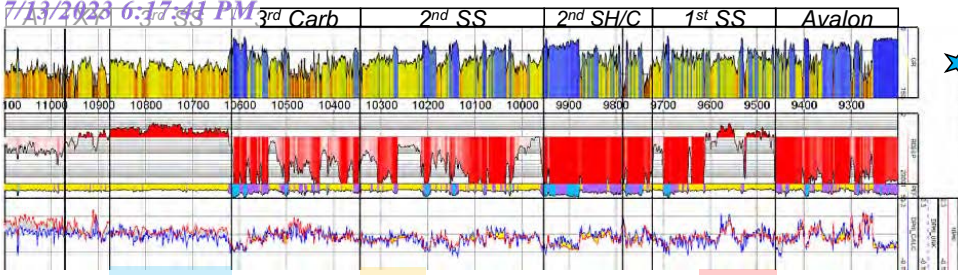


EXHIBIT  
B-3





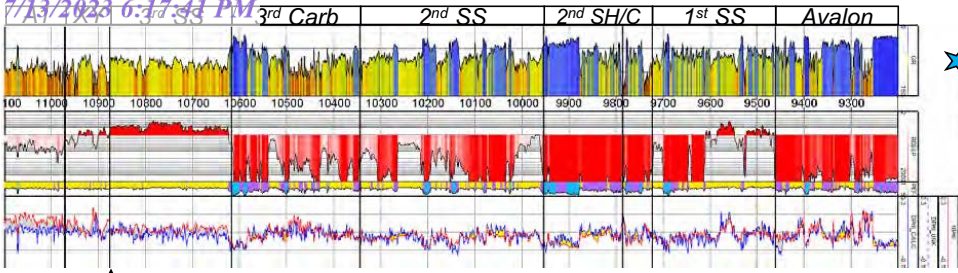
COTERRA

# *3<sup>rd</sup> Bone Spring Sand*



# 3rd Bone Spring Sand Structure

Quail Ridge 32  
State 2



MAPPED

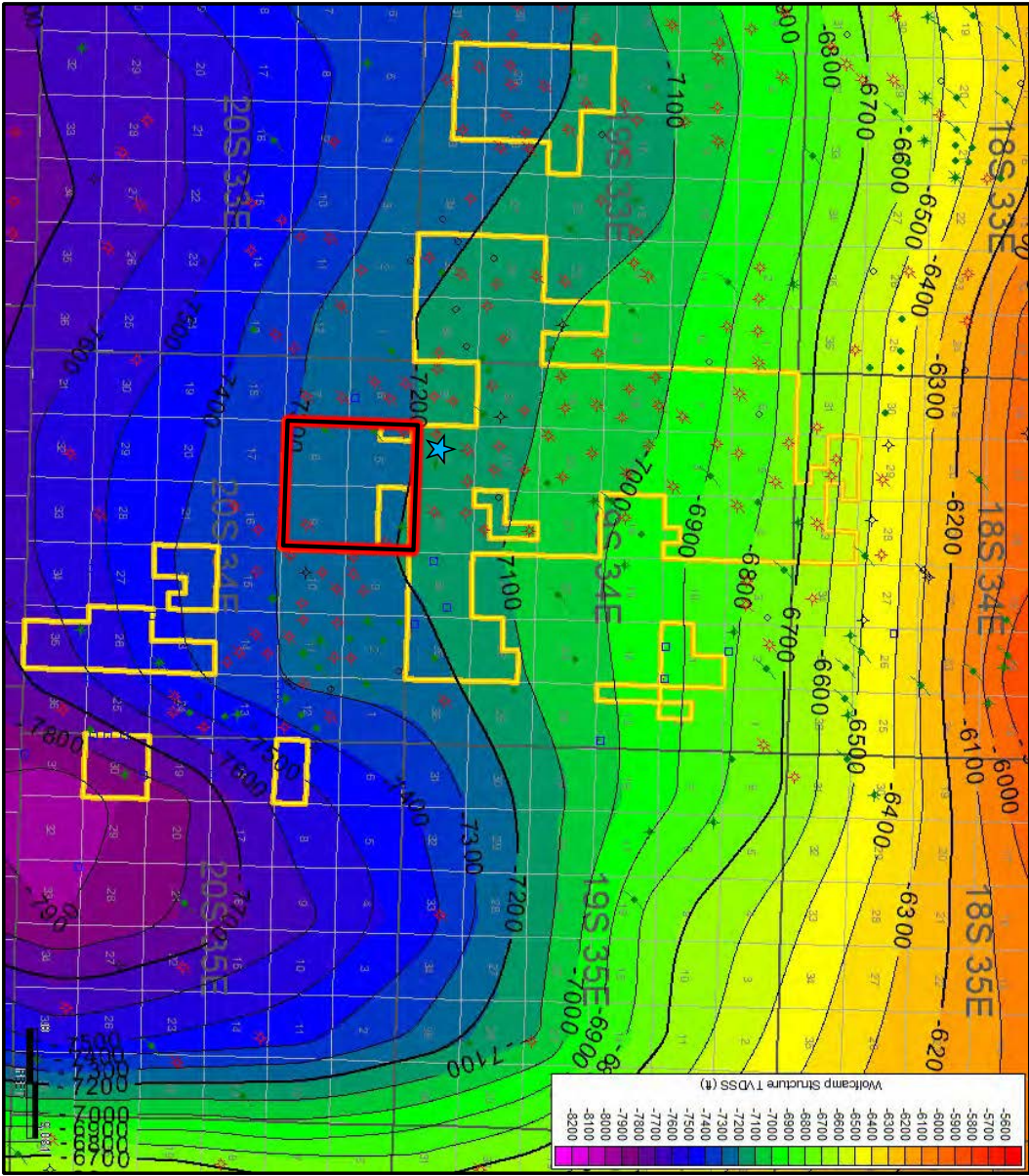
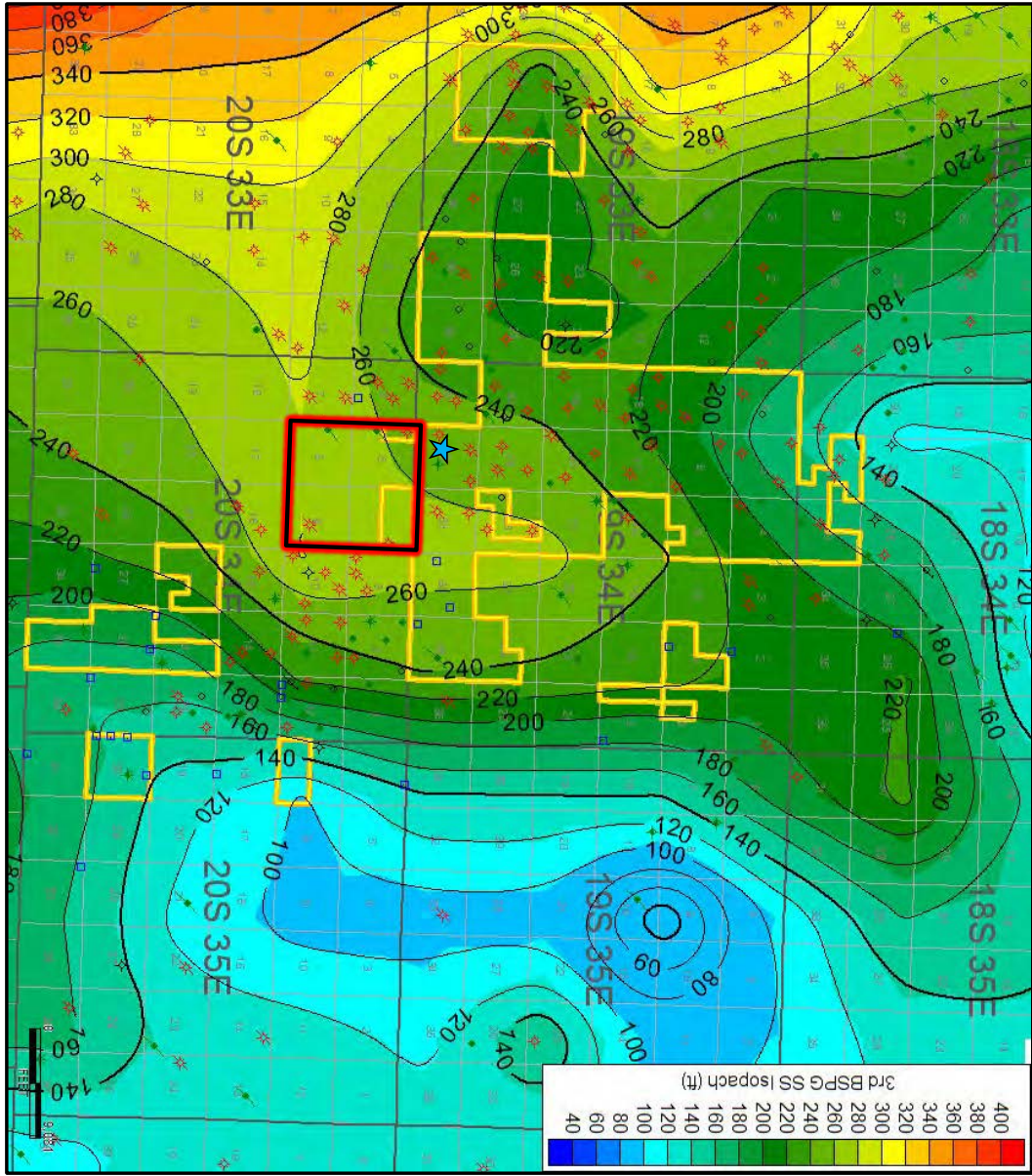
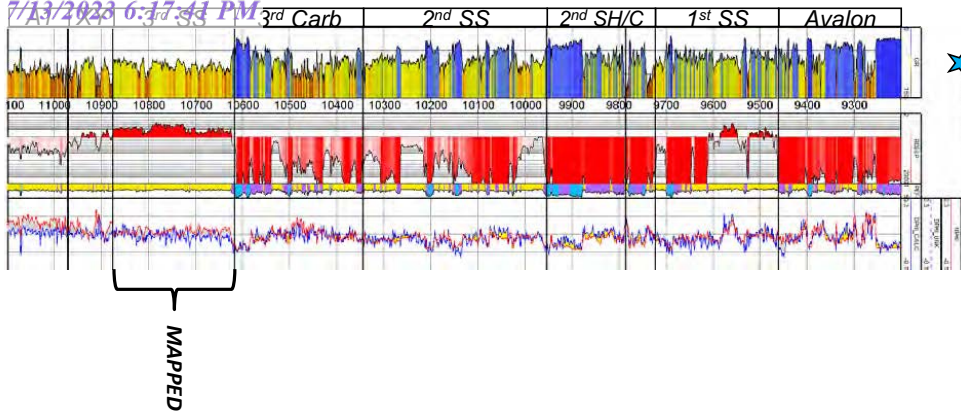


EXHIBIT  
B-5

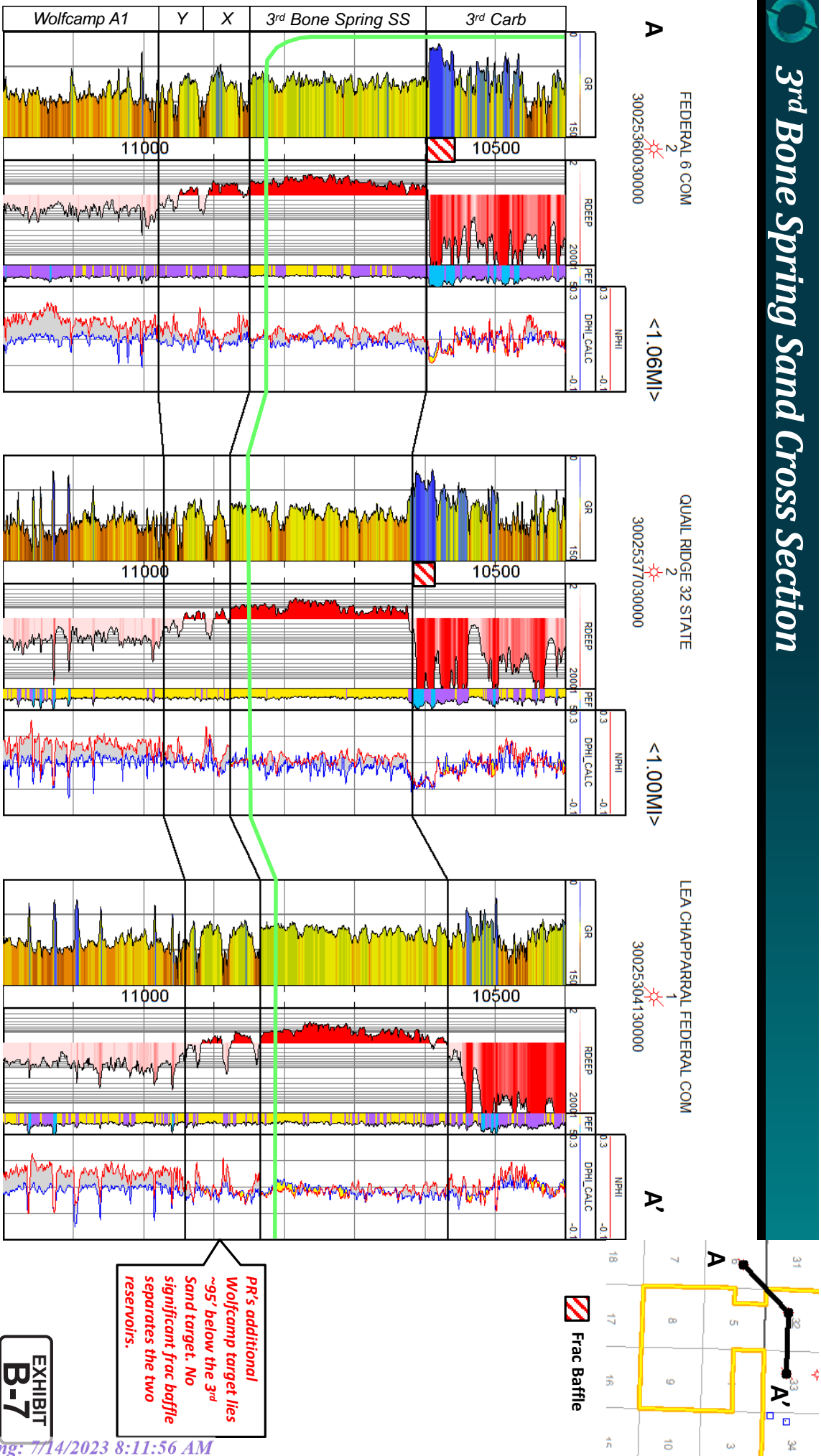




3rd Bone Spring Sand Isopach

EXHIBIT  
B-6

# 3rd Bone Spring Sand Cross Section



PR's additional Wolfcamp target lies ~95' below the 3rd Sand target. No significant frac baffle separates the two reservoirs.

**EXHIBIT B-7**



# 3rd Bone Spring Sand is Established Target

## 3rd Bone Spring Sand Producers

## Wolfcamp Producers

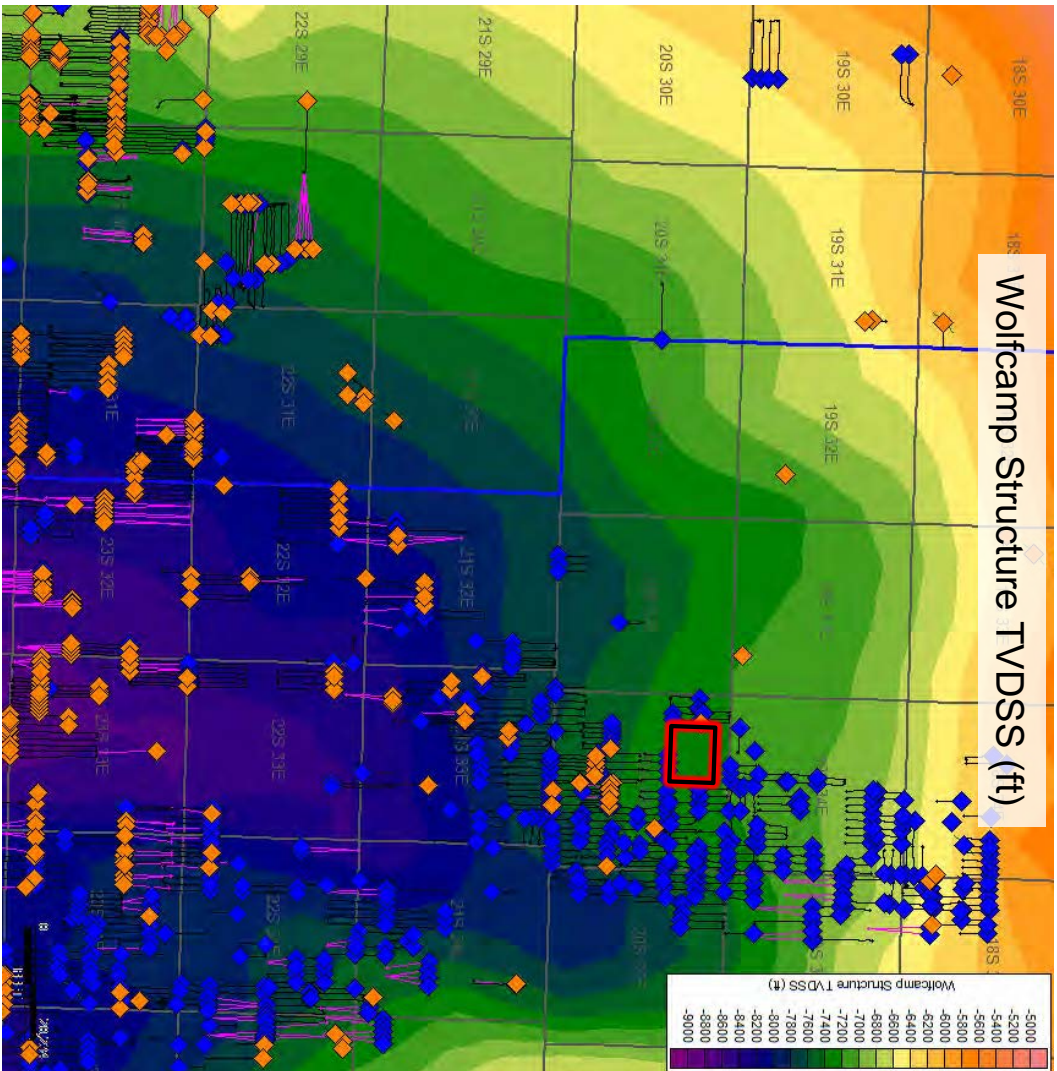


**Legend**  
 ○ Cimarex Operated Wells

**EXHIBIT B-8**



# Co-Wolfcamp SS/3<sup>rd</sup> SS Development Begins Further South

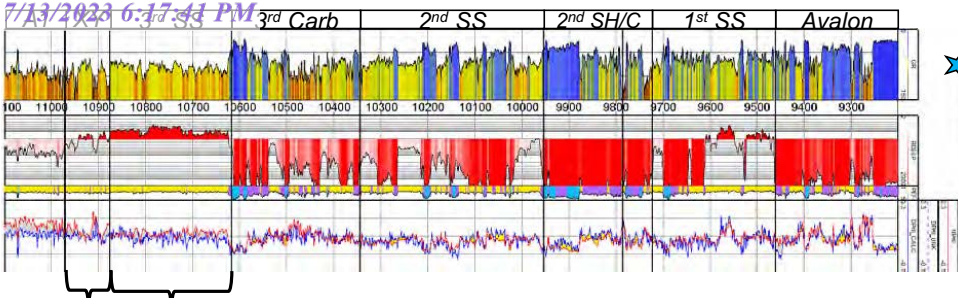


- ◆ 3<sup>rd</sup> Bone Spring Sand
- ◆ Wolfcamp Sands

**EXHIBIT**  
**B-9**

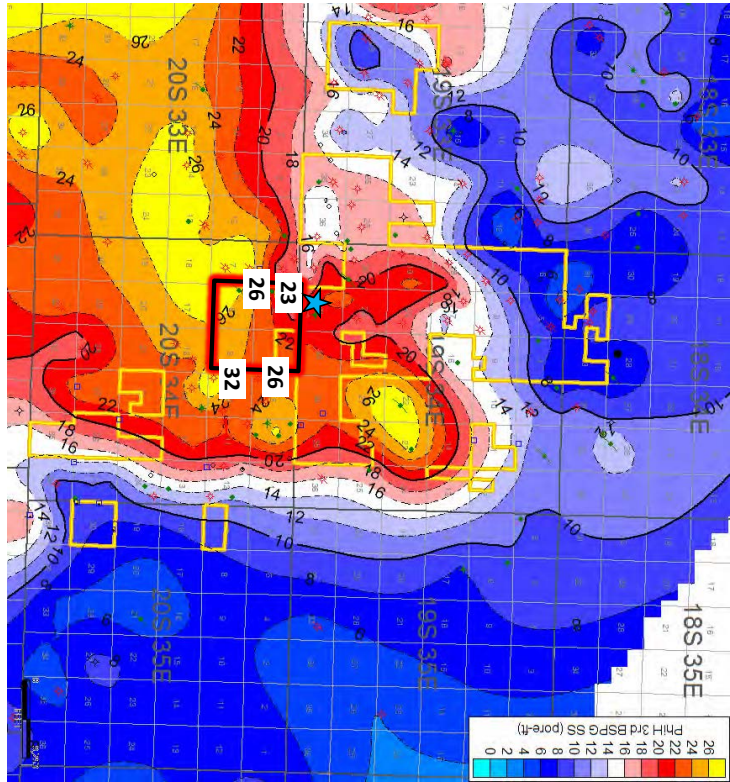
# Comparing 3<sup>rd</sup> Sand to Wolfcamp Reservoir (SoPhiH)

Quail Ridge 32  
State 2



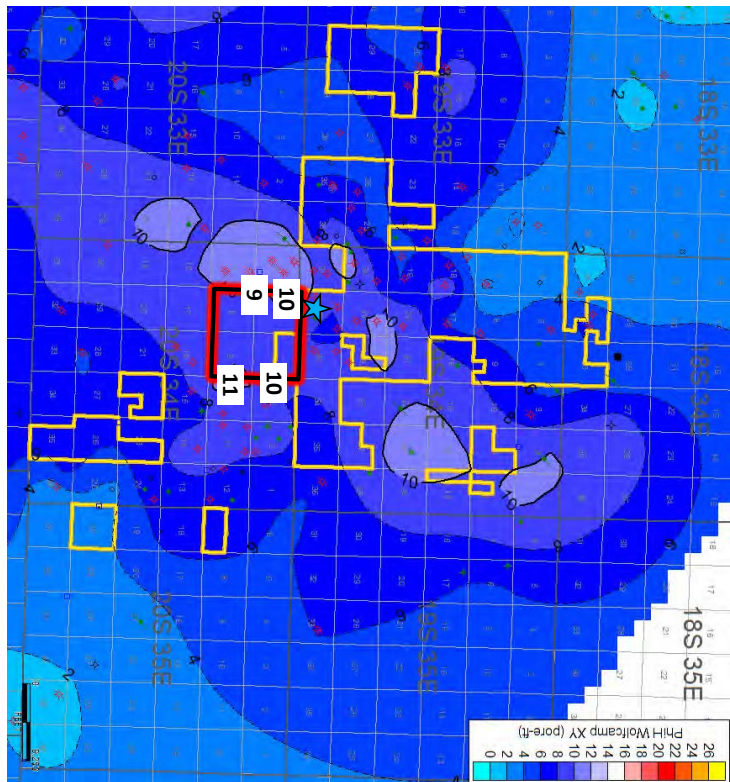
Left Map  
Right Map

Avg PhiH in 3<sup>rd</sup> SS = 26.75  
72.8% of total reservoir



PhiH 3<sup>rd</sup> Bone Spring Sand  
CTRA Target

Avg PhiH in WFMP XY = 10  
27.2% of total reservoir



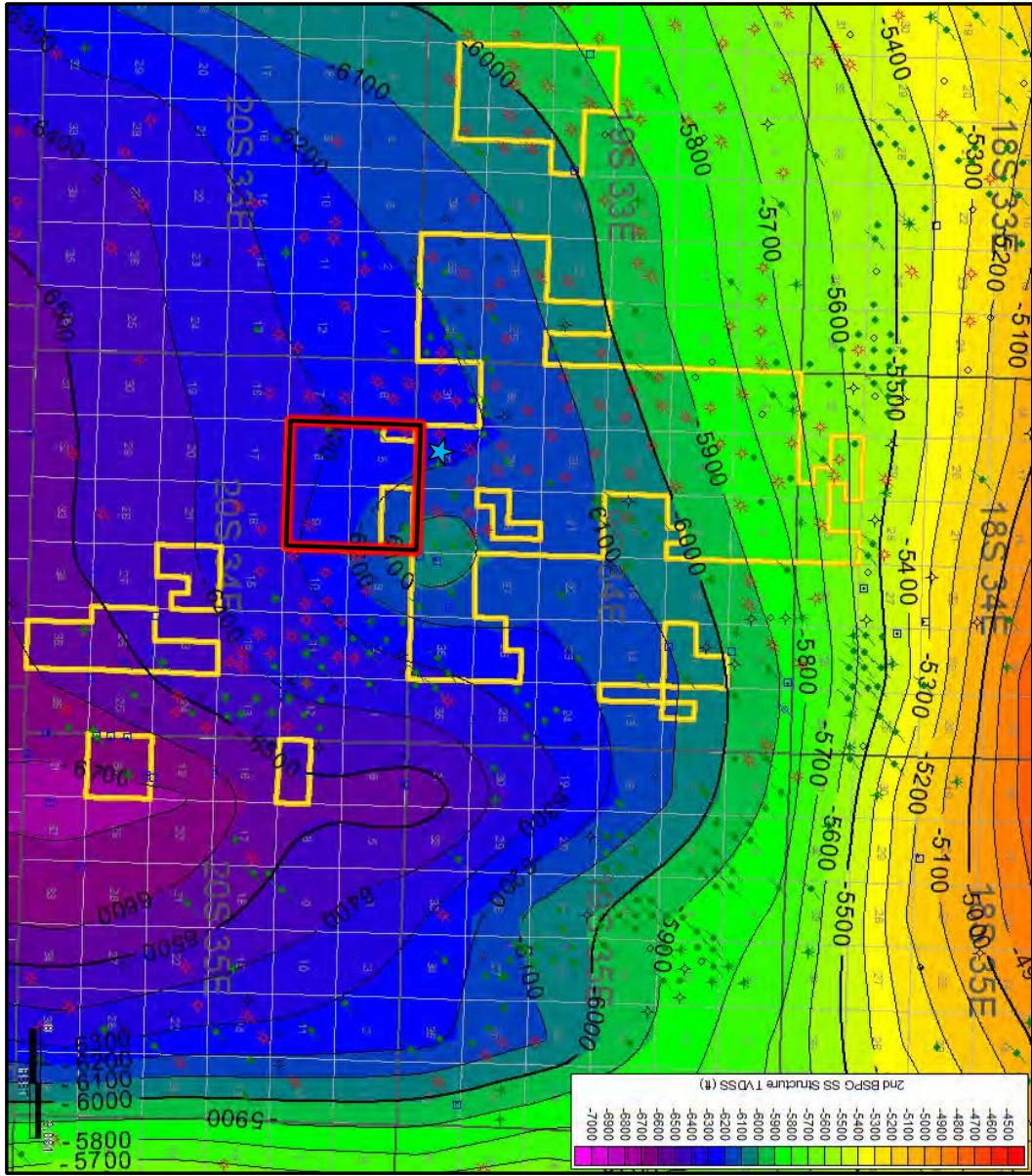
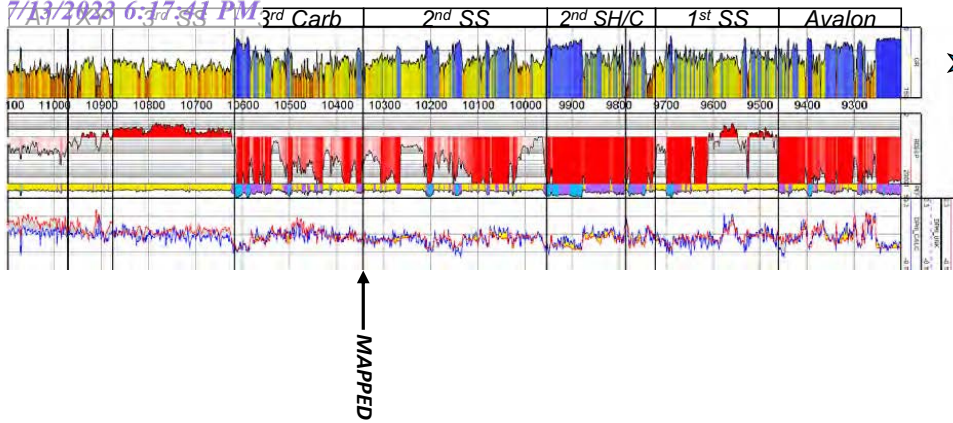
PhiH Wolfcamp X & Y Sands  
Permian Resources Additional Target

EXHIBIT  
B-10



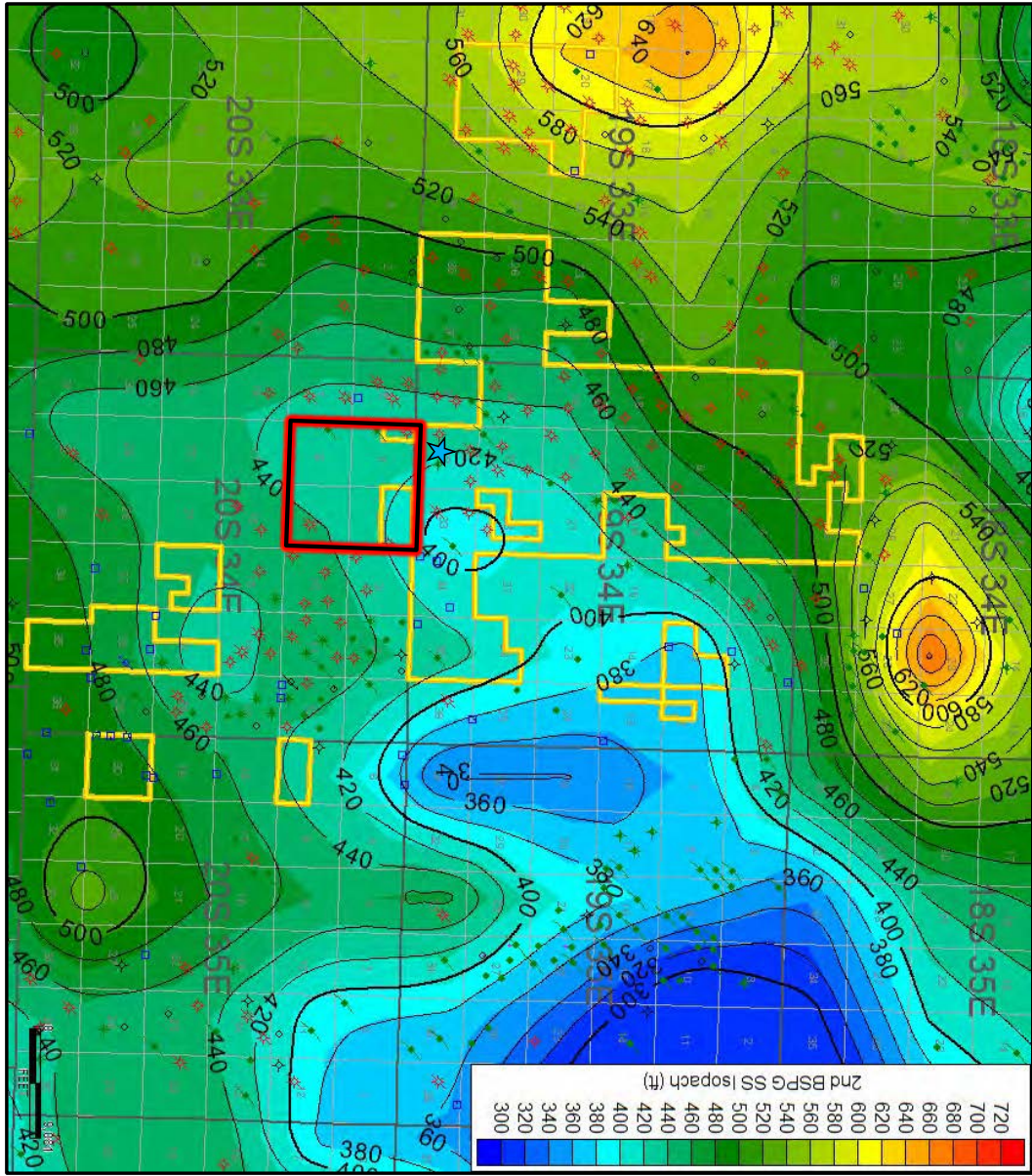
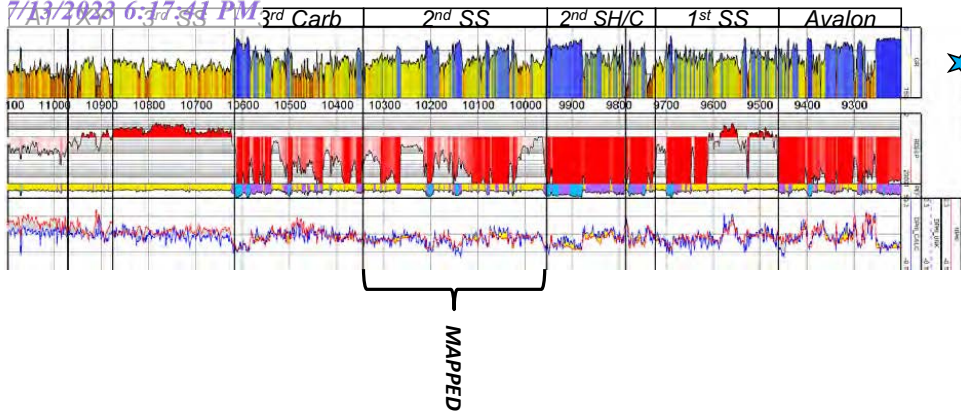
COTERRA

# *2<sup>nd</sup> Bone Spring Sand*



2nd Bone Spring Sand Structure

EXHIBIT  
B-11

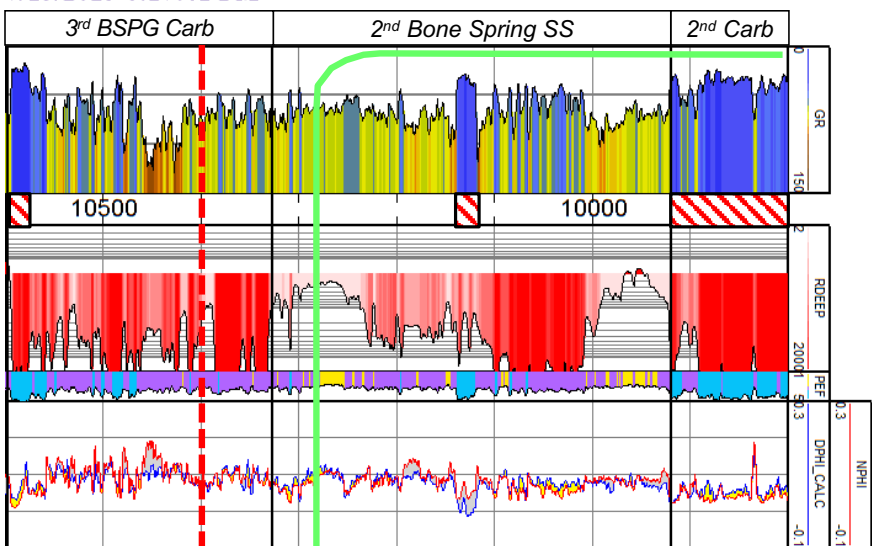


2nd Bone Spring Sand Isopach

EXHIBIT  
B-12

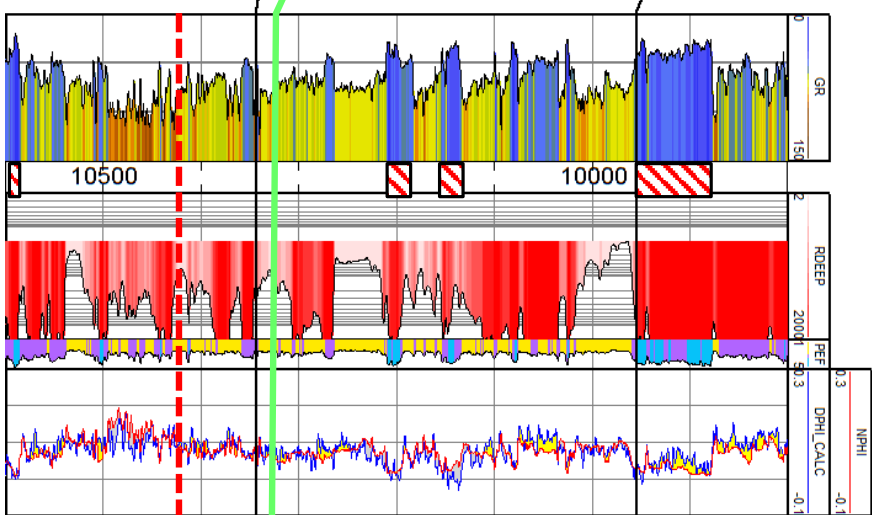


# 2nd Bone Spring Sand Cross Section



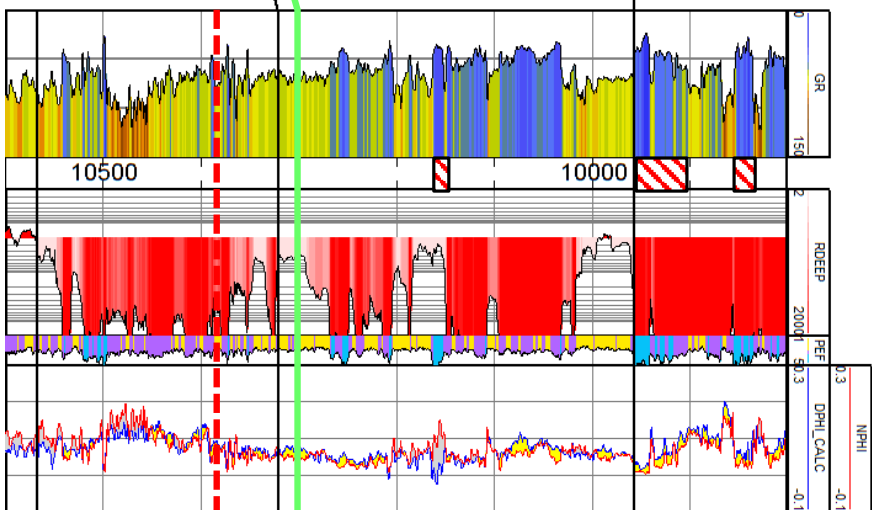
**B**  
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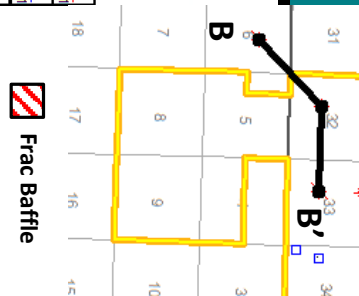
QUAL RIDGE 32 STATE  
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LEA CHAPPARRAL FEDERAL COM  
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**B'**



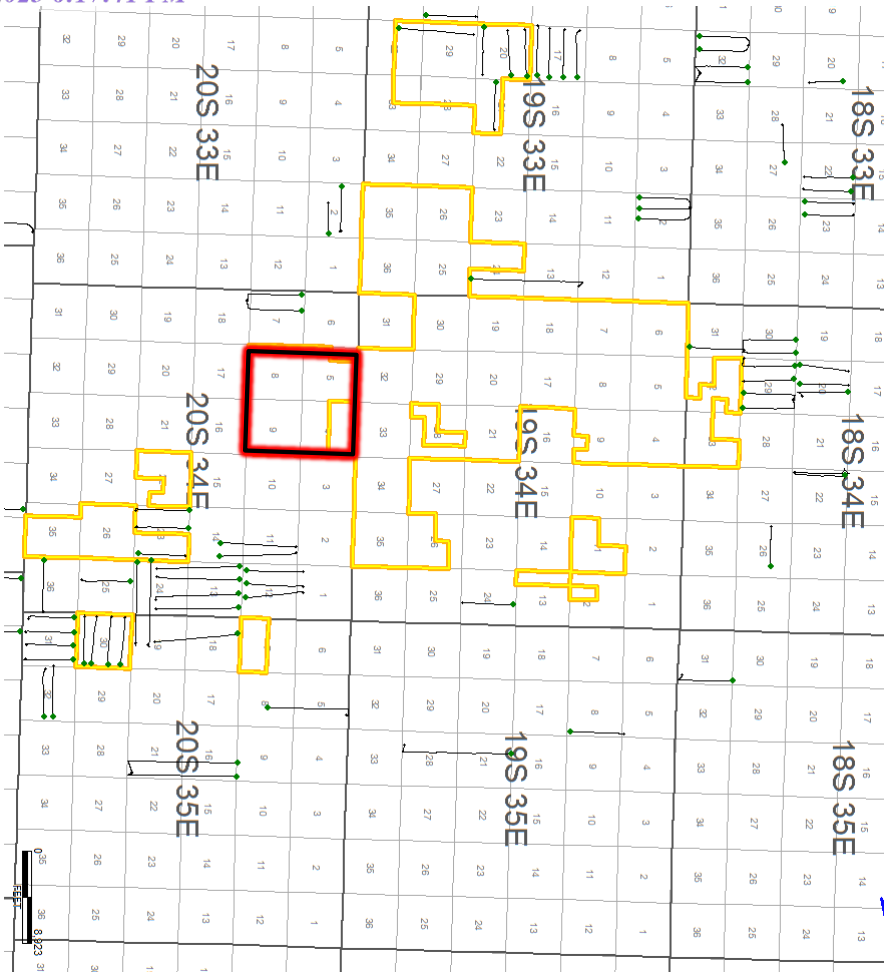
PR's additional 3rd Carb target lies ~135' below L 2nd Sand target. No significant frac baffle separates the two reservoirs.

**EXHIBIT B-13**

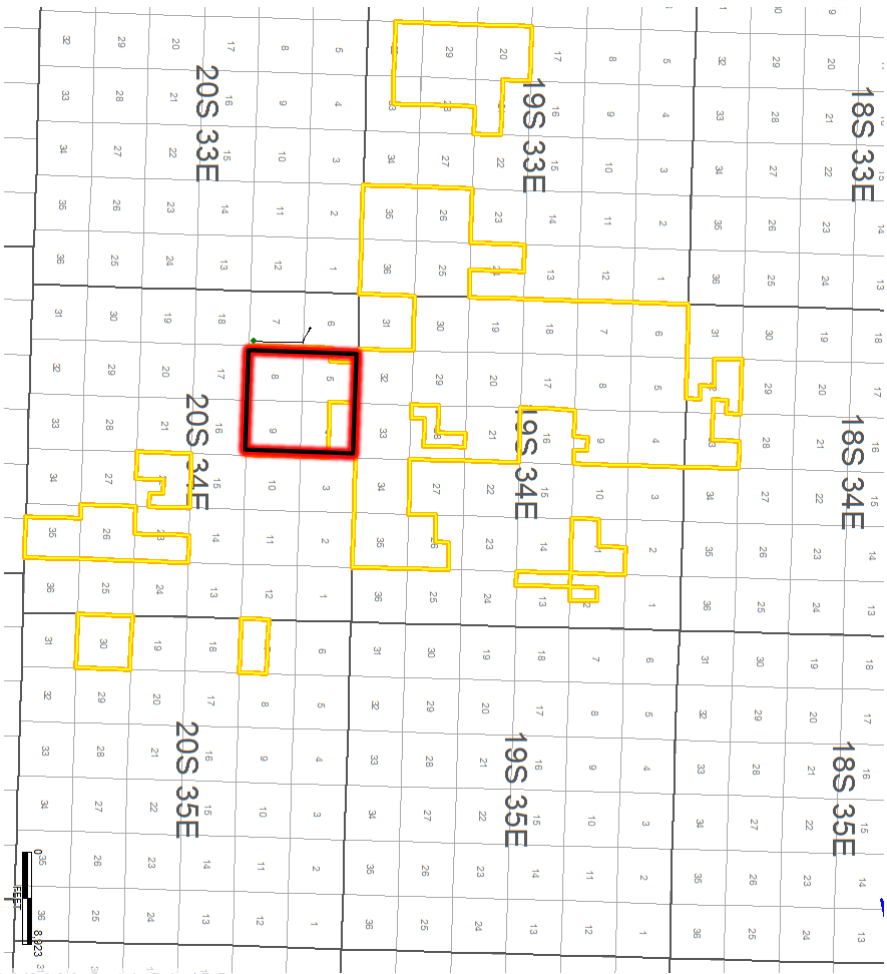


# 2nd Bone Spring Sand is Established Target

## Lower 2nd Bone Spring Sand Producers



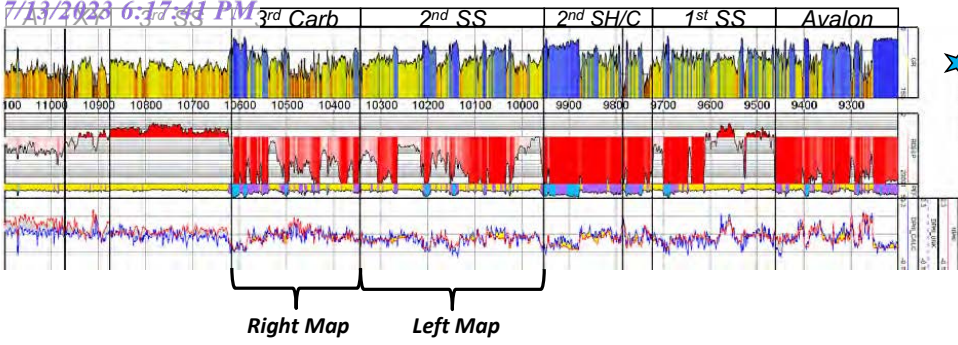
## 3rd Bone Spring Carb Producers



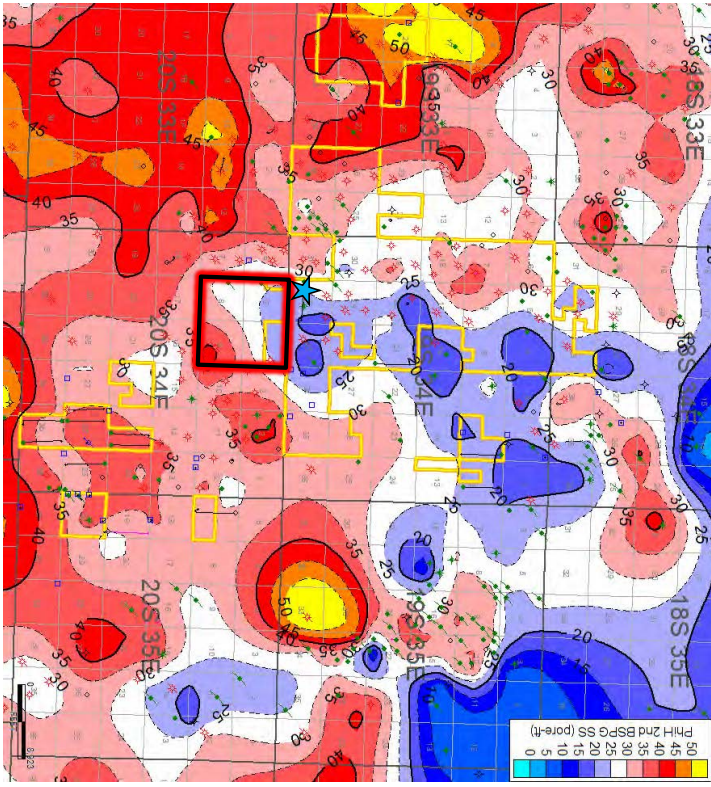
**EXHIBIT B-14**

# PhiHL 2<sup>nd</sup> Sand vs. 3<sup>rd</sup> Carb

Quail Ridge 32  
State 2



PhiH 2<sup>nd</sup> Bone Spring Sand  
CTRA Target



PhiH 3<sup>rd</sup> Bone Spring Carb  
Permian Resources Additional Target

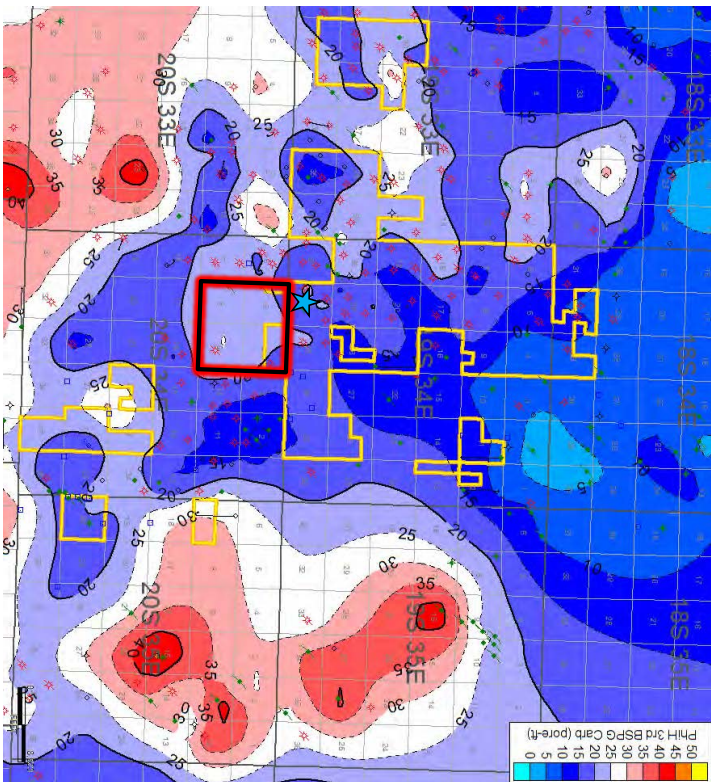
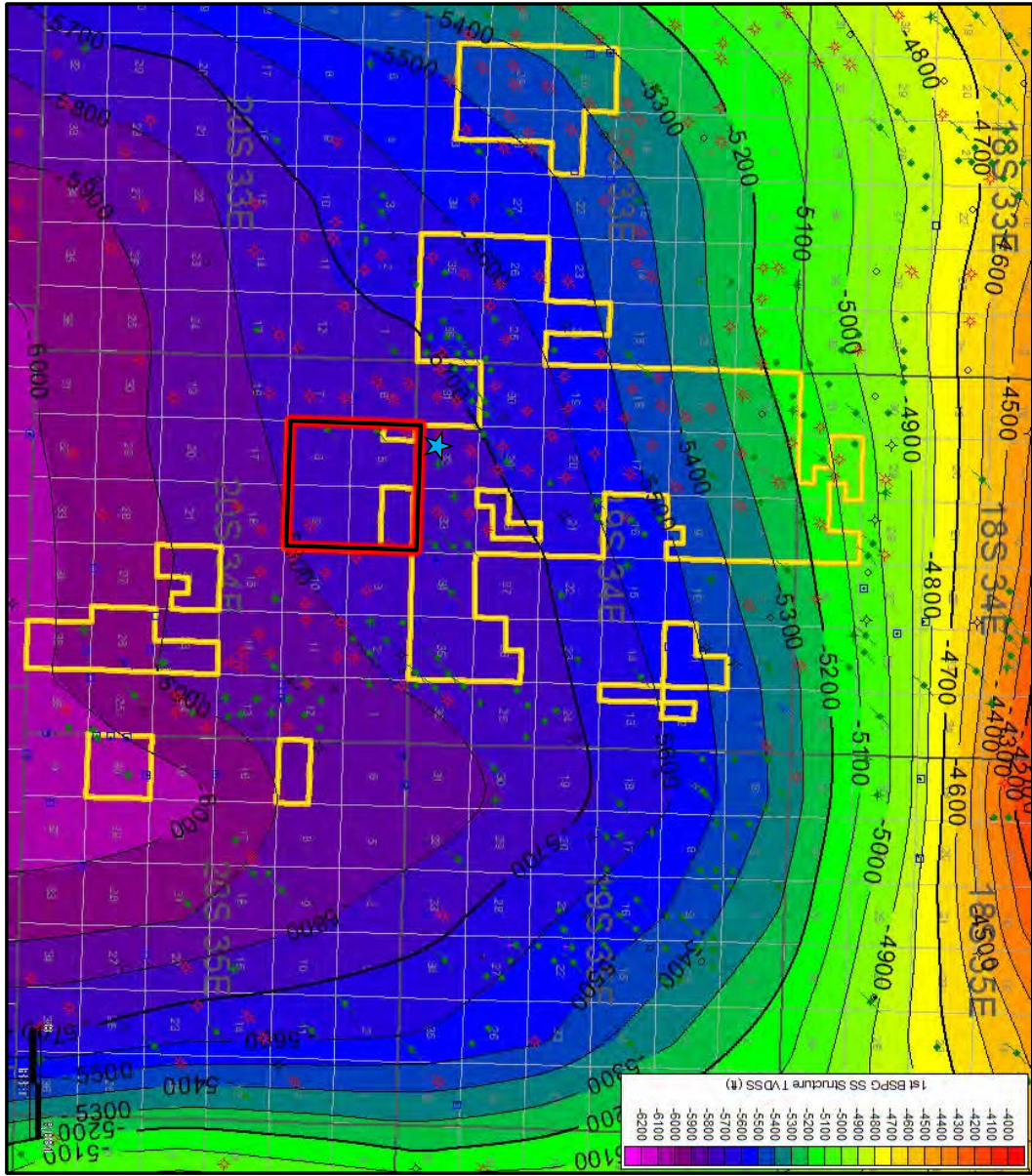
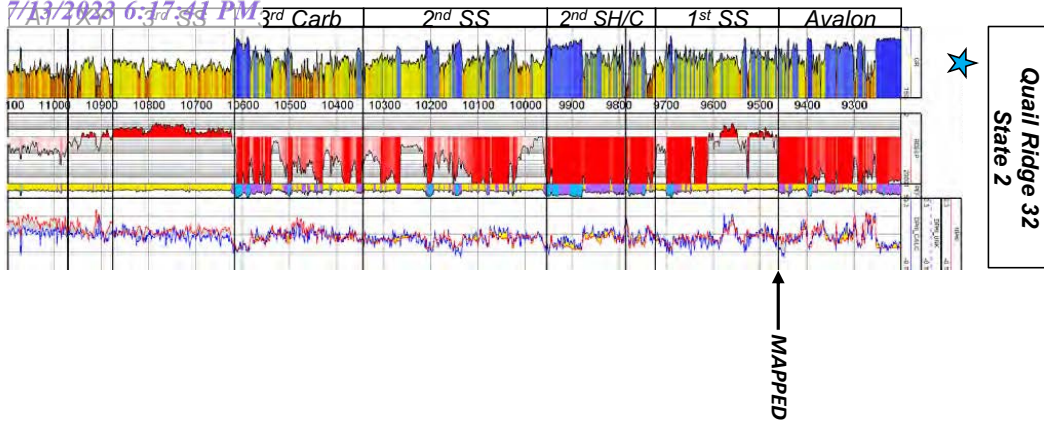


EXHIBIT  
B-15



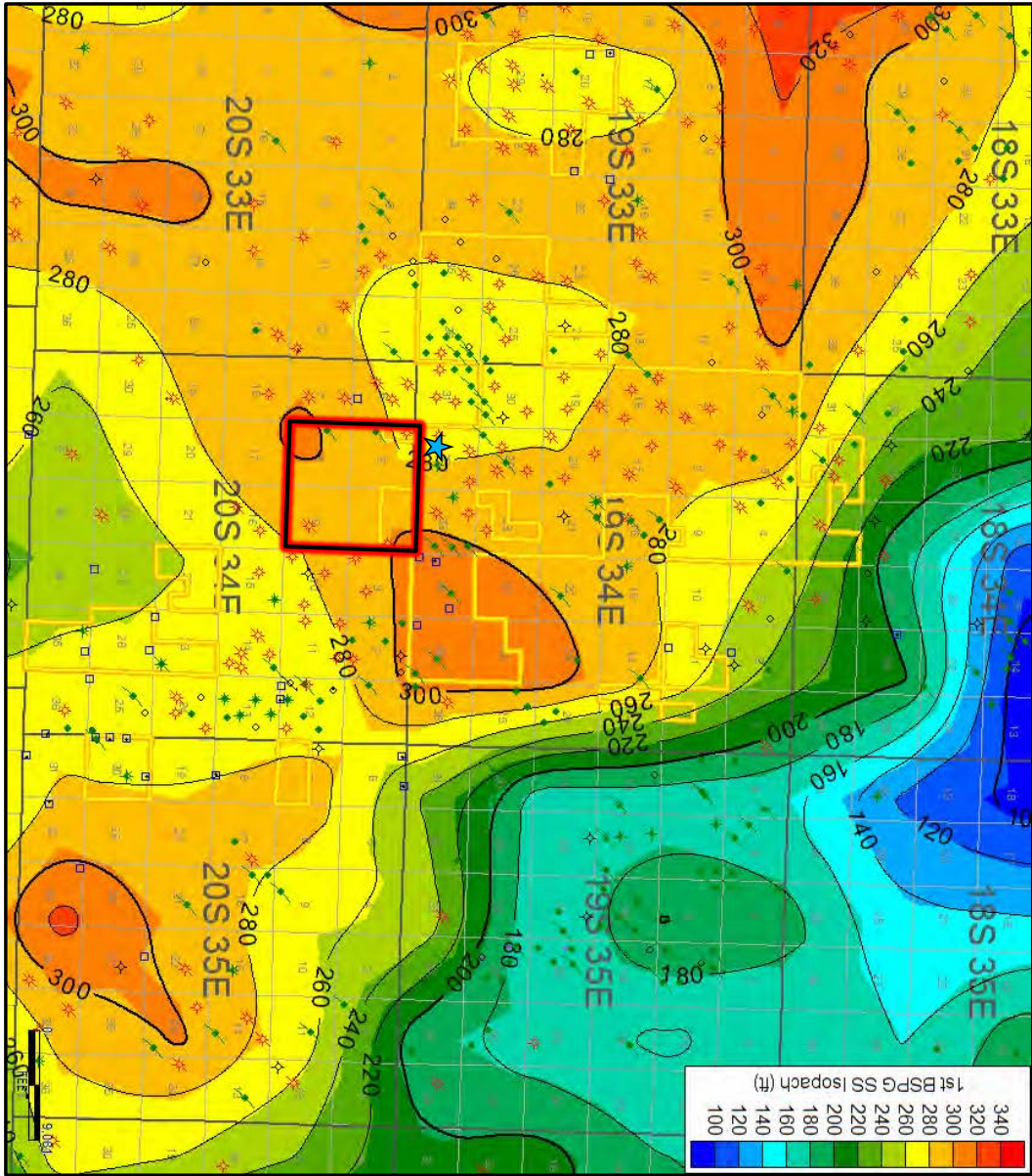
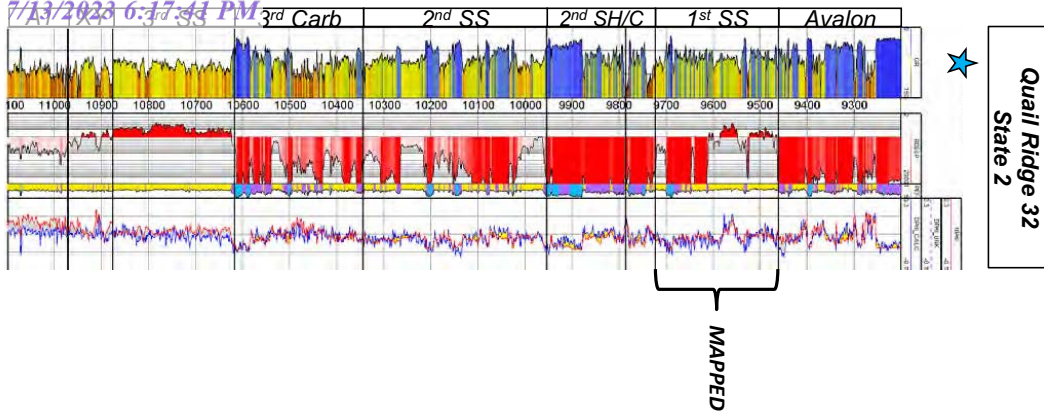
COTERRA

# *1<sup>st</sup> Bone Spring Sand*



1st Bone Spring Sand Structure

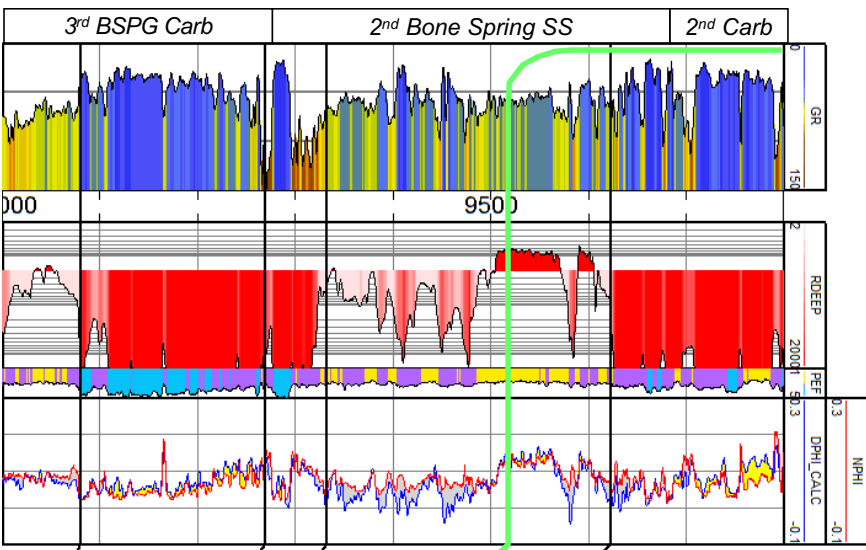
EXHIBIT  
B-16



1st Bone Spring Sand Isopach

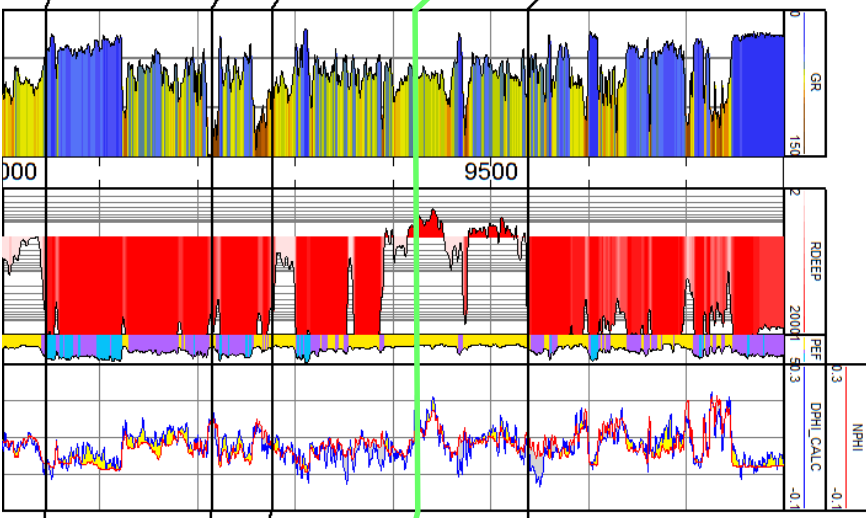
EXHIBIT  
B-17

# 1st Bone Spring Sand Cross Section



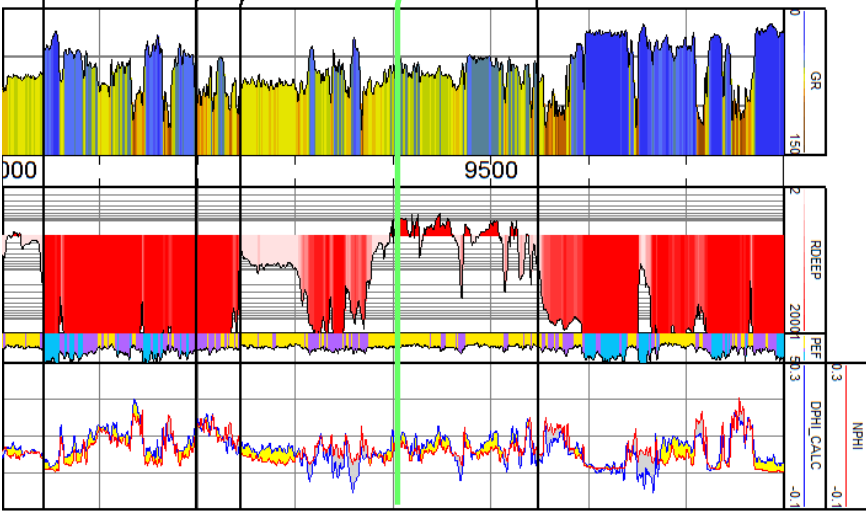
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<1.06MI>



QUAL RIDGE 32 STATE  
 300253770300000

<1.00MI>



LEA CHAPPARRAL FEDERAL COM  
 300253041300000

**C'**



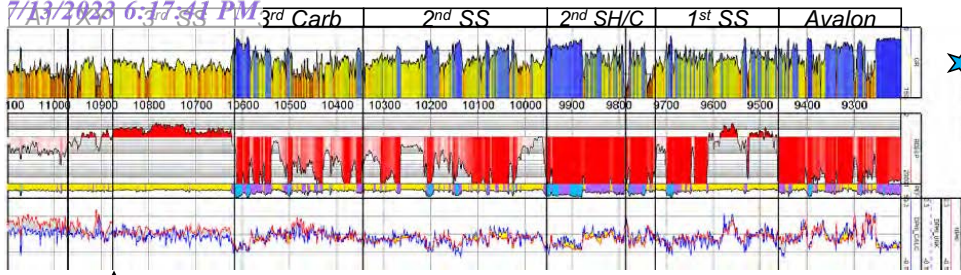
**EXHIBIT  
 B-18**



COTERRA

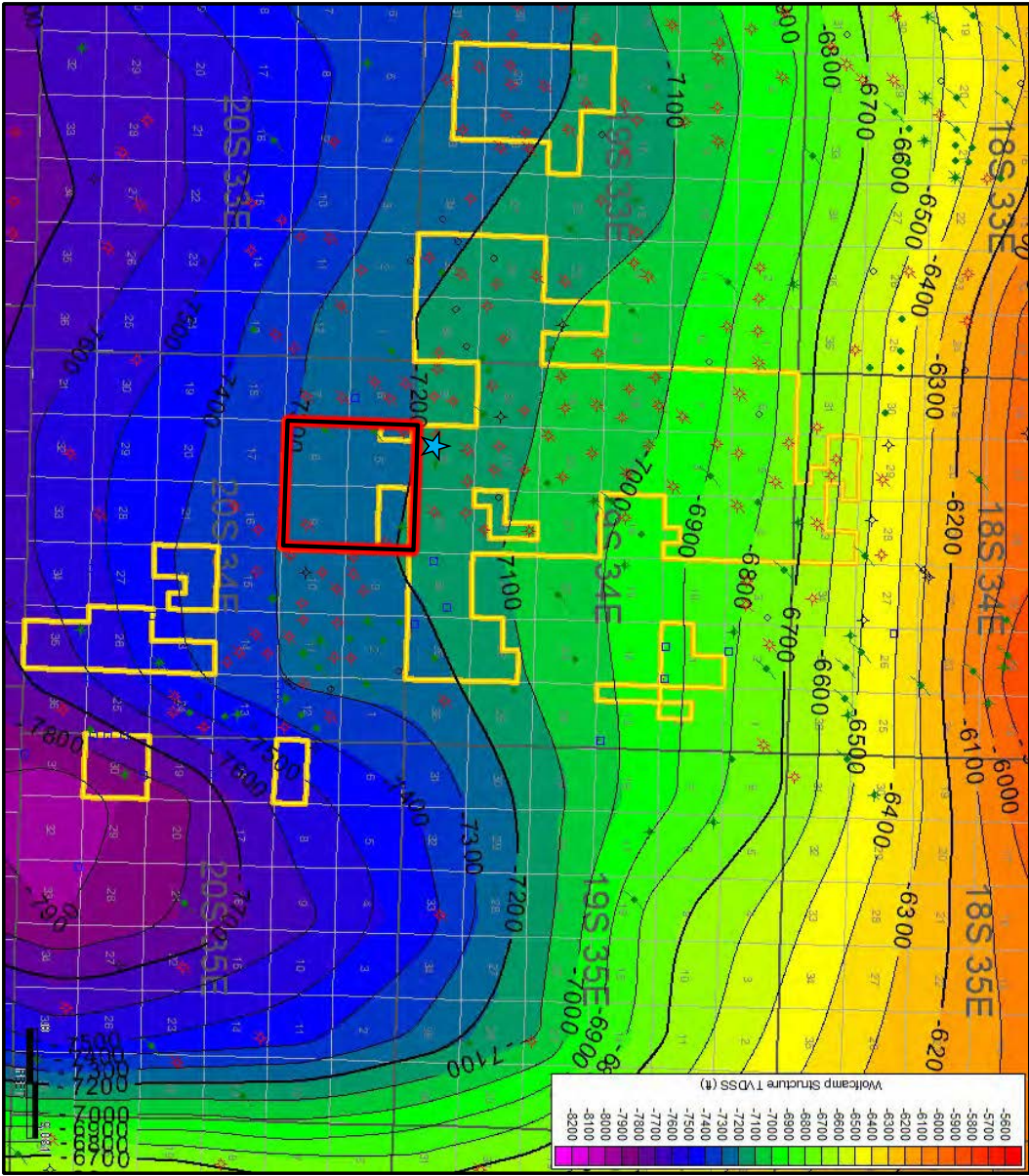
# *Wolfcamp XY*





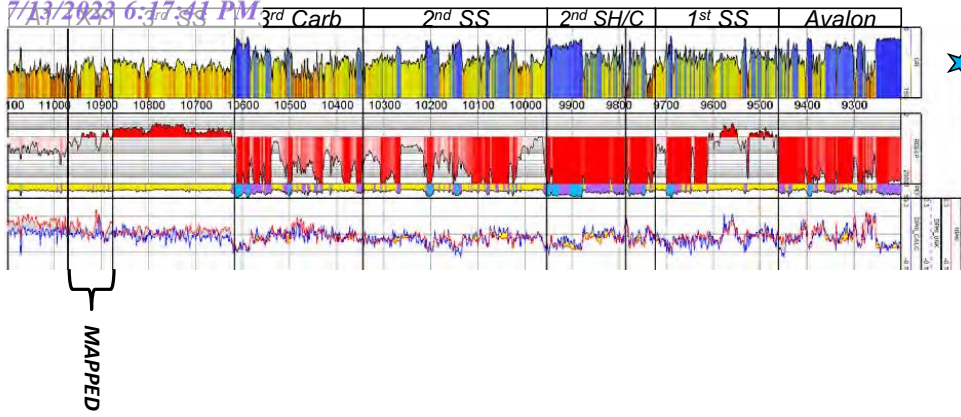
★  
**Quail Ridge 32**  
 State 2

↑  
 MAPPED



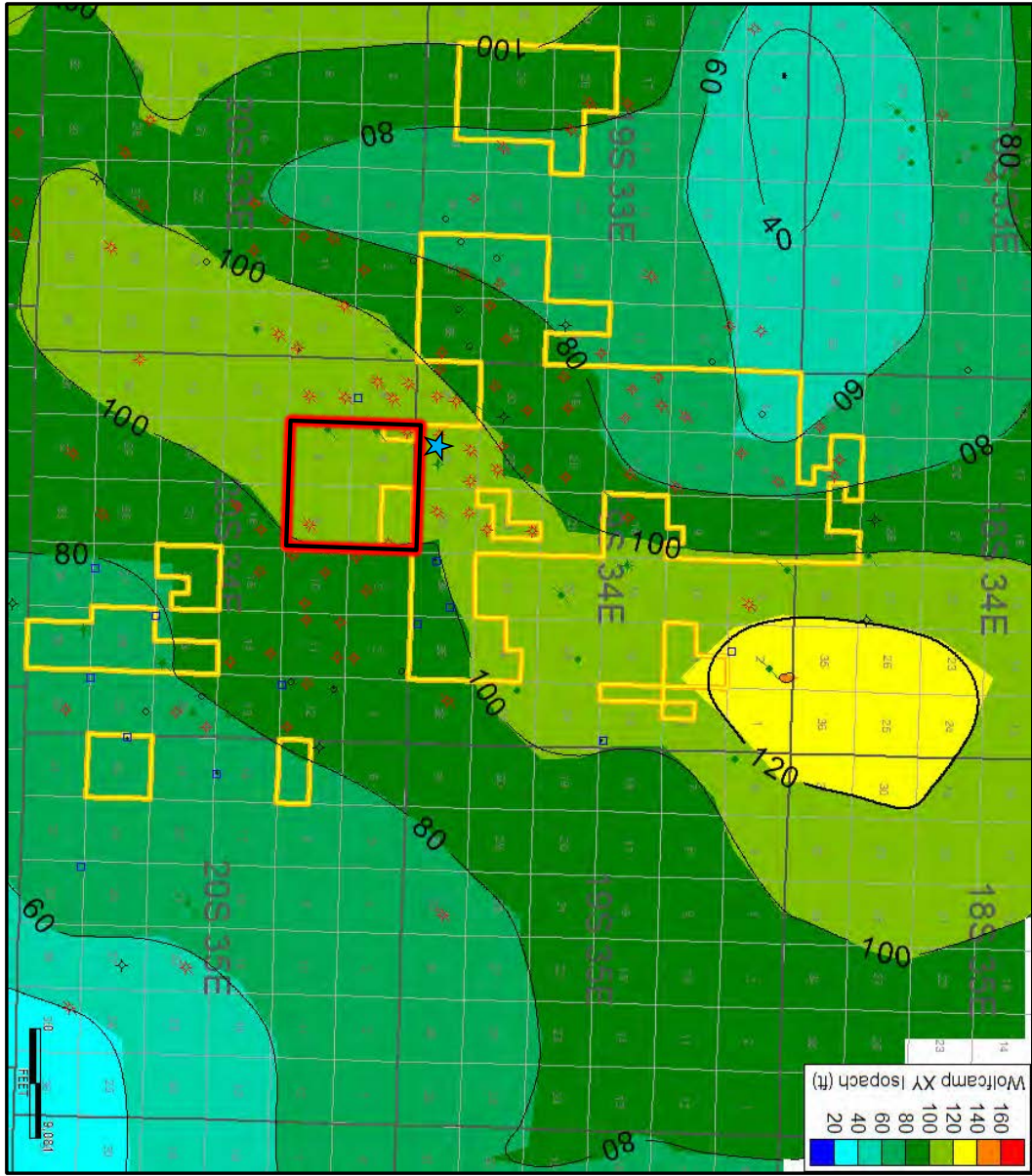
**Wolfcamp XY Structure**

**EXHIBIT**  
**B-19**



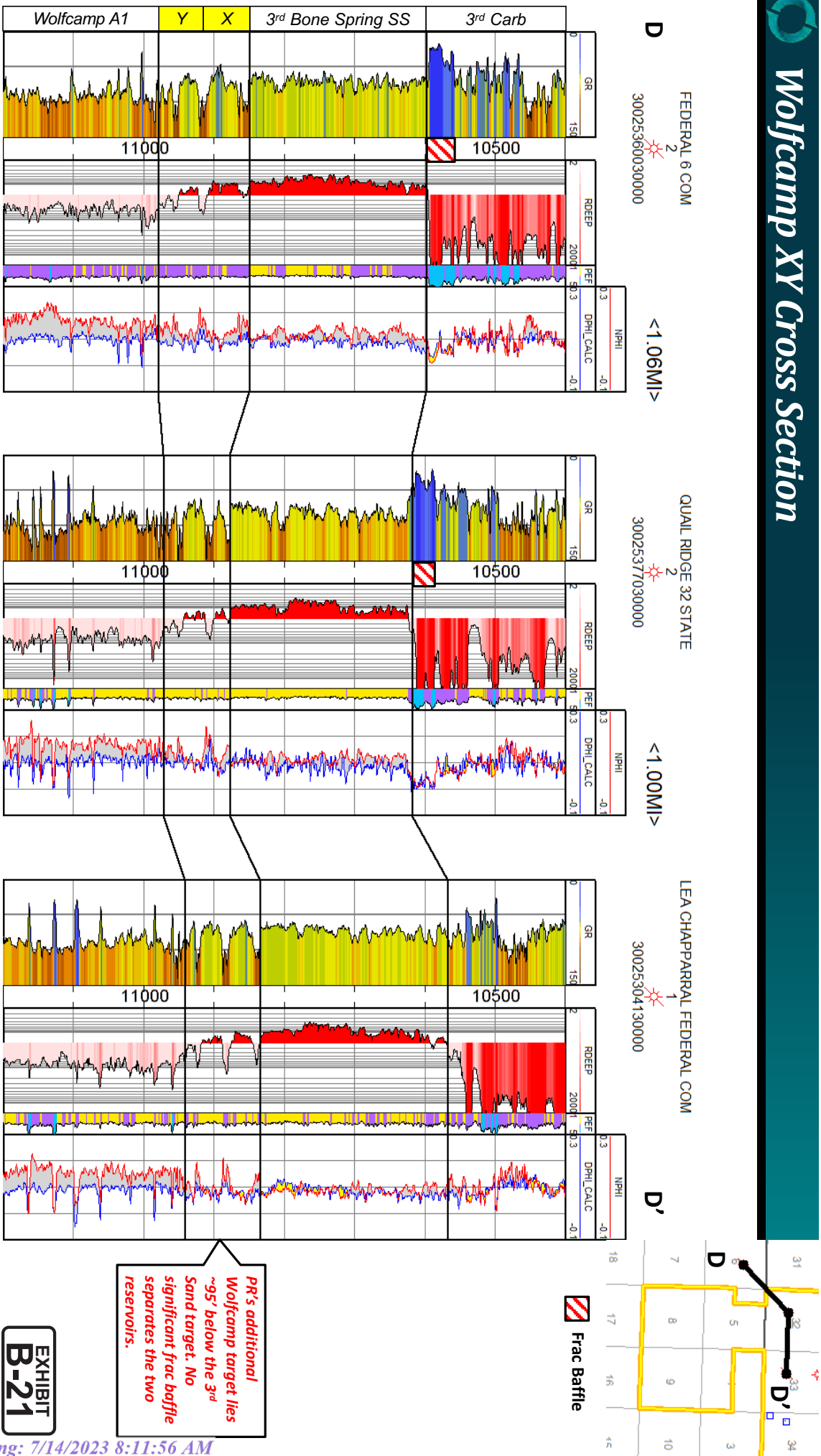
★  
 Quail Ridge 32  
 State 2

**Wolfcamp XY Isopach**



**EXHIBIT  
 B-20**

# Wolfcamp XY Cross Section



PR's additional Wolfcamp target lies ~95' below the 3rd Sand target. No significant frac baffle separates the two reservoirs.

EXHIBIT B-21

## TAB 4

Case Nos. 23594-23601

- Exhibit C: Self-Affirmed Statement of Eddie Behm, Petroleum Engineer
- Exhibit C-1: Mighty Pheasant Loosey Goosey Development Plan
- Exhibit C-2: Capital Plan Comparison Cimarex vs. Permian
- Exhibit C-3: Map of 3<sup>rd</sup> Bone Spring Sand Producers
- Exhibit C-4: 3<sup>rd</sup> Sand Well Count by Landing and Operators
- Exhibit C-5: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 wells  
(Before WC completion)
- Exhibit C-6: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 Wells Post  
Wolfcamp Frac
- Exhibit C-7: Black and Tan Wolfcamp Composite Forecast 5 wells
- Exhibit C-8: Lessons Learned from the Black and Tan Development
- Exhibit C-9: Diagram of Staggered Landing Wolfcamp 3<sup>rd</sup> SS Vs. 3<sup>rd</sup> SS Flat
- Exhibit C-10: Black and Tan Analog comparison to MP/LG
- Exhibit C-11: Landing Zone Matters; Five Years Ago, Cimarex's Perry Test  
Confirmed 3<sup>rd</sup> SS Landing as Best Target
- Exhibit C-12: Dataset Identifying all Wells in Area of Interest

**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 – 23451  
(Mighty Pheasant; Bone Spring; Secs. 5 & 8)**

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

**Case Nos. 23594 – 23597  
(Mighty Pheasant; Wolfcamp; Secs. 5 & 8)**

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

**Case Nos. 23452 – 23455  
(Loosey Goosey; Bone Spring; Secs. 4 & 9)**

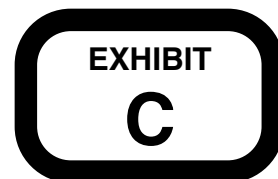
**APPLICATIONS OF CIMAREX ENERGY CO.  
FOR COMPULSORY POOLING,  
LEA COUNTY, NEW MEXICO**

**Case Nos. 23598 – 23601  
(Loosey Goosey; Wolfcamp; Secs. 4 & 9)**

**SELF-AFFIRMED STATEMENT OF EDDIE BEHM**

I, being duly sworn on oath, state the following:

1. I am over the age of 18 and have the capacity to provide this Statement; I am a Reservoir Engineer for Cimarex Energy Co. (“Cimarex”) and have personal knowledge of the matters stated herein.
2. I attended the University of Tulsa and graduated with a bachelor’s in petroleum engineering in 2011. I have worked for Occidental, California Resources prior to working for Cimarex Energy



Co. (“Cimarex”) and have been employed as a Production and Reservoir engineer for Cimarex for the last 6 years, working in the Delaware Basin with a primary focus on Lea County, New Mexico. I am familiar with the subject applications filed in the above-referenced Cases and the engineering involved.

3. I have previously testified before the Oil Conservation Division (“Division”) as an expert reservoir engineer, and my credentials have been accepted of record by the Division.

4. This testimony is submitted in connection with the filing by Cimarex in the above-referenced compulsory pooling application pursuant to 19.15.4.12.A(1) NMAC.

5. I am also thoroughly familiar with the competing applications filed by Read & Stevens, Inc. who designated Permian Resources Operating, LLC as the Operator (Read & Stevens and Permian Resources collectively referred to herein as “Permian” or “Permian Resources”) in Case Nos. 23508 through 23523. This Statement provides a description and overview of Cimarex’s development plan in comparison to Permian's development plans.

6. **Exhibit C-1, Slide 2: Mighty Pheasant Loosey Goosey Development Plan.**

Cimarex’s development plan includes the Mighty Pheasant Wells in Sections 5 and 8, Township 20 South, Range 34 East; and the Loosey Goosey Wells in Sections 4 and 9, Township 20 South, Range 34 East, all in Lea County, and Cimarex plans to develop the entire 2880 acres of the proposed units with only 33.9 acres of disturbance to the surface, thus substantially minimizing environmental impact (resulting in only a minimal 1.17% disturbance). Once the four drill pads and bulk gathering lines are installed, Cimarex will be able to rotate back to these existing drill pads for all activities and operations, thus requiring no further disturbance to the lands; by minimizing dirt work in this way, Cimarex will reduce potential air pollution and preserve native vegetation and natural habitat. Furthermore, Cimarex will develop this area with best-in-class gas

capture technology and operations and has already initiated this approach by securing proposals for oil, water, and gas takeaway and submitting load requests to power surface equipment to develop the acreage. As a company we permit zero (0) routine flaring and build tankless facilities that offer superior capture rates of low-pressure gas ( $\geq 90\%$  low pressure capture) for new developments which will be utilized in our proposed development plan.

**7. Exhibit C-2, Slide 3: Capital Plan Comparison of Mighty Pheasant vs. Joker (1280-acre Capital comparison is shown for Sections 5 & 8) to Highlight:**

- a) **The \$92.7MM in Capital waste that results from the extra wells proposed by Permian Resources; public data show that Permian's extra wells will be non-additive to EUR and PV10**
- b) **The \$31.6 MM in extra well cost driven by the wasteful execution of Permian Resources' plan.**
- c) **Permian's unnecessary expenditure of \$11 MM on one additional 2<sup>nd</sup> Sand well in comparison to Cimarex's plan which avoids such waste.**
- d) **At the time of its proposal, Permian Resources will spend \$270MM more than Cimarex to develop all 4 sections, thus in comparison, Permian would create financial waste that excessively burdens, undermines, and harms the correlative rights of working interest owners.**

**8. Exhibit C-3, slide 6: 3<sup>rd</sup> Bone Spring Sand is the Established Single Bench Target at 4 Wells Per Section (WPS) Within the Area of Interest (AOI).** The map of 3<sup>rd</sup> Bone Spring Sand Producers shows significant single bench development of the 3<sup>rd</sup> Sand at 4 wells per section spacing. The Map of Wolfcamp producers shows that the Wolfcamp is not primarily targeted with 3<sup>rd</sup> Sand development. Furthermore, where Wolfcamp is developed, it is

predominantly drilled and developed without the 3<sup>rd</sup> Sand because the reservoir is adequately captured with a single landing within the flow unit. There is only one development plan within the entire AOI similar to the plan Permian has proposed for the 3<sup>rd</sup> Sand. This plan, similar to Permian's plan, is located just 2 miles south of the subject lands, and it was based on similar well drainage assumptions that utilized outdated completion height assumptions. The Black and Tan Development Plan is the best analog and example that demonstrates the likely outcome of Permian Resources' proposal when both the 3<sup>rd</sup> Sand and Wolfcamp are developed as if they were separate and equal targets. A summary of the production results at **Exhibit C-10 (Slide 14)** herein speaks for itself, demonstrating what happened with the Black and Tan Development Plan, and therefore showing the substantial underproduction and waste that would likely result from Permian's approach, which is based on the same underlying assumptions. Cimarex's plan would avoid such an outcome.

9. **Exhibit C-4, Slide 7: Well Count by Landing and Operators Shows 3<sup>rd</sup> Sand is the Consensus Landing.** Ninety-seven percent of wells drilled in this area, that is, 236 out of 244 wells, are executed as single bench, non-staggered developments. This means it is not just Cimarex's idiosyncratic opinion that the best development plan for the Subject Lands requires a single landing target, but this is a consensus shared by all companies active within the area and directly supported by the data. Furthermore, 222 wells out of 244 total wells within the AOI land in the 3<sup>rd</sup> Sand supporting Cimarex's assessment of 3<sup>rd</sup> Sand as the optimum landing. Cimarex has executed 36 wells within the AOI, 15% of all wells, and has development experience specific to this area and its landing requirements.

10. **Exhibit C-5, Slide 9: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 wells (Before WC completion)** This Forecast shows the aggregate well performance of 6 wells prior to



underlying Wolfcamp development. Significant reserves (that of 2.5MM barrels of oil) and rates (that being 3356 BOPD IP30) were accessed by these 1-mile wells supporting 3<sup>rd</sup> Sand as a proven landing for optimal production.

11. **Exhibit C-6, Slide 10: Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 Wells Post Wolfcamp Frac.** This Forecast shows the aggregate well performance of 3<sup>rd</sup> Bone Spring Sand wells after underlying Wolfcamp development. Unfavorable results included elevated water cut, rapid GOR Incline, and steep oil decline which are signatures of interference between the five Wolfcamp wells drilled below these six 3<sup>rd</sup> Sand wells. After the Wolfcamp wells were drilled and produced, overall reserves appear to have fallen to 1.63 MM barrels of oil with steep decline profile. This highlights the degradation a 2<sup>nd</sup> landing causes within the AOI.

12. **Exhibit C-7, Slide 11: Black and Tan Wolfcamp Composite Forecast 5 wells.** This plot shows the aggregate performance and forecast to the five Wolfcamp wells completed below the six 3<sup>rd</sup> Sand wells shown on exhibits C-4 and C-5. Data clearly shows that vertical interference occurs in staggered developments, causing these 5 wells to add only 885MBO oil reserves and 500 BOPD IP in the aggregate. Elevated water cut and rapid GOR incline are evidence of interference with 3<sup>rd</sup> sand wells above.

13. **Exhibit C-8, Slide 12: Lessons Learned from the Black and Tan Development.** Exhibit C-8 table 1.0 shows some simple forecast metrics highlighting the fact that only a negligible rate and a negligible amount of EUR were detectible from drilling the five extra, not to mention expensive, Wolfcamp wells. It is noteworthy and significant how little benefit the five wells added and how much they negatively impacted 3<sup>rd</sup> sand production. The aggregate rate change is so small it is essentially zero (0) which does not support or justify as effective capital stewardship the drilling of the 8 additional \$11MM dollar wells proposed by Permian Resources.

Table 1.1 shows the pore space distribution, 3<sup>rd</sup> Sand has 268% more PHIH than the upper Wolfcamp and is clearly the predominant contributing reservoir. The hypothesis that landing in 3<sup>rd</sup> Sand with 268% more porosity and height combined with better flow properties is the best way to access all the bbls becomes unarguable with production data from Black And Tan where the addition of Wolfcamp landings added no reserves and only negatively impacted the 3<sup>rd</sup> Sand raising aggregate section OpEx. The lesson learned from this data is that drilling into the Upper Wolfcamp itself is financially wasteful and jeopardizes optimal 3<sup>rd</sup> Sand production. A setback from 3<sup>rd</sup> sand is in the best interest of efficient low risk recovery of the area reserves.

14. **Exhibit C-9, Slide 13: Diagram of Staggered Landing Wolfcamp 3<sup>rd</sup> SS Vs. 3<sup>rd</sup> SS Flat.** This exhibit shows what Cimarex believes happened in the Black and Tan analog example which reflects the nature of Permian Resources' proposal and therefore Permian's likely outcome. The Majority of Stimulated Rock Volume accessed by 3<sup>rd</sup> Sand well's landed flat must be very similar to the Stimulated rock volume accessed by staggered Wolfcamp and 3<sup>rd</sup> landings. If this were not true, the sum of Wolfcamp and 3<sup>rd</sup> sand production out of the Black and Tan development would be significantly higher once the 2<sup>nd</sup> bench was added instead of about the same. Where appropriate geologically, Cimarex executes as many as 9 landings within the same section in Lea County. Due to the location of barriers and target reservoir height executing two landings within the contested acreage in the 3<sup>rd</sup> Sand Wolfcamp target or the lower 2<sup>nd</sup> Sand 3<sup>rd</sup> Shale target serves only to double development CapEx. Cimarex has proprietary data from South Lea County developments in thicker pay that support the accuracy of how we have assessed the vertical interference and is confident additional landings serve only to dilute sweet spot landing production. Not everyone has access to the same data but there is a wealth of public data available from the

Hydraulic Fracture Test Site 2 DOE and industry partnership that would lead to the same conclusion.

15. **Exhibit C-10, Slide 14: Black and Tan Analog comparison to MP/LG.** Mighty Pheasant and Loosey Goosey have a similar pore space distribution as the Black and Tan Development with slightly higher porosity. The extra porosity is more likely to correlate to better permeability and allow a single landing to capture proven 3<sup>rd</sup> sand reserves even more efficiently. Sensitivities run vs. reserves (table 1.3) and P50 expectations (table 1.4) show the PV 10 degradation and how much uplift would be needed to break even on the additional wells proposed by Permian. Given Black and Tan's added negligible bbls and rate, close to 0%, in similar rock two miles away, the public data simply does not support the 30% to 40% EUR and rate improvement needed to even break even on the extra incremental CapEx proposed by Permian resources well count. Furthermore, due to optimum well count Cimarex's plan is self-funding with payout in < 1 year. This is important for follow up benches that Cimarex will be able to rapidly develop out of lease cashflow, whereas Permian resources would require debt to fund an annual drilling program and would be significantly more exposed to commodity pricing jeopardizing timely development of subsequent benches.

16. **Exhibit C-11, Slide 15: Landing Zone Matters; Five Years Ago, Cimarex's Perry Test Confirmed 3<sup>rd</sup> SS Landing as Best Target.** Cimarex confirmed 3<sup>rd</sup> sand as best landing zone 5 years ago in 2018 with the Perry 4H 1 mile South of the contested acreage block. Over the life of the well, we see the old conventional 3<sup>rd</sup> Sand landing outperform other landings. Fracs evolved over time to modern slick water completions. Today most companies pump between 2000#/ft and 3000#/ft and 38 bbl/ft up to 60 bbl/ft with 6 to 14 clusters per stage depending on the target. It is highly unusual for a legacy frac, that is, one more conventional (i.e., <2016 with low

cluster count, long stages, and unfocused frac energy), to better access reservoir than a modern frac (>2016 vintage with high cluster count, short stages, very focused frac energy). The best explanation for 478#/ft 3<sup>rd</sup> Sand frac outperforming 5 to 6 times the frac energy pumped in the Wolfcamp test well is that the vast majority of oil reserves and best rock fabric flow properties are located within the 3<sup>rd</sup> Sand, and not in the Upper Wolfcamp. Thus, drilling into the Upper Wolfcamp is a waste of resources.

17. The dataset that identifies all the wells in the Area of Interest that I used in my analysis and that played a role in my conclusions is attached hereto as **Exhibit C-12**.

18. The Exhibits to this Self-Affirmed Statement were prepared by me or compiled from Cimarex's company business records under my supervision.


19. As explained by the foregoing, the granting of Cimarex's Applications are in the best interests of conservation, the prevention of waste, and the protection of correlative rights.


20. The foregoing is correct and complete to the best of my knowledge and belief.

*[Signature page follows]*

*Signature page of Self-Affirmed Statement of Eddie Behm:*

I understand that this Self-Affirmed Statement will be used as written testimony before the Division in Case Nos. 23448-23455 and 23594 – 23601 and affirm that my testimony herein is true and correct, to the best of my knowledge and belief and made under penalty of perjury under the laws of the State of New Mexico.

  
Eddie Behm

  
Date Signed



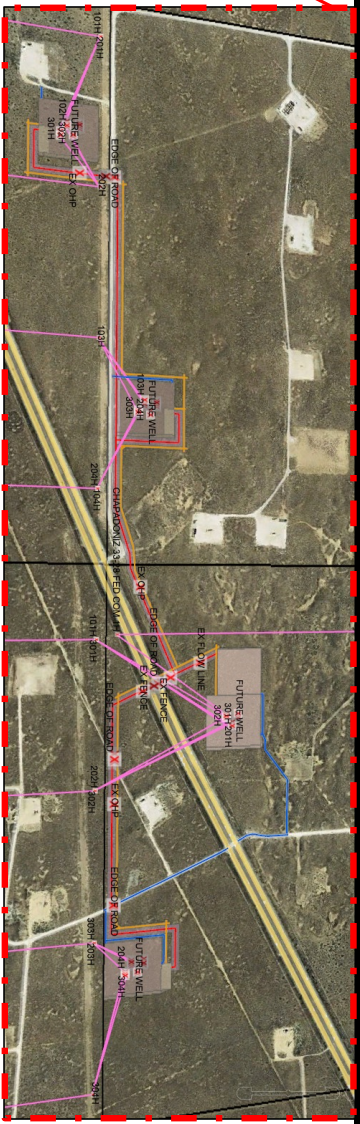
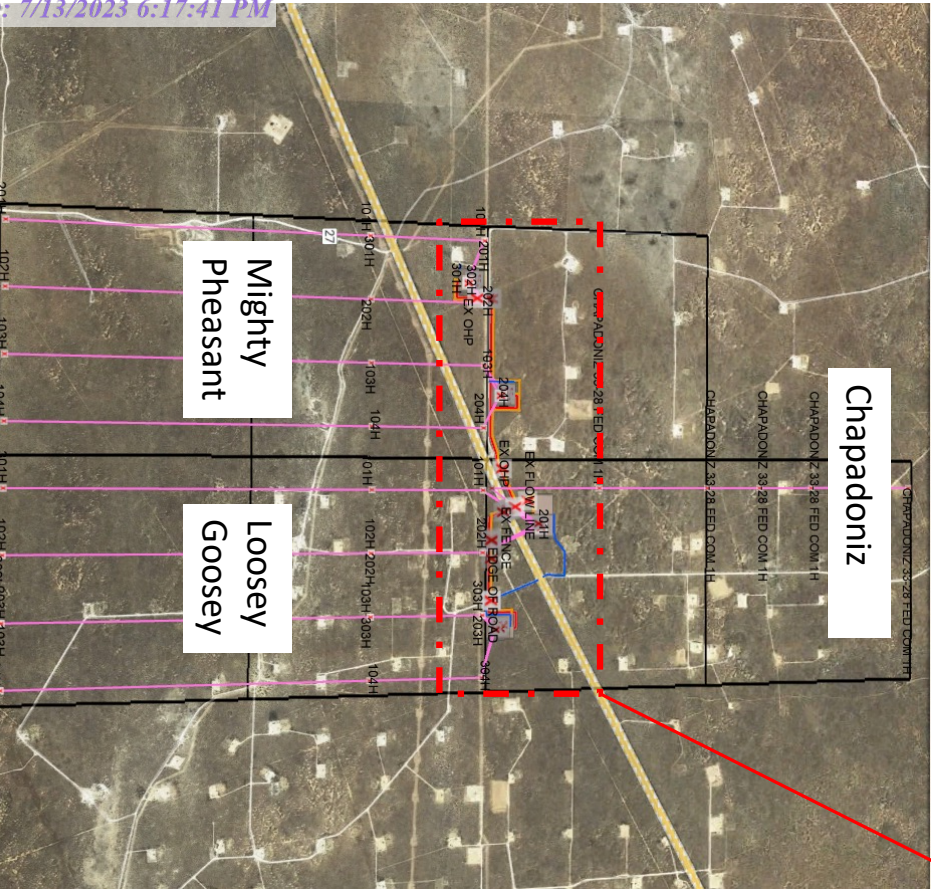
COTERRA

# *Development Strategy*



# Mighty Pheasant Loosey Goosey Development Plan

1 mile



- Single Battery develops – 27 to 34 planned wells
- Oil water gas power ROW connects 4 drilling pads with on pad separation to Battery
- Single battery eliminates 2 additional batteries worth of disturbance and high-risk emissions devices.
- Cimarex permits 0 routine flaring, and our design has >=90% low pressure vapor capture
- Roads (2.33) acres, pads (25.25 acres) and battery (6.31 acres) create ~33.9 acres of disturbance allowing for full development of ~2880 acres, 1.17% disturbance.
- Pipelines are onetime construction; follow-up wells will use existing gathering off pad which is installed the first time a well is drilled off a drill pad. All future wells create no new disturbance off drill pads minimizing environmental impact



# Capital Plan Comparison Mighty Pheasant vs. Joker

Mighty Pheasant			
Res	Well	AFE Capex	June Current Cost
1st	101H	\$8,570,695	\$9,651,993
1st	102h	\$9,450,693	\$9,651,993
1st	103H	\$9,450,693	\$9,651,993
1st	104H	\$9,450,693	\$9,651,993
Upper 2nd*	NA	\$8,570,695	\$9,651,993
Upper 2nd*	NA	\$8,570,695	\$9,651,993
Upper 2nd**	NA	\$8,570,695	\$9,651,993
2nd	201H	\$8,570,695	\$9,651,993
2nd	202H	\$8,570,695	\$9,651,993
2nd	203H	\$8,570,695	\$9,651,993
2nd	204H	\$8,570,695	\$9,651,993
3rd	301H	\$9,428,854	\$10,621,993
3rd	302H	\$9,428,854	\$10,621,993
3rd	303H	\$9,408,850	\$10,621,993
3rd	304H	\$9,408,850	\$10,621,993
<b>Total Gross Capex</b>		<b>\$134,593,047</b>	<b>\$148,659,895</b>

Permian Resources - Joker			
Res	Well	AFE Capex	June Current Cost
1st	111	\$10,724,193	
1st	112	\$10,724,193	
1st	113	\$10,724,193	
1st	114	\$10,724,193	
uppr 2nd	122	\$11,020,308	
uppr 2nd	124	\$11,020,308	
uppr 2nd	126	\$11,020,308	
uppr 2nd	128	\$11,020,308	
2nd	121	\$11,020,308	
2nd	123	\$11,020,308	
2nd	125	\$11,020,308	
2nd	127	\$11,020,308	
3rd bs	131H	\$11,535,757	
3rd bs	132H	\$11,535,757	
3rd bs	133H	\$11,535,757	
3rd bs	134H	\$11,535,757	
3rd bs	171H	\$11,308,013	
3rd bs	172H	\$11,308,013	
3rd bs	173H	\$11,308,013	
3rd bs	174H	\$11,308,013	
WC	201H	\$11,877,862	
WC	202H	\$11,877,862	
WC	203H	\$11,877,862	
WC	204H	\$11,877,862	
<b>Total Gross Capex</b>		<b>\$269,945,764</b>	<b>?</b>

\*Note: we have planned for upper 2nd, acquiring data on 3rd sand wells to confirm adequate flow, saturation, and in place in this ~60-foot target and will execute if viable.

**Permian plan is \$135MM more / 1280 acres with proposal Capex, ~100% more Capex, bad for WI owners:**

\$ 92.7 MM, shown in red, Cimarex models as uneconomic non additive wells with reserves best captured by single landing.  
 \$ 31.6 MM, where well counts are ~ = Permian costs are \$ 2.1 MM to \$2.4MM higher/well at time of proposal  
 \$ 11 MM, one additional 2nd sand well vs. Cimarex Proven spacing.  
 Permian Resources contracts, practices, and development plan is >= \$121MM of waste driven by Frac cost and Well Count

**EXHIBIT C-2**





# Permit Status

State	County	Well Name & Number	Permit Status	Permit Submission Due Date	Permit Submitted Date	10-Day Letter Date	10-Day Letter Due
NM	Lea	Mighty Pheasant 5-8 Fed Com 101H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 102H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 103H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 104H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 201H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 202H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 203H	To be permitted				
NM	Lea	Mighty Pheasant 5-8 Fed Com 204H	AFMSS-Accepted	2/14/2022	2/14/2022	6/2/2023	7/17/2023
NM	Lea	Mighty Pheasant 5-8 Fed Com 301H	AFMSS-Accepted	3/1/2022	3/1/2022		
NM	Lea	Mighty Pheasant 5-8 Fed Com 302H	AFMSS-Accepted	3/2/2022	3/2/2022		
NM	Lea	Mighty Pheasant 5-8 Fed Com 303H	AFMSS-Accepted	2/14/2022	2/14/2022	6/2/2023	7/17/2023
NM	Lea	Mighty Pheasant 5-8 Fed Com 304H	AFMSS-Accepted	3/1/2022	3/1/2022	6/2/2023	7/17/2023
NM	Lea	Loosey Goosey 4-9 Fed Com 101H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 102H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 103H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 104H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 201H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 202H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 203H	To be permitted				
NM	Lea	Loosey Goosey 4-9 Fed Com 204H	AFMSS-Accepted	3/15/2022	3/15/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 301H	AFMSS-Accepted	3/9/2022	3/9/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 302H	AFMSS-Accepted	3/9/2022	3/9/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 303H	AFMSS-Accepted	3/15/2022	3/15/2022		
NM	Lea	Loosey Goosey 4-9 Fed Com 304H	AFMSS-Accepted	3/15/2022	3/15/2022		

Submitted permits for 3<sup>rd</sup> Sand development & 1<sup>st</sup> Sand/2<sup>nd</sup> Sand test  
 BLM is currently working on these



COTERRA

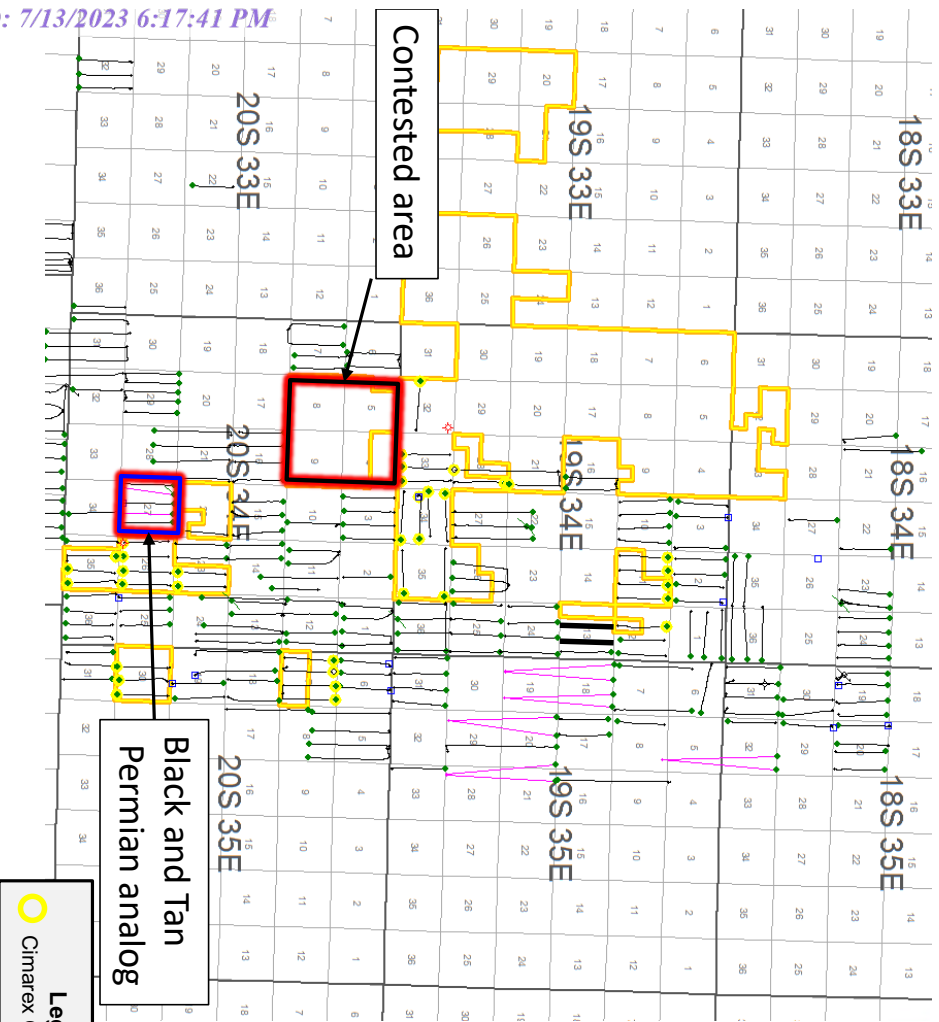
# *3<sup>rd</sup> Bone Spring Sand*



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

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

## 3<sup>rd</sup> Bone Spring Sand Producers



## Wolfcamp Producers

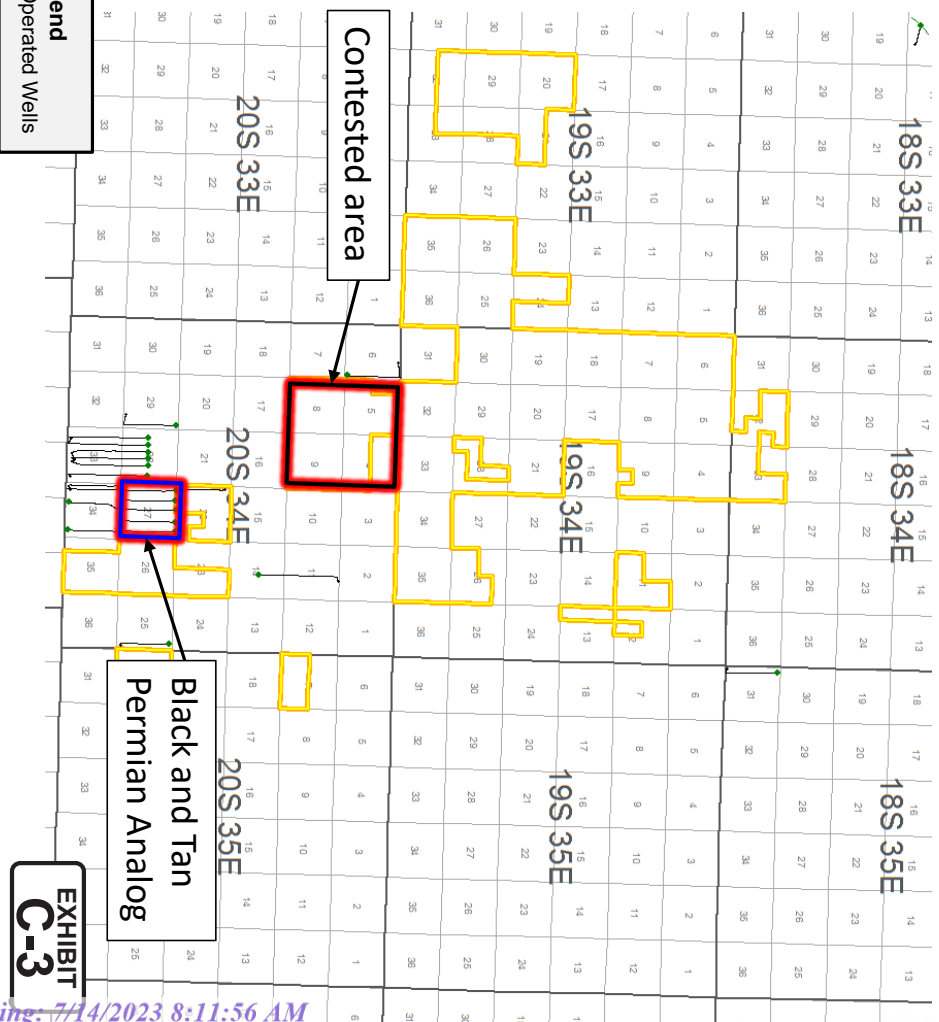


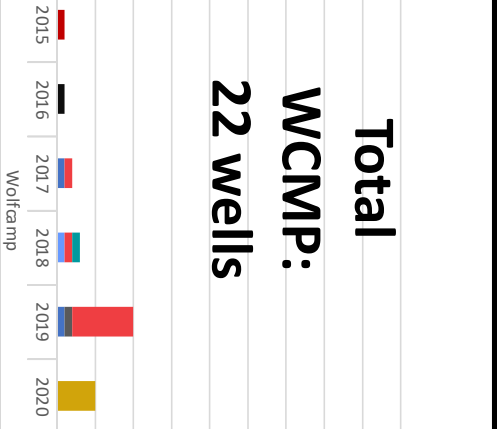
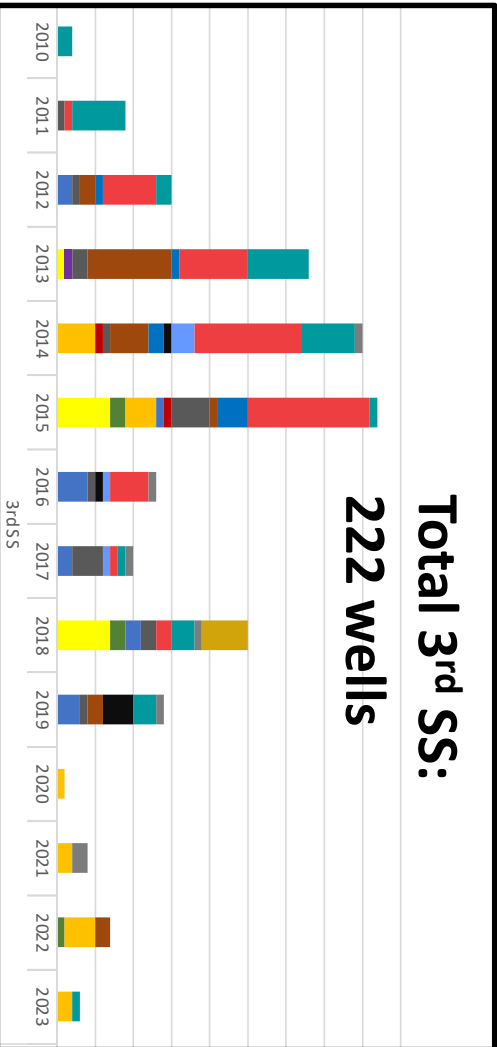
EXHIBIT C-3



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

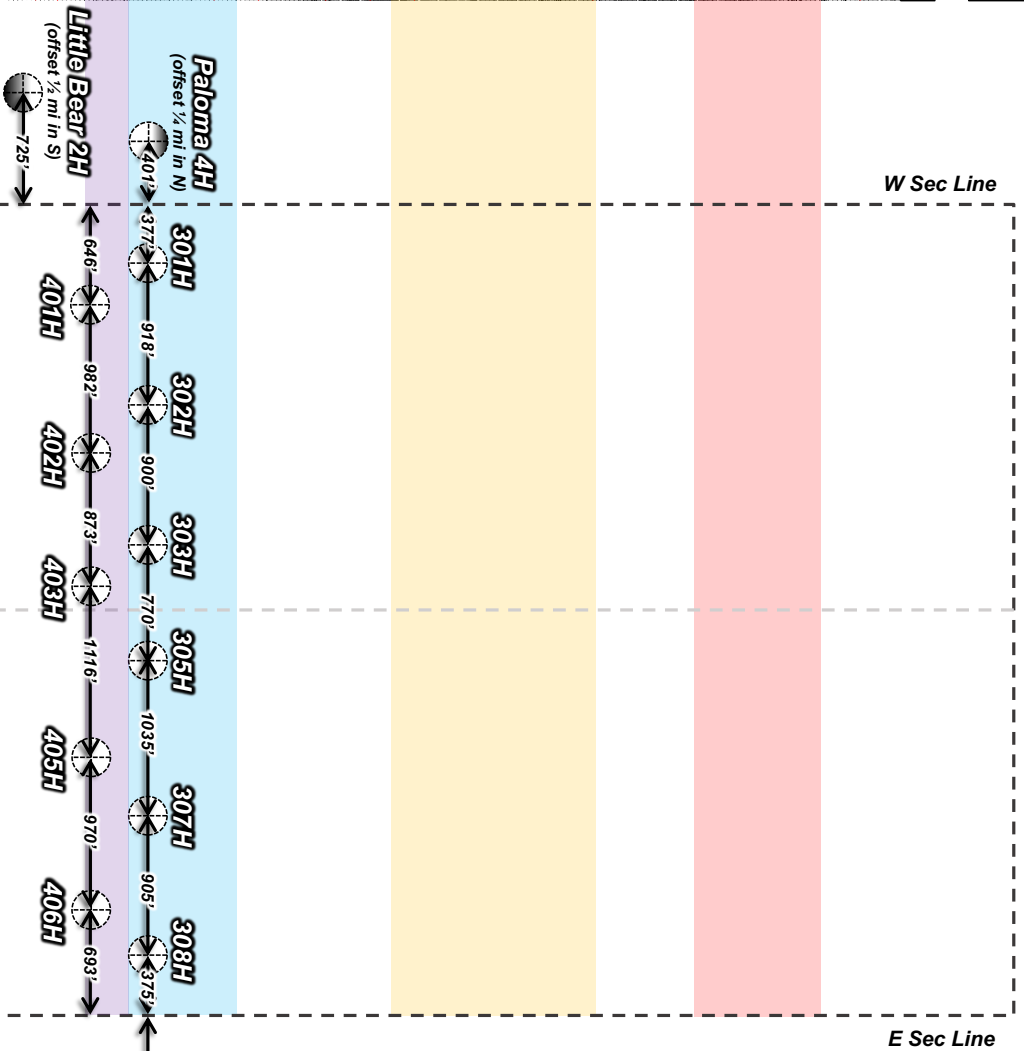
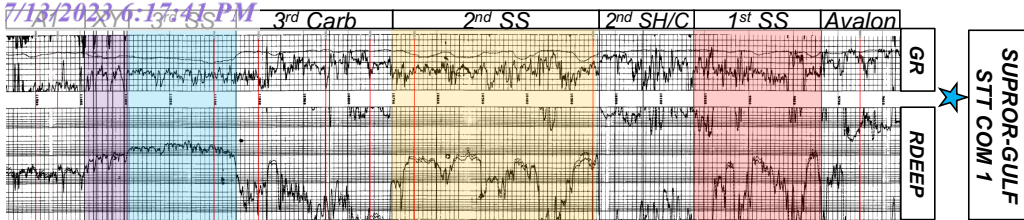
- 3<sup>rd</sup> Sand / single bench landing supported by 236 wells, 97%.
- 13 of 22 WCMP were drilled instead of 3<sup>rd</sup> SS
- 5 of 22 WCMP drilled as a separate bench
- 3 WCMP stack tests with 3<sup>rd</sup> Sand

Well Count



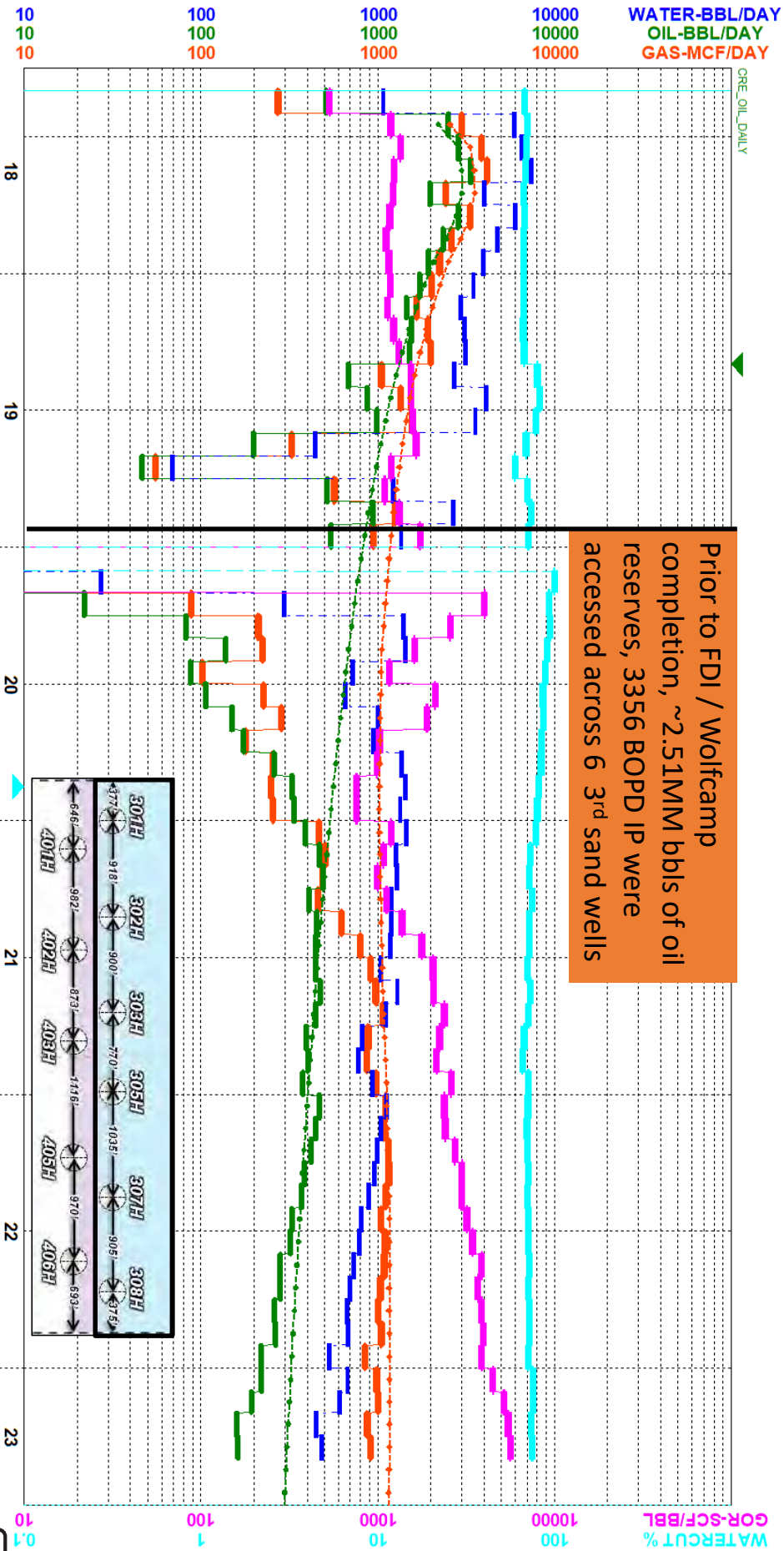
Operator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2015	2016	2017	2018	2019	2020	
APACHE CORP																					
CAZA OPERATING LLC																					
CIMAREX ENERGY CO																					
COG OPERATING LLC																					
EARTHSTONE OPERATING LLC																					
EOG RESOURCES INC																					
FASKEN OIL & RANCH LTD																					
FRANKLIN MOUNTAIN ENERGY 3 LLC																					
LEGACY RESERVES OPERATING LP																					
MARATHON OIL PERMIAN LLC																					
MATADOR PRODUCTION CO																					
MEWBOURNE OIL CO																					
RAYBAW OPERATING LLC																					
READ & STEVENS INC																					
XTO ENERGY INC																					

EXHIBIT C-4

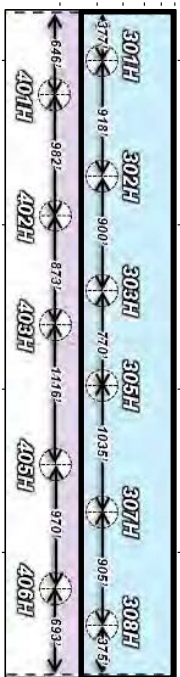




# Black and Tan 3<sup>rd</sup> Sand Composite Forecast 6 Wells (Before WC completion)



Prior to FDI / Wolfcamp completion, ~2.51MM bbls of oil reserves, 3356 BOPD IP were accessed across 6 3<sup>rd</sup> sand wells

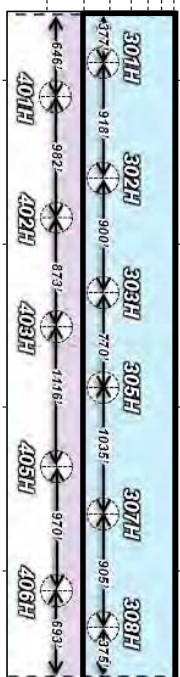
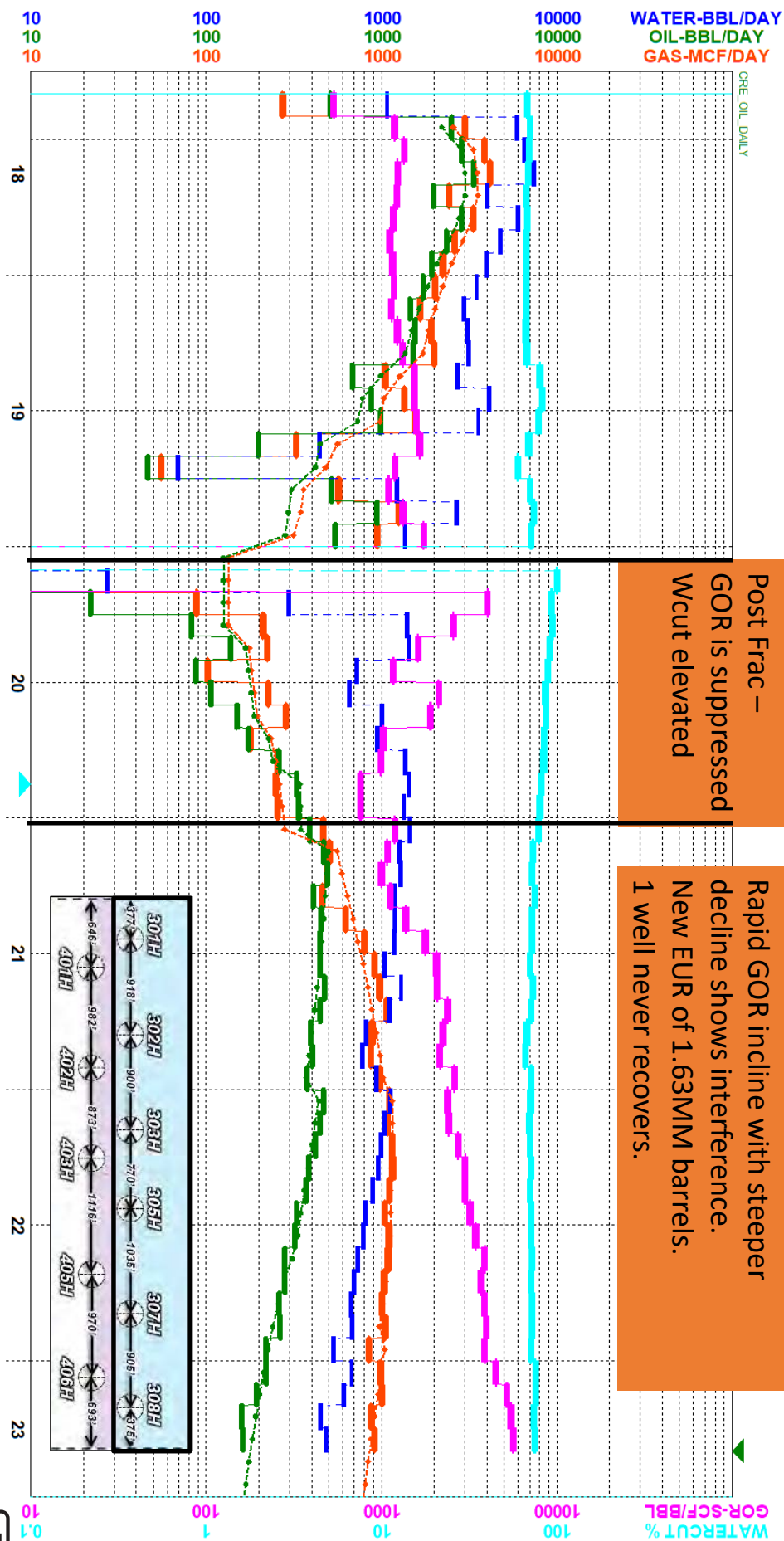


Qual	Results	Fact
EUR	5/1/2019	
Ref	681,000	
Vact	1274,272	
Obeg	1323,258	
Oab	0,000	
"g"	0,000,000	
De	0,000,000	
Dm	0,000	
Yrs	49,167	
Rem	1796744	
Cum	790229	
EUR	2906973	

**EXHIBIT C-5**



# Black and Tan 3rd Sand Composite Forecast 6 Wells Post Wolfcamp Frac

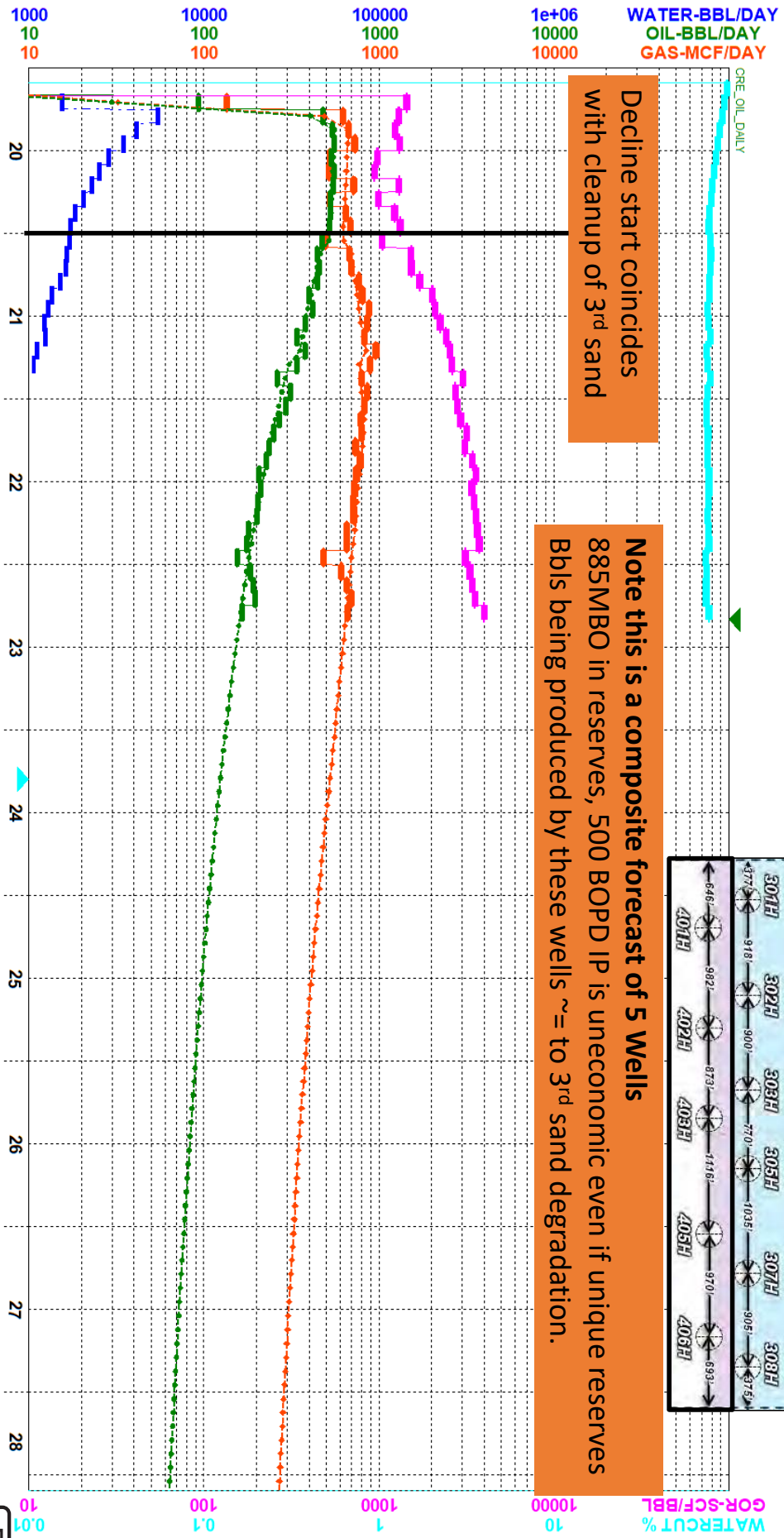


Qual	Fac	Results
EURPAC	5/1/2023	
Rel	0.000	
Vac	173,490	
Obeg	173,285	
Qde	0.000	
"b"	0.000000	
De	0.000000	
Dm	0.000	
Yrs	45.083	
Rem	376112	
Cum	1252382	
EUR	1828494	

EXHIBIT  
C-6  
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# Black and Tan Wolfcamp Composite Forecast 5 Wells



Results	Fact
Qual	E18
Ref	5/1/2023
Vact	0.000
Vest	158,504
Qbeg	160,501
Qend	0.000
"p"	0.000000
De	0.000000
Dim	0.000
Yrs	46,917
Rem	49,2658
Cum	39,2461
EUR	88,9120

**EXHIBIT C-7**



# Lessons Learned from the Black and Tan Development

PROJECT = Black & Tan 27	
30025461240000   BLACK & TAN 27 FEDERAL COM #405H   BLACK & TAN 27 FEDERAL COM   WOLFCAMP A   APACHE CORP   LEA   4583   09/01/2019   102/26/2020   10E334E781	Completed 2nd
30025460720000   BLACK & TAN 27 FEDERAL COM #401H   BLACK & TAN 27 FEDERAL COM   WOLFCAMP A   APACHE CORP   LEA   4666   11/01/9/2019   01/22/2020   AFD8F0925C	
30025460730000   BLACK & TAN 27 FEDERAL COM #402H   BLACK & TAN 27 FEDERAL COM   WOLFCAMP SANDS XX   SAND   APACHE CORP   LEA   4561   08/17/2019   102/26/2020   84C53386	
30025461230000   BLACK & TAN 27 FEDERAL COM #403H   BLACK & TAN 27 FEDERAL COM   WOLFCAMP SANDS XX   SAND   APACHE CORP   LEA   4629   09/08/2019   102/26/2020   607292AC	
30025460750000   BLACK & TAN 27 FEDERAL COM #406H   BLACK & TAN 27 FEDERAL COM   WOLFCAMP SANDS XX   SAND   APACHE CORP   LEA   4694   09/29/2019   102/26/2020   F44F2545	
30025440180000   BLACK & TAN 27 FEDERAL COM #302H   BLACK & TAN 27 FEDERAL COM   3RD BONE SPRING SAND   APACHE CORP   LEA   4416   11/21/2017   106/01/2018   1163AC020E2	
30025440170000   BLACK & TAN 27 FEDERAL COM #301H   BLACK & TAN 27 FEDERAL COM   3RD BONE SPRING SAND   APACHE CORP   LEA   4526   11/15/2017   106/01/2018   40288A1B23	
30025439210100   BLACK & TAN 27 FEDERAL COM #303H   BLACK & TAN 27 FEDERAL COM   3RD BONE SPRING SAND   APACHE CORP   LEA   4360   11/01/24/2017   105/18/2018   748D25084E	
30025439400000   BLACK & TAN 27 FEDERAL COM #305H   BLACK & TAN 27 FEDERAL COM   3RD BONE SPRING SAND   APACHE CORP   LEA   4524   09/17/2018   105/23/2018   A635468807	
30025440440000   BLACK & TAN 27 FEDERAL COM #307H   BLACK & TAN 27 FEDERAL COM   3RD BONE SPRING SAND   APACHE CORP   LEA   4303   01/07/2018   105/16/2018   CF72E02929	
30025440450000   BLACK AND TAN 27 FEDERAL COM #308H   BLACK AND TAN 27 FEDERAL COM   3RD BONE SPRING SAND   APACHE CORP   LEA   4340   01/30/2018   105/05/2018   A7CD07	Completed 1st

## WC vs. 3rd sand comparison shows stagger is capital waste

- 3rd sand IP is > 6 X Wolfcamp
- Wolfcamp oil rate ~ = to 3rd sand rate decrease
- Wolfcamp reserves ~ = to 3rd sand EUR decrease
- 5 Wolfcamp wells added ~ 0 additional bbls

Table 1.0 Comparison of 3rd sand to Wolfcamp	3rd Sand			Wolfcamp	(Wolfcamp - 3rd Sand Delta) = value added from 5 wells
	3rd Bone Spring	3rd Bone Post frac	3rd Sand Delta		
IP30 BOPD	3,356	NA	NA	555	NA
Pre vs. Post frac oil rate BOPD	950	500	-450	+555	105
EUR MMBO	2.51	1.63	-0.88	+0.89	0.01

## 3rd sand is the landing for this single bench target

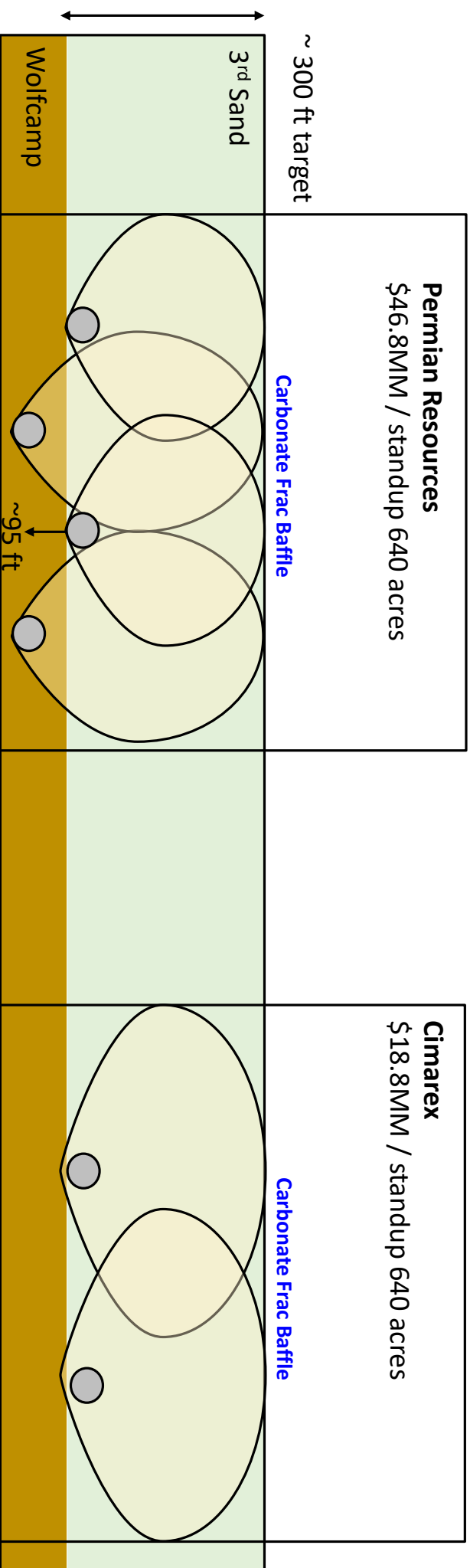
- 268% Phi H vs. Wolfcamp
- 3rd sand delta compounded by being cleaner with better flow property's than the Wolfcamp

Table 1.1 Analog Comparison		3rd Sand	Wolfcamp	3rd SS % of total	3rd / Wolfcamp Comparison %
PHIH		26.75	10	72.8	268





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



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





## Black and Tan Analog Comparison To MP/LG

Table 1.2		Black and Tan		Mighty Pheasant Loosey Goosey	
Analog Comparison	3rd Sand	Wolfcamp	3rd SS % of total	3rd Sand	3rd SS % of total
PHIH	22	7	76	27	73

- Contested acreage is expected to outperform Black and Tan 2.5MMbbo / 640-acre Technical EUR by ~20%
- Over performance driven by improved PHIH of 3rd sand. 27/22 = 122%.
- Sensitivities highlight impact of capital waste given 0% uplift on Black and Tan Wolfcamp 3rd SS analog
  - Table 1.3 - Wolfcamp must add ~40% reserves to break even vs Cimarex Development at P90 reserves case
  - Table 1.4 - Wolfcamp must add ~31% reserves to break even vs. Cimarex Development at SM business case
  - Neither Table 1.3 or 1.4 increase in performance is reasonable to expect given public data

Table 1.3 Reserves Economic Comparison 10MM Technical EUR DSU					
\$65 flat analysis at Cimarex WI & NRI			Permian		Cimarex
Reserves	IP	Economic EUR MBO	PV10 \$MM	Payout months	PV10 \$MM
100%	14,738	8,860	14.7	43	41.8
110% expected	16,212	9,820	21.4	33	12
120% expected	17,685	10,780	28.2	26	
130% expected	19,159	11,740	34.9	23	
140% expected	20,633	12,700	41.5	21	

Table 1.4 Development Comparison 12MM Technical EUR DSU					
\$65 flat analysis at Cimarex WI & NRI			Permian		Cimarex
12 MM EUR	IP	Economic EUR MBO	PV10 \$MM	Payout months	PV10 \$MM
100%	18,897	11,026	34.8	23	61.9
110% expected	20,787	12,987	43.6	20	10
120% expected	22,676	14,233	52.3	18	
130% expected	24,566	15,480	61	16	
140% expected	26,456	16,727	69.7	15	

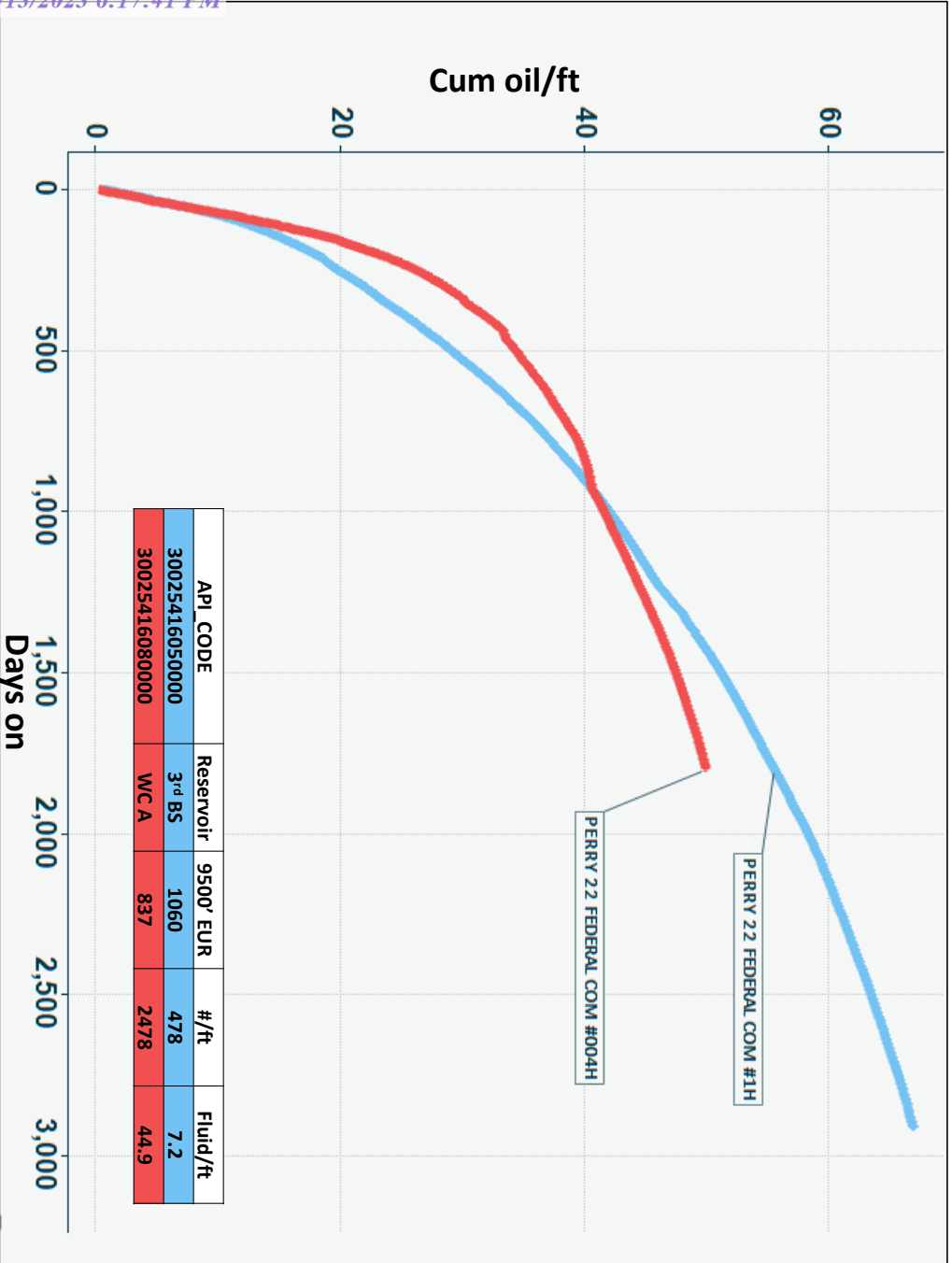
- In order to create equivalent PV10, Wolfcamp landings must add ~40% more reserves vs reserves estimate (table 1.3) and 31% more reserves vs. P50 expectation (table 1.4). This outcome is unrealistic vs. observed results.
- Cimarex lower terminal fixed OpEx + less well degradation results in 9.1MM EUR vs. Permian 8.9MM EUR at 100% reserves expectation.
- The Cimarex plan self-funds annual drilling after first batch of wells supporting rapid development
- Permian plan supports slower development speed

EXHIBIT  
C-10

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**Landing Zone Matters; 5 Years Ago, Cimarex's Perry Test Confirmed 3<sup>rd</sup> SS Landing as Best Target**



- Note: 5 to 6 x the frac energy is not as important as the right landing zone.**
- The Perry 1H 2014 vintage 3<sup>rd</sup> sand well outperforms modern 2018 Perry 4H Wolfcamp completion in the same section at better oil cut 1 mile south of contested development area.
  - The best flow properties and majority of bbls are best accessed from the 3<sup>rd</sup> sand where they are located



## Exhibit C12 3rd SS WC API List

Exhibit C12 API list			
UWI (APINum)	Well Label	Operator	Formation
30025024240100	LEA UNIT 4H	LEGACY RESERVES OPERATING LP	3rd SS
30025328180000	MALLON `34` FEDERAL 16	CIMAREX ENERGY CO	3rd SS
30025393820100	MALLON 35 FEDERAL 4H	CIMAREX ENERGY CO	3rd SS
30025395550000	TUSK FEDERAL 2H	COG OPERATING LLC	3rd SS
30025397630100	MALLON 34 FEDERAL 18H	CIMAREX ENERGY CO	3rd SS
30025398940100	MALLON 34 FEDERAL 19	CIMAREX ENERGY CO	3rd SS
30025400350000	AIRCOBRA 12 STATE 002H	COG OPERATING LLC	3rd SS
30025400400000	QUAIL RIDGE 32 STATE 3H	CIMAREX ENERGY CO	3rd SS
30025400860000	MALLON 35 FEDERAL 7H	CIMAREX ENERGY CO	3rd SS
30025401150000	LYNCH 23 FEDERAL 1H	CIMAREX ENERGY CO	3rd SS
30025401230000	LYNCH 23 FEDERAL 2H	CIMAREX ENERGY CO	3rd SS
30025401350000	MALLON 34 FEDERAL 20	CIMAREX ENERGY CO	3rd SS
30025402530100	CHAPARRAL 33 FEDERAL 3H	CIMAREX ENERGY CO	3rd SS
30025403270000	HANSON 26 FEDERAL 1H	CIMAREX ENERGY CO	3rd SS
30025403280000	CHAPARRAL 33 FEDERAL COM 4	CIMAREX ENERGY CO	3rd SS
30025403300000	EAGLE `2` STATE 006H	MATADOR PRODUCTION CO	3rd SS
30025403610000	QUAIL `16` STATE COM 003H	FASKEN OIL & RANCH LTD	3rd SS
30025403880100	KING COBRA 2 STATE 1H	COG OPERATING LLC	3rd SS
30025403970000	AIRSTRIP 6 STATE COM 2H	COG OPERATING LLC	3rd SS
30025404040000	WILD COBRA 1 STATE 2H	COG OPERATING LLC	3rd SS
30025404050100	PLAYA 2 STATE 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025404250000	WEST PEARL 36 STATE 002H	COG OPERATING LLC	3rd SS
30025404300000	TIGER `11` FEDERAL 1H	COG OPERATING LLC	3rd SS
30025405310000	QUAIL `16` STATE 004H	FASKEN OIL & RANCH LTD	3rd SS
30025405490000	PLAYA 2 STATE 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406040100	IGLOO 19 STATE 2H	CAZA OPERATING LLC	3rd SS
30025406110000	IRONHOUSE 20 STATE 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406340000	BUTTER CUP 35 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406370000	HANSON 26 FEDERAL 3H	CIMAREX ENERGY CO	3rd SS
30025406400000	BUTTER CUP 36 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406410000	BUTTER CUP 36 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406420000	BUTTER CUP 35 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406760100	IRONHOUSE 19 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025406970000	LAGUNA 23 FEDERAL COM 002H	EARTHSTONE OPERATING LLC	3rd SS
30025406980100	LEA UNIT 30H	LEGACY RESERVES OPERATING LP	3rd SS
30025406990100	LEA UNIT 31H	LEGACY RESERVES OPERATING LP	3rd SS
30025407250100	OUTLAW `22` FEDERAL COM 1H	COG OPERATING LLC	3rd SS
30025407270000	MONGOOSE FEE 001H	MATADOR PRODUCTION CO	3rd SS
30025407420000	LAGUNA 23 FEDERAL COM 1H	EARTHSTONE OPERATING LLC	3rd SS
30025407480000	IRONHOUSE 20 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025407500000	LYNCH 35-2H	CIMAREX ENERGY CO	3rd SS
30025407780100	PRICKLY PEAR 6 FEDERAL 4H	COG OPERATING LLC	3rd SS
30025408040000	HANSON 26 FEDERAL 4H	CIMAREX ENERGY CO	3rd SS
30025408140100	CONDOR STATE 001H	COG OPERATING LLC	3rd SS
30025408190000	HANSON 26 FEDERAL 2H	CIMAREX ENERGY CO	3rd SS
30025408250000	LYNCH 35 FEE 1H	CIMAREX ENERGY CO	3rd SS
30025408360000	MERIT 32 DM STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025408410000	QUAIL 11 STATE COM 1H	CIMAREX ENERGY CO	3rd SS
30025408420000	QUAIL 11 STATE COM 2H	CIMAREX ENERGY CO	3rd SS
30025408750000	AIRCOBRA 12 STATE 1H	COG OPERATING LLC	3rd SS

EXHIBIT C-12
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## Exhibit C12 3rd SS WC API List

30025408840000	MERIT 6 EH STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025409420000	QUAIL `16` STATE 007H	FASKEN OIL & RANCH LTD	3rd SS
30025409700000	STRATOJET 31 STATE COM 2H	COG OPERATING LLC	3rd SS
30025409770100	TRES PRIMOS 3 STATE 1H	COG OPERATING LLC	3rd SS
30025409840000	MARATHON ROAD 14 NC FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025410250000	CONDOR STATE 2H	COG OPERATING LLC	3rd SS
30025410500000	IRONHOUSE 19 STATE COM 003H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025410600000	KING COBRA 2 STATE 2H	COG OPERATING LLC	3rd SS
30025410940000	IRONHOUSE 19 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025411060100	GOOSE STATE 001H	COG OPERATING LLC	3rd SS
30025411100000	WILD COBRA 1 STATE 1H	COG OPERATING LLC	3rd SS
30025411310000	PERLA NEGRA FEDERAL COM 1H	XTO ENERGY INC	3rd SS
30025411410000	QUAIL 11 STATE COM 3H	CIMAREX ENERGY CO	3rd SS
30025411480100	CAPROCK 27 STATE FEDERAL COM 1H	RAYBAW OPERATING LLC	3rd SS
30025411520000	AIRSTRIP FEE COM 1H	COG OPERATING LLC	3rd SS
30025411630000	IRONHOUSE 24 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025412010000	GOOSE STATE COM 2H	COG OPERATING LLC	3rd SS
30025412100100	QUAIL 11 STATE COM 4H	CIMAREX ENERGY CO	3rd SS
30025412150000	MARATHON ROAD 14 MD FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025412450200	IRONHOUSE `19` STATE COM 004H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025413050100	HAMON A FEDERAL COM 3H	LEGACY RESERVES OPERATING LP	3rd SS
30025413580100	TUSK FEDERAL 4H	COG OPERATING LLC	3rd SS
30025413660000	QUAIL `16` STATE 8H	FASKEN OIL & RANCH LTD	3rd SS
30025413670100	LEA SOUTH 25 FEDERAL COM 5H	EARTHSTONE OPERATING LLC	3rd SS
30025415190100	NIGHTHAWK STATE COM 1H	MARATHON OIL PERMIAN LLC	3rd SS
30025415320000	SCHARB 10 PA STATE 1H	MEWBOURNE OIL CO	3rd SS
30025415440000	ALBATROSS STATE COM 2H	COG OPERATING LLC	3rd SS
30025415620000	TANGO BTP STATE COM 004H	EOG RESOURCES INC	3rd SS
30025415720100	PRICKLY PEAR 6 FEDERAL 2H	COG OPERATING LLC	3rd SS
30025415730000	TUSK FEDERAL 3H	COG OPERATING LLC	3rd SS
30025415740000	TUSK FEDERAL 5H	COG OPERATING LLC	3rd SS
30025415750000	MARATHON ROAD 15 PA FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025415950000	IRONHOUSE 24 STATE COM 002H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025416050000	PERRY 22 FEDERAL COM 1H	CIMAREX ENERGY CO	3rd SS
30025416120100	ORIOLE STATE 1H	COG OPERATING LLC	3rd SS
30025416170000	HAMON A FEDERAL COM 4H	LEGACY RESERVES OPERATING LP	3rd SS
30025416290000	PRICKLY PEAR 6 FEDERAL 3H	COG OPERATING LLC	3rd SS
30025416300100	HAMON FEDERAL COM A 2H	LEGACY RESERVES OPERATING LP	3rd SS
30025416440000	LYNCH 35 FED COM 3H	CIMAREX ENERGY CO	3rd SS
30025416950000	IRONHOUSE 24 STATE COM 003H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025416960000	IRONHOUSE 24 STATE COM 004H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025417140000	TOMCAT FEE 1H	COG OPERATING LLC	3rd SS
30025417520000	CUATRO HIJOS FEE 4H	COG OPERATING LLC	3rd SS
30025417750000	SCHARB 10 B3OB STATE 1H	MEWBOURNE OIL CO	3rd SS
30025418080000	MALLON 27 FEDERAL COM 003H	MATADOR PRODUCTION CO	3rd SS
30025418090000	ALBATROSS STATE COM 1H	COG OPERATING LLC	3rd SS
30025418330000	TIGER 11 FEDERAL 2H	COG OPERATING LLC	3rd SS
30025418340000	CORDONIZ 28 FEDERAL COM 4H	CIMAREX ENERGY CO	3rd SS
30025418350000	KINGFISHER STATE COM 1H	COG OPERATING LLC	3rd SS
30025418360000	KINGFISHER STATE COM 2H	COG OPERATING LLC	3rd SS
30025418580000	TEAL 12 STATE 2H	CIMAREX ENERGY CO	3rd SS
30025418610000	PERLA VERDE 31 STATE 2H	XTO ENERGY INC	3rd SS

## Exhibit C12 3rd SS WC API List

30025418620000	PERLA VERDE 31 STATE 003H	XTO ENERGY INC	3rd SS
30025418630000	PERLA VERDE 31 STATE 4H	XTO ENERGY INC	3rd SS
30025418790000	CHAPARRAL 33 FEDERAL COM 5H	CIMAREX ENERGY CO	3rd SS
30025418980000	LEA SOUTH 25 FEDERAL COM 6H	EARTHSTONE OPERATING LLC	3rd SS
30025419450000	MARATHON ROAD 15 B3OB FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025419470000	PALOMA 21 FEDERAL COM 4H	FASKEN OIL & RANCH LTD	3rd SS
30025419860000	SCHARB 10 B3NC STATE 1H	MEWBOURNE OIL CO	3rd SS
30025419870100	SUPER COBRA STATE COM 1H	COG OPERATING LLC	3rd SS
30025419930000	PALOMA 21 FEDERAL COM 1H	FASKEN OIL & RANCH LTD	3rd SS
30025419940000	PALOMA 21 FEDERAL COM 2H	FASKEN OIL & RANCH LTD	3rd SS
30025419950000	PALOMA 21 FEDERAL COM 3H	FASKEN OIL & RANCH LTD	3rd SS
30025420340000	STRATOSPHERE 36 STATE COM 3H	COG OPERATING LLC	3rd SS
30025420350000	STRATOSPHERE 36 STATE COM 4H	COG OPERATING LLC	3rd SS
30025420360000	STRATOSPHERE 36 STATE COM 5H	COG OPERATING LLC	3rd SS
30025420370000	STRATOSPHERE 36 STATE COM 6H	COG OPERATING LLC	3rd SS
30025420630000	PERLA VERDE 31 STATE 001H	XTO ENERGY INC	3rd SS
30025420800000	NORTH LEA `3` FEDERAL COM 001H	READ & STEVENS INC	3rd SS
30025421290000	TRES PRIMOS 3 STATE 2H	COG OPERATING LLC	3rd SS
30025421410000	PEARL WEST 36 STATE COM 6H	COG OPERATING LLC	3rd SS
30025421450000	WEST PEARL 36 STATE COM 003H	COG OPERATING LLC	3rd SS
30025421460000	PEARL WEST 36 STATE COM 4H	COG OPERATING LLC	3rd SS
30025421470000	WEST PEARL 36 STATE COM 005H	COG OPERATING LLC	3rd SS
30025421730000	RAPTOR WEST 3 STATE 004H	MARATHON OIL PERMIAN LLC	3rd SS
30025422010000	MARATHON ROAD 15 NC FEDERAL 1H	MEWBOURNE OIL CO	3rd SS
30025422120000	MALLON 27 FEDERAL COM 001H	MATADOR PRODUCTION CO	3rd SS
30025422270000	NORTH LEA 3 FEDERAL COM 002H	READ & STEVENS INC	3rd SS
30025422280000	NORTH LEA `3` FEDERAL COM 003H	READ & STEVENS INC	3rd SS
30025422680000	LEA 7 FEDERAL COM 1H	CIMAREX ENERGY CO	3rd SS
30025422760000	CUATRO HIJOS FEE 3H	COG OPERATING LLC	3rd SS
30025422920000	BLACK PEARL 1 FEDERAL COM 1H	COG OPERATING LLC	3rd SS
30025422930000	BLACK PEARL 1 FEDERAL 002H	COG OPERATING LLC	3rd SS
30025422940000	BLACK PEARL 1 FEDERAL 3H	COG OPERATING LLC	3rd SS
30025422950000	BLACK PEARL 1 FEDERAL 4H	COG OPERATING LLC	3rd SS
30025423150000	MALLON 27 FEDERAL COM 2H	MATADOR PRODUCTION CO	3rd SS
30025423380100	BLUE JAY FEDERAL 001H	COG OPERATING LLC	3rd SS
30025423420000	LEA UNIT 32H	LEGACY RESERVES OPERATING LP	3rd SS
30025423430000	LEA UNIT 33H	LEGACY RESERVES OPERATING LP	3rd SS
30025423440000	LEA UNIT 34H	LEGACY RESERVES OPERATING LP	3rd SS
30025423520000	CIMARRON 16-19-34 RN STATE 134H	MATADOR PRODUCTION CO	3rd SS
30025423570100	IGLOO `19` STATE 3H	CAZA OPERATING LLC	3rd SS
30025423670000	BUTTER CUP 36 STATE COM 003H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025423770000	IGGLES STATE COM 001H	COG OPERATING LLC	3rd SS
30025424300000	STRATOJET 31 STATE COM 8H	COG OPERATING LLC	3rd SS
30025424720000	KINGFISHER STATE COM 5H	COG OPERATING LLC	3rd SS
30025424990000	PICKARD 20 18 34 RN STATE 124H	MATADOR PRODUCTION CO	3rd SS
30025425210000	SCHARB 10 B3MD STATE 1H	MEWBOURNE OIL CO	3rd SS
30025425460000	LEA 7 FEDERAL COM 2H (P&A 12/27/	CIMAREX ENERGY CO	3rd SS
30025425770000	PERLA NEGRA FEDERAL COM 4H	XTO ENERGY INC	3rd SS
30025426840000	NORTH LEA `3` FEDERAL COM 004H	READ & STEVENS INC	3rd SS
30025427090000	PERLA NEGRA FEDERAL COM 2H	XTO ENERGY INC	3rd SS
30025427100000	PERLA NEGRA FEDERAL COM 3H	XTO ENERGY INC	3rd SS
30025428850000	LEA UNIT 44H	LEGACY RESERVES OPERATING LP	3rd SS

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30025429490000	LEA UNIT 54H	LEGACY RESERVES OPERATING LP	3rd SS
30025429500000	MAS FEDERAL 3H	COG OPERATING LLC	3rd SS
30025429580000	LEA UNIT 051H	LEGACY RESERVES OPERATING LP	3rd SS
30025429720000	DESERT ROSE 17-8 FEDERAL COM 001	CAZA OPERATING LLC	3rd SS
30025429790000	CIMARRON 16 19S 34E RN STATE COM	MATADOR PRODUCTION CO	3rd SS
30025429880100	EAGLECLAW FEDERAL 001H	CAZA OPERATING LLC	3rd SS
30025430290000	LEA SOUTH 25 FEDERAL COM 3BS 007	EARTHSTONE OPERATING LLC	3rd SS
30025430350000	LEA UNIT 059H	LEGACY RESERVES OPERATING LP	3rd SS
30025430540000	DELLA 29 FEDERAL COM 602H	EOG RESOURCES INC	3rd SS
30025430770000	LEA UNIT 038H	LEGACY RESERVES OPERATING LP	3rd SS
30025432470100	LEA UNIT 062H	LEGACY RESERVES OPERATING LP	3rd SS
30025432500000	HAMON A FED COM 009H	LEGACY RESERVES OPERATING LP	3rd SS
30025434150000	SEVERUS 31 FEDERAL COM 001H	XTO ENERGY INC	3rd SS
30025434160000	SEVERUS 31 FEDERAL COM 002H	XTO ENERGY INC	3rd SS
30025434170000	SEVERUS 31 FEDERAL COM 003H	XTO ENERGY INC	3rd SS
30025434180000	SEVERUS 31 FEDERAL COM 004H	XTO ENERGY INC	3rd SS
30025434680100	CHIEF 30 STATE 7H	CIMAREX ENERGY CO	3rd SS
30025435330000	BLUE JAY FEDERAL COM 002H	COG OPERATING LLC	3rd SS
30025436800000	NORTH LEA 10 FEDERAL 002H	READ & STEVENS INC	3rd SS
30025437410000	ESPEJO FEDERAL COM 001H	XTO ENERGY INC	3rd SS
30025437420000	ESPEJO FEDERAL COM 002H	XTO ENERGY INC	3rd SS
30025437770000	ESPEJO FEDERAL COM 003H	XTO ENERGY INC	3rd SS
30025437920000	STRATOJET 31 STATE COM 007H	COG OPERATING LLC	3rd SS
30025438160100	AIRSTRIP 31 18 35 RN STATE COM #132H	MATADOR PRODUCTION CO	3rd SS
30025439210100	BLACK & TAN 27 FEDERAL COM 303H	APACHE CORP	3rd SS
30025439400000	BLACK & TAN 27 FEDERAL COM 305H	APACHE CORP	3rd SS
30025440170000	BLACK & TAN 27 FEDERAL COM 301H	APACHE CORP	3rd SS
30025440180000	BLACK & TAN 27 FEDERAL COM 302H	APACHE CORP	3rd SS
30025440440000	BLACK & TAN 27 FEDERAL COM 307H	APACHE CORP	3rd SS
30025440450000	BLACK AND TAN 27 FEDERAL COM 308	APACHE CORP	3rd SS
30025440920000	MAS FEDERAL COM 001H	COG OPERATING LLC	3rd SS
30025442130000	CHIEF 30 STATE 8H	CIMAREX ENERGY CO	3rd SS
30025443230000	AIRSTRIP 31-18-35 RN STATE COM 1	MATADOR PRODUCTION CO	3rd SS
30025443410000	VERNA RAE FEDERAL COM 133H	MATADOR PRODUCTION CO	3rd SS
30025443420000	VERNA RAE FEDERAL COM 134H	MATADOR PRODUCTION CO	3rd SS
30025444740000	DELLA 29 FEDERAL COM 603H	EOG RESOURCES INC	3rd SS
30025444750000	DELLA 29 FEDERAL 604H	EOG RESOURCES INC	3rd SS
30025444760000	DELLA 29 FEDERAL 605H	EOG RESOURCES INC	3rd SS
30025444770000	DELLA 29 FEDERAL 606H	EOG RESOURCES INC	3rd SS
30025444950000	EAGLECLAW FEDERAL COM 002H	CAZA OPERATING LLC	3rd SS
30025445090000	AIRSTRIP 31-18-35 RN STATE COM 1	MATADOR PRODUCTION CO	3rd SS
30025449080000	CHIEF 30 STATE 9H	CIMAREX ENERGY CO	3rd SS
30025450540000	MESCALERO RIDGE 21 FEDERAL 1H	CIMAREX ENERGY CO	3rd SS
30025451540000	LEA UNIT 066H	LEGACY RESERVES OPERATING LP	3rd SS
30025451990000	LEA 7 FEDERAL COM 29H	CIMAREX ENERGY CO	3rd SS
30025452000000	LEA 7 FEDERAL COM 30H	CIMAREX ENERGY CO	3rd SS
30025452100000	LEA UNIT 065H	LEGACY RESERVES OPERATING LP	3rd SS
30025454380000	AIRSTRIP 31-18S-35E RN STATE COM	MATADOR PRODUCTION CO	3rd SS
30025458960000	ANCHOR 19 35 33 STATE 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025461400000	CABLE 19 35 9 STATE COM 001H	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025467680000	HEREFORD 29-20 W10B FED COM 001H	MEWBOURNE OIL CO	3rd SS
30025468030000	SANTA VACA 19-18 B3MD STATE COM	MEWBOURNE OIL CO	3rd SS



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30025474570000	TALON 5-8 FEDERAL 001H	CAZA OPERATING LLC	3rd SS
30025474830000	HEREFORD 29-20 W1MD STATE COM 00	MEWBOURNE OIL CO	3rd SS
30025474840000	HEREFORD 29-20 W1NC STATE COM 00	MEWBOURNE OIL CO	3rd SS
30025474860000	TALON 5-8 FEDERAL 005H	CAZA OPERATING LLC	3rd SS
30025491550000	SANTA VACA 19 18 B3NC STATE COM	MEWBOURNE OIL CO	3rd SS
30025499040000	CHAROLAIS 28 21 W1MD STATE COM 0	MEWBOURNE OIL CO	3rd SS
30025499350000	HEREFORD 29 20 W1PA STATE COM 00	MEWBOURNE OIL CO	3rd SS
30025501680000	FOXTAIL E2 05 32 W1 STATE COM 00	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025501690000	FOXTAIL E2 05 32 W1 STATE COM 00	FRANKLIN MOUNTAIN ENERGY 3 LLC	3rd SS
30025502420000	SANTA VACA 19-18 B3OB FEE 001H	MEWBOURNE OIL CO	3rd SS
30025503260000	SANTA VACA 19-18 B3PA FEE 001H	MEWBOURNE OIL CO	3rd SS
30025507240000	MESCALERO RIDGE 21-28 FED COM 2H	CIMAREX ENERGY CO	3rd SS
30025416080000	PERRY 22 FEDERAL COM 4H	CIMAREX ENERGY CO	Wolfcamp
30025419500000	NIGHTHAWK STATE COM 003H	MARATHON OIL PERMIAN LLC	Wolfcamp
30025430530000	DELLA 29 FEDERAL COM 701H	EOG RESOURCES INC	Wolfcamp
30025431100000	LEA SOUTH 25 FEDERAL COM WCA 012	EARTHSTONE OPERATING LLC	Wolfcamp
30025433950000	AIRSTRIP 31 18 35 RN STATE COM 2	MATADOR PRODUCTION CO	Wolfcamp
30025434820000	MAS FEDERAL 4H	COG OPERATING LLC	Wolfcamp
30025442140100	MAS FEDERAL COM 002H	COG OPERATING LLC	Wolfcamp
30025444940000	VERNA RAE FEDERAL COM 204H	MATADOR PRODUCTION CO	Wolfcamp
30025450980100	LITTLE BEAR FEDERAL COM 001H	COG OPERATING LLC	Wolfcamp
30025450990000	LITTLE BEAR FEDERAL COM 003H	COG OPERATING LLC	Wolfcamp
30025451000000	LITTLE BEAR FEDERAL COM 004H	COG OPERATING LLC	Wolfcamp
30025451020000	LITTLE BEAR FEDERAL COM 006H	COG OPERATING LLC	Wolfcamp
30025451030000	LITTLE BEAR FEDERAL COM 007H	COG OPERATING LLC	Wolfcamp
30025451040000	LITTLE BEAR FEDERAL COM 008H	COG OPERATING LLC	Wolfcamp
30025451050000	LITTLE BEAR FEDERAL COM 009H	COG OPERATING LLC	Wolfcamp
30025451490000	LITTLE BEAR FEDERAL COM 002H	COG OPERATING LLC	Wolfcamp
30025452110100	LEA UNIT 100H	LEGACY RESERVES OPERATING LP	Wolfcamp
30025460720000	BLACK & TAN 27 FEDERAL COM 401H	APACHE CORP	Wolfcamp
30025460730000	BLACK & TAN 27 FEDERAL COM 402H	APACHE CORP	Wolfcamp
30025460750000	BLACK & TAN 27 FEDERAL COM 406H	APACHE CORP	Wolfcamp
30025461230000	BLACK & TAN 27 FEDERAL COM 403H	APACHE CORP	Wolfcamp
30025461240000	BLACK & TAN 27 FEDERAL COM 405H	APACHE CORP	Wolfcamp