

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

**APPLICATION OF AVANT OPERATING, LLC
FOR COMPULSORY POOLING AND
APPROVAL OF NON-STANDARD
HORIZONTAL SPACING UNIT,
LEA COUNTY, NEW MEXICO**

Case Nos. 24632 and 24633

REBUTTAL EXHIBIT INDEX

Rebuttal Land Exhibits

- | | |
|------|---|
| A-16 | Avant Ownership in Section 32 |
| A-17 | Response to Marathon Oil Permian Ownership Claims |

Rebuttal Geology Exhibits

- | | |
|------|---|
| B-17 | Stress Direction Rotation |
| B-18 | Lea County Production – Northern v. Southern Portions |

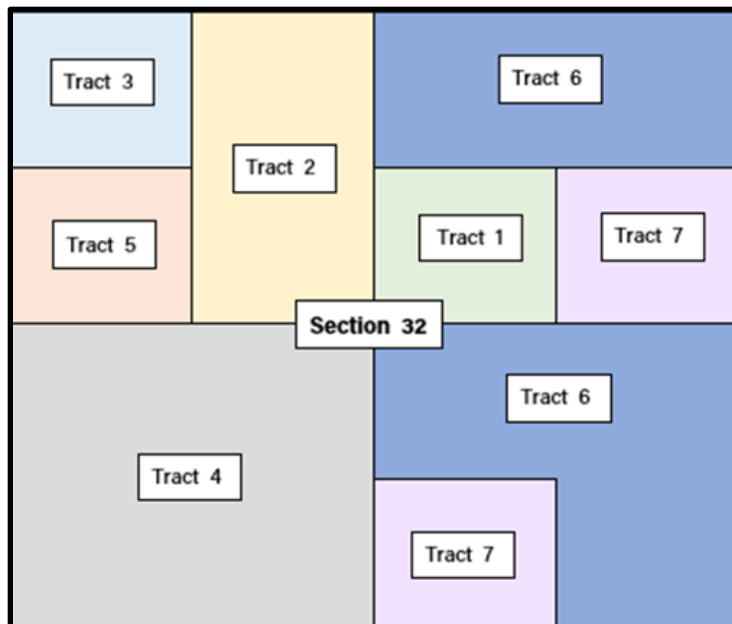
Avant Section 32 Ownership/Control
 Daytona 29 Fed Com
 #301H-#304H / #601H-#604H / #006H-#009H

Avant Operating, LLC
 Case Nos. 24632 & 24633
 Exhibit A-16



Avant’s working control interest in Section 32 is significantly higher than Cimarex claims

- Cimarex Exhibit A-7 (b) claims Avant entities only own 1.20 NMA in Section 32
- Avant has completed several acquisitions in the past year to bolster ownership in Section 32 (HOG Partnership, LP, Diane Cost on Trust, Dorothy and Jeffrey Martin and Donna Priest Trust), none of which seem to be captured in Cimarex’s title
- These parties do not appear to be affected by the 1998 JOA interpretation discussed in Avant’s Exhibit A-15



COMMITTED PARTIES TO SECTION 32 OF DAYTONA UNIT			
Tract	Lease	Acres	WI Committed
Tract 4	VA-0473	2.6667	0.21%
Tract 5	K-4922	8.5538	0.67%
Tract 6	K-4922	40.6267	3.17%
Tract 7	B-0156512	20.0000	1.56%
71.8472			5.61%

COMMITTED PARTIES TO SECTION 32 OF DAYTONA UNIT (WOLFCAMP)			
Tract	Lease	Acres	WI Committed
Tract 4	VA-0473	4.0000	0.31%
Tract 5	K-4922	17.1076	1.34%
Tract 6	K-4922	81.2535	6.35%
Tract 7	B-0156512	20.0000	1.56%
122.3611			9.56%



Marathon Oil Permian Ownership
Daytona 29 Fed Com
#301H-#304H / #601H-#604H / #006H-#009H

Avant Operating, LLC
Case Nos. 24632 & 24633
Exhibit A-17



Marathon Oil Permian ownership may be interpreted differently than shown in submitted exhibits

- Marathon Oil Permian filed an entry of appearance in Cases 24632 and 24633 on October 31 due to a discrepancy in Avant's Exhibit A-6(a) regarding Marathon's interest in the Daytona lands.
- In response, Avant proactively requested its title team to reassess Marathon's ownership. Avant also requested further information from Marathon regarding their purported interest in the lands.
- Avant is actively collaborating with Marathon to resolve the issue, but until Avant receives the requested information from Marathon, the Exhibit A-6 (a) for Cases 24632 and 24633 shall not be amended.
- This potential title update does not affect Avant's or Cimarex's title in the proposed Daytona unit.



Geology Rebuttal

Daytona 29 Fed Com

#301H-#304H / #601H-#604H / #006H-#009H

Avant Operating, LLC

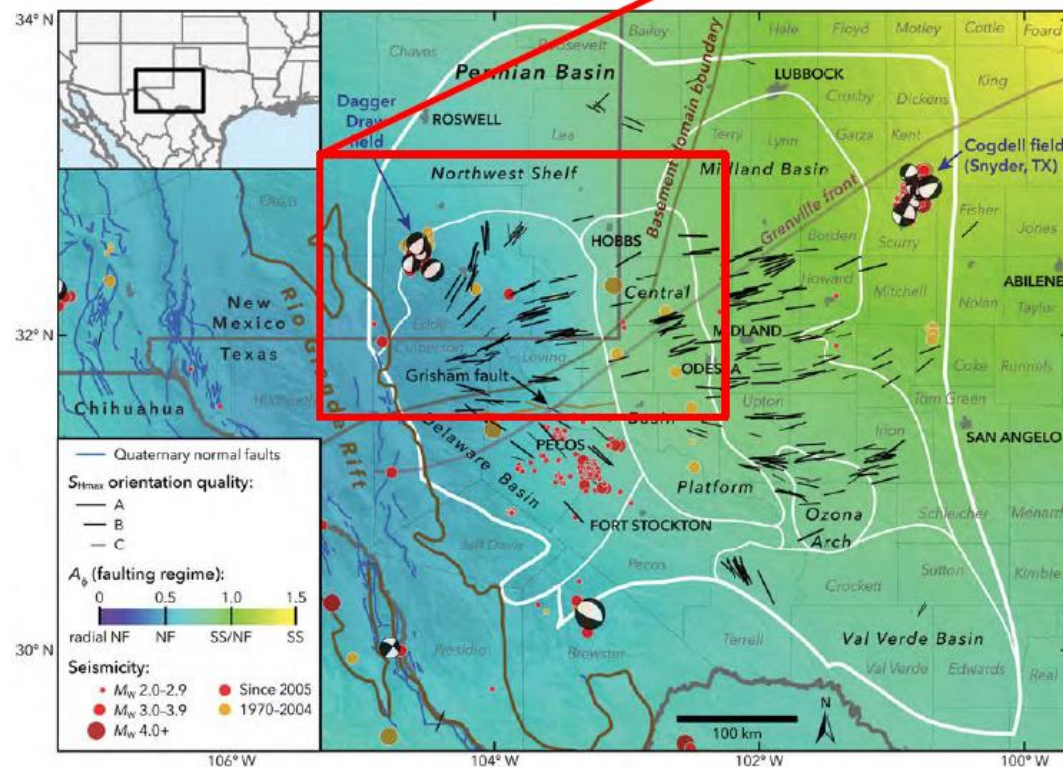
Case Nos. 24632 & 24633

Exhibit B-17

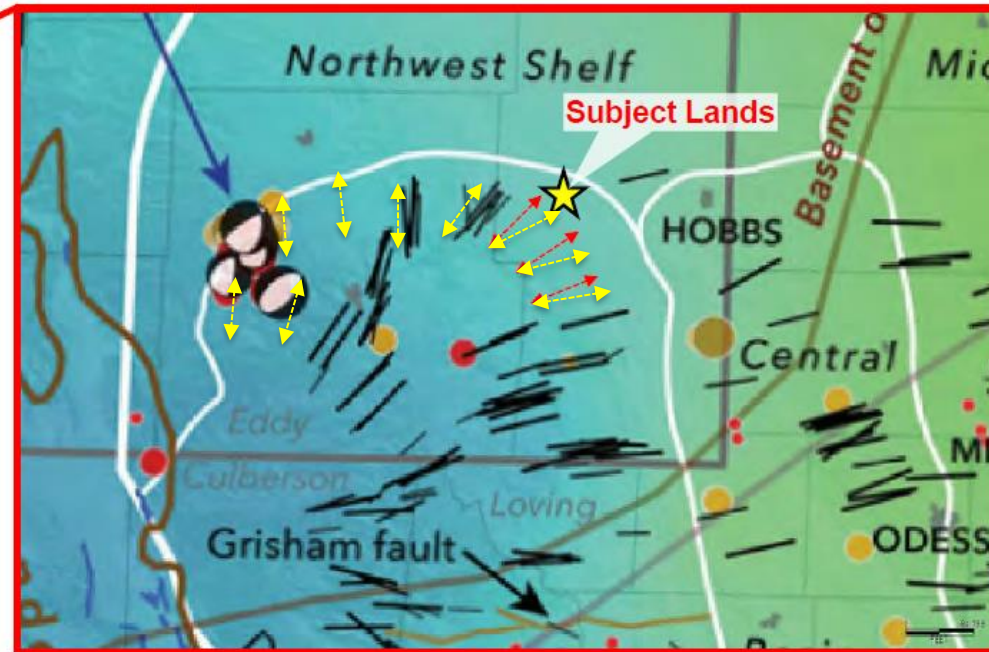


Stress Direction Rotates Around Subject Lands

Exhibit B-2



Lund Snee, Jens-Erik, and Zoback, M.D. 2018. State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity. The Leading Edge 37(2), 127-134, doi:10.1190/tle37020127.1.



↕ Interpolated stress direction around subject lands

↕ Avant Interpolated Stress Direction

Maximum horizontal stress orientations rotate throughout the Permian Basin. Avant would interpolate another data gap in the northwest corner of the Delaware Basin to be ~0-10 degrees which contradicts with local focal mechanisms taken from the area. Thus, focal mechanisms can be unreliable for predicting Maximum horizontal stress direction.

Regardless of the inversion method used, the literature suggests that a minimum of 20-30 focal mechanisms across a diversity of faults that vary within 30 - 40degrees of orientation is needed to adequately predict stress orientations using focal mechanisms.

(Jia et al., 2018, Angelier 1979; Gephart & Forsyth 1984; Michael 1984; Reches et al. 1992; Lund & Slunga 1999; Arnold & Townend 2007; Hardebeck & Hauksson 2001; Martinez-Garzon et al., 2016; and Vavrycuk 2014)

Reservoir Rebuttal

Daytona 29 Fed Com

#301H-#304H / #601H-#604H / #006H-#009H

Avant Operating, LLC

Case Nos. 24632 & 24633

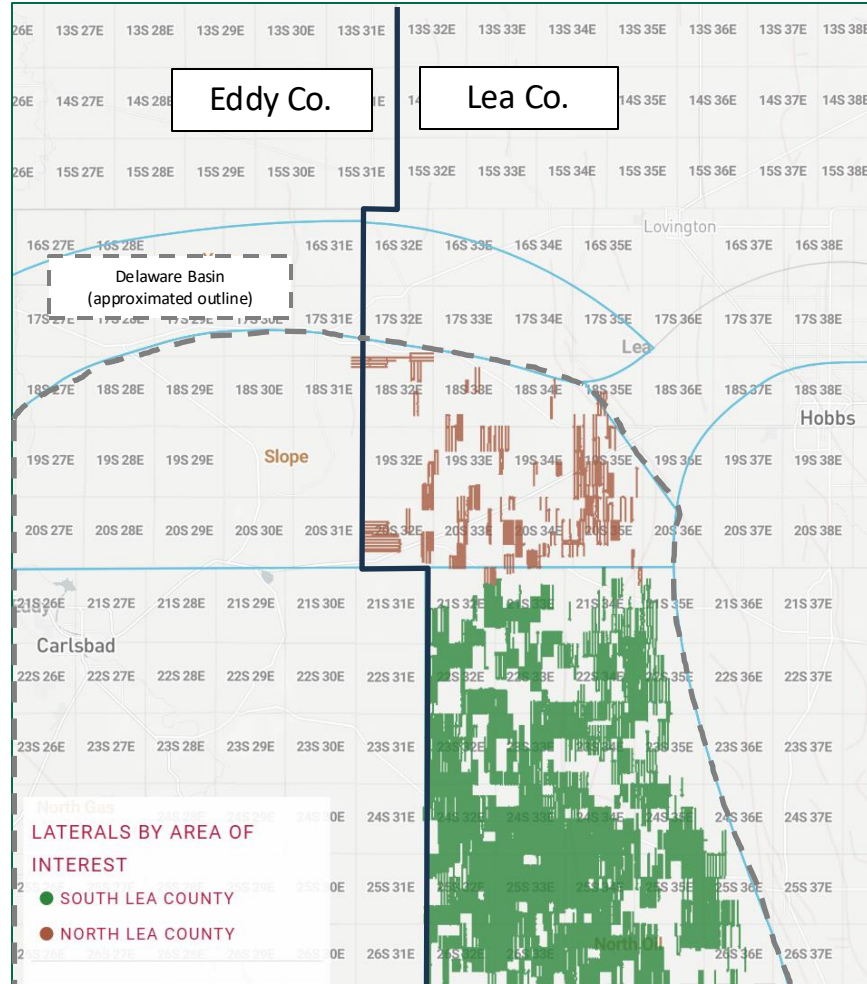
Exhibit B-18



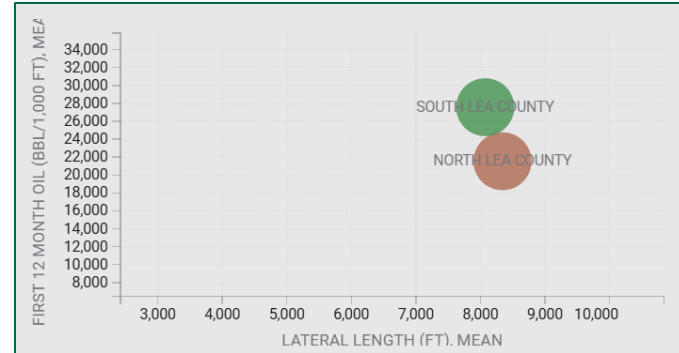
Well performance in Lea Co. has historically been more prolific in southern portion of the county compared to the north. This is a result of the elements of the petroleum system, and not operator performance. South Lea County is in the sweet spot of the Delaware Basin. Therefore, well performance by operator across all of Lea County is not a reliable metric depend on.

Coterra operates 15x as many horizontal wells in south Lea as in north; Avant operates half as many wells in the south compared to the north.

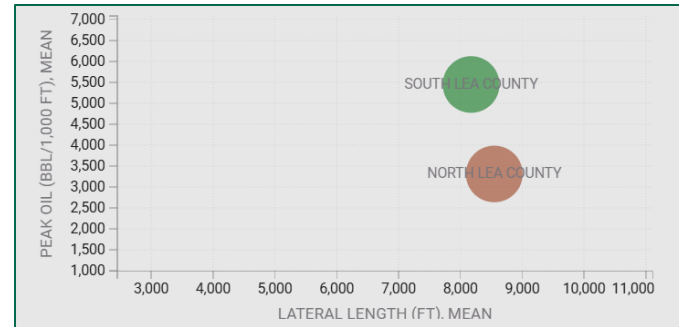
Area of Interest Map



Well Performance Comparison – North vs South Lea



Area	Avg. 12 Mo. Oil (BBL/1000 ft)	Coterra Wells	Avant Wells
North Lea Co.	21,537	6	16
South Lea Co.	27,575	87	9
South Vs North	+28%	15x	~1/2x



Area	Avg. Peak Oil (BBL/1000 ft)
North Lea Co.	3,312
South Lea Co.	5,447
South Vs North	+64%

Note: all type curve figures on charts are normalized to a 1,000-foot lateral length. Well set includes all Lea County Delaware Basin horizontal wells with first production after September 2018.

