

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

**APPLICATION OF MEWBOURNE OIL  
COMPANY FOR EXPANSION OF A UNIT  
AREA, LEA COUNTY, NEW MEXICO**

**Case No. 21418**

**NOTICE OF FILING**

Mewbourne Oil Company hereby submits Replacement Exhibit 2 in the above case, which is necessary due to the original geologist being unavailable for the March 18<sup>th</sup> hearing.

Respectfully submitted,



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James Bruce  
Post Office Box 1056  
Santa Fe, New Mexico 87504  
(505) 982-2043  
*jamesbruc@aol.com*

Attorney for Mewbourne Oil Company

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing pleading was served upon the following counsel of record this 11<sup>th</sup> day of March, 2021 by e-mail:

Michael Feldewert  
[mfeldewert@hollandhart.com](mailto:mfeldewert@hollandhart.com)

Adam Rankin  
[agrarkin@hollandhart.com](mailto:agrarkin@hollandhart.com)

Julia Broggi  
[jbroggi@hollandhart.com](mailto:jbroggi@hollandhart.com)

Kaitlyn Luck  
[kaluck@hollandhart.com](mailto:kaluck@hollandhart.com)

Deanna Bennett  
[dmb@modrall.com](mailto:dmb@modrall.com)

Earl DeBrine  
[edebrine@modrall.com](mailto:edebrine@modrall.com)

Lance Hough  
[ldh@modrall.com](mailto:ldh@modrall.com)

  
James Bruce

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

**APPLICATION OF MEWBOURNE OIL COMPANY  
FOR APPROVAL OF EXPANSION OF A UNIT AREA,  
LEA COUNTY, NEW MEXICO.**

**Case No. 21418**

**SELF-AFFIRMED STATEMENT OF  
NATHAN CLESS**

Nathan Cless, for his testimony in this case, states:

1. I am over 18 years of age and am competent to provide this Self-Affirmed Statement. I have personal knowledge of the matters addressed herein.

2. I am the District Geologist for Mewbourne Oil Company's Permian Basin district ("Mewbourne"). I am a geologist by profession, and I am familiar with the geological matters pertaining to Mewbourne's application for unit expansion. I am submitting this replacement exhibit because Jordan Carrell is unavailable for the hearing scheduled for March 18, 2021.

3. I have previously testified before the New Mexico Oil Conservation Division as an expert in geology, and my qualifications were accepted as a matter of record.

4. A general location map of the proposed expansion of the North Wilson Deep Unit is attached as Exhibit 2-A. The area lies entirely within the Delaware Basin and is approximately two miles west of the Central Basin Platform. The proposed unitized interval is the entire Bone Spring formation.

5. A structure map on top of the Bone Spring formation is attached as Exhibit 2-B. The current North Wilson Deep Unit is displayed with diagonal blue lines and the proposed expansion boundary of the unit is shown in red. The map shows that the structure of the Bone Spring dips to the west-southwest. Across the proposed unit area there is approximately 100' of

*Replacement*

EXHIBIT

**2**

elevation change per mile in the north-south orientation, which is the direction that horizontal wells will be drilled. The map also shows lines of cross-sections through the proposed unit area and the location of the initial test wells that will be drilled within the expanded unit.

6. Attached as Exhibit 2-C is a gross thickness isopach map of the Bone Spring formation, which is the zone to be developed within the proposed unit area. It shows that the Bone Spring across the proposed unit area has an approximate thickness of 2600-2800'.

7. Attached as Exhibit 2-D is an activity map of horizontal Bone Spring wells in the immediate area of the unit area. Other than Mewbourne's Second Bone Spring well in Section 6, Township 21 South, Range 35 East, NMPM, there have been no new wells drilled within the proposed expanded unit area in over ten years.

8. Attached as Exhibit 2-E is a north to south Bone Spring cross-section along line A-A'. The well logs on the cross section provide a representative sample of the Bone Spring formation in the area. There is a resistivity log on the left and a porosity log on the right for each well. These logs show there are consistent sands within the First, Second, and Third Bone Spring intervals. Within the Second Bone Spring interval there is an upper sand and a lower sand, which can be seen by the reduced resistivity levels that are approximately 60' thick. Our initial test wells, the North Wilson Deep Unit Well Nos. 3H and 4H, will target these intervals as indicated by the solid red arrows. The dashed arrows represent additional prospective targets in the Avalon Shale and First Bone Spring interval.

9. Attached as Exhibits 2-F through 2-H are west to east cross-sections in the northern, central, and southern parts of the proposed unit area. These cross-sections show relatively consistent thickness within the Bone Spring formation across the entire area.

10. Attached as Exhibit 2-I is a development plan for the proposed unit area. It shows the planned initial test well locations for the Second Bone Spring, and the potential locations of future extended laterals and surface facilities.

11. Exhibits 2-J and 2-K are well planning reports for the initial unit wells. The reports contain plots and lateral schematics of the planned wellbores. The wells' producing intervals will be orthodox.

12. Based on the information discussed above, I am able to conclude that:

a) The expansion of the unit area is justified from a geologic standpoint;  
b) There is no faulting or other geologic impediment that could adversely affect the drilling of the proposed Bone Spring wells; and

c) Each quarter-quarter section in the expanded unit area will contribute more or less equally to production.

13. In my opinion, the granting of Mewbourne's application is in the interests of conservation and the prevention of waste.

14. Exhibits 2-A through 2-K were prepared by Mr. Carrell under my supervision, or were compiled from company business records.

I understand that this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony in paragraphs 1 through 14 above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date handwritten next to my signature below.



Nathan Cless

3/10/2021  
Date

VERIFICATION

STATE OF TEXAS                    )  
  ) ss.  
COUNTY OF MIDLAND            )

Nathan Cless, being duly sworn upon his oath, deposes and states that: He is a geologist for Mewbourne Oil Company; he is authorized to make this verification on its behalf; he has read the foregoing statement, and knows the contents thereof; and the same is true and correct to the best of his knowledge, information, and belief.

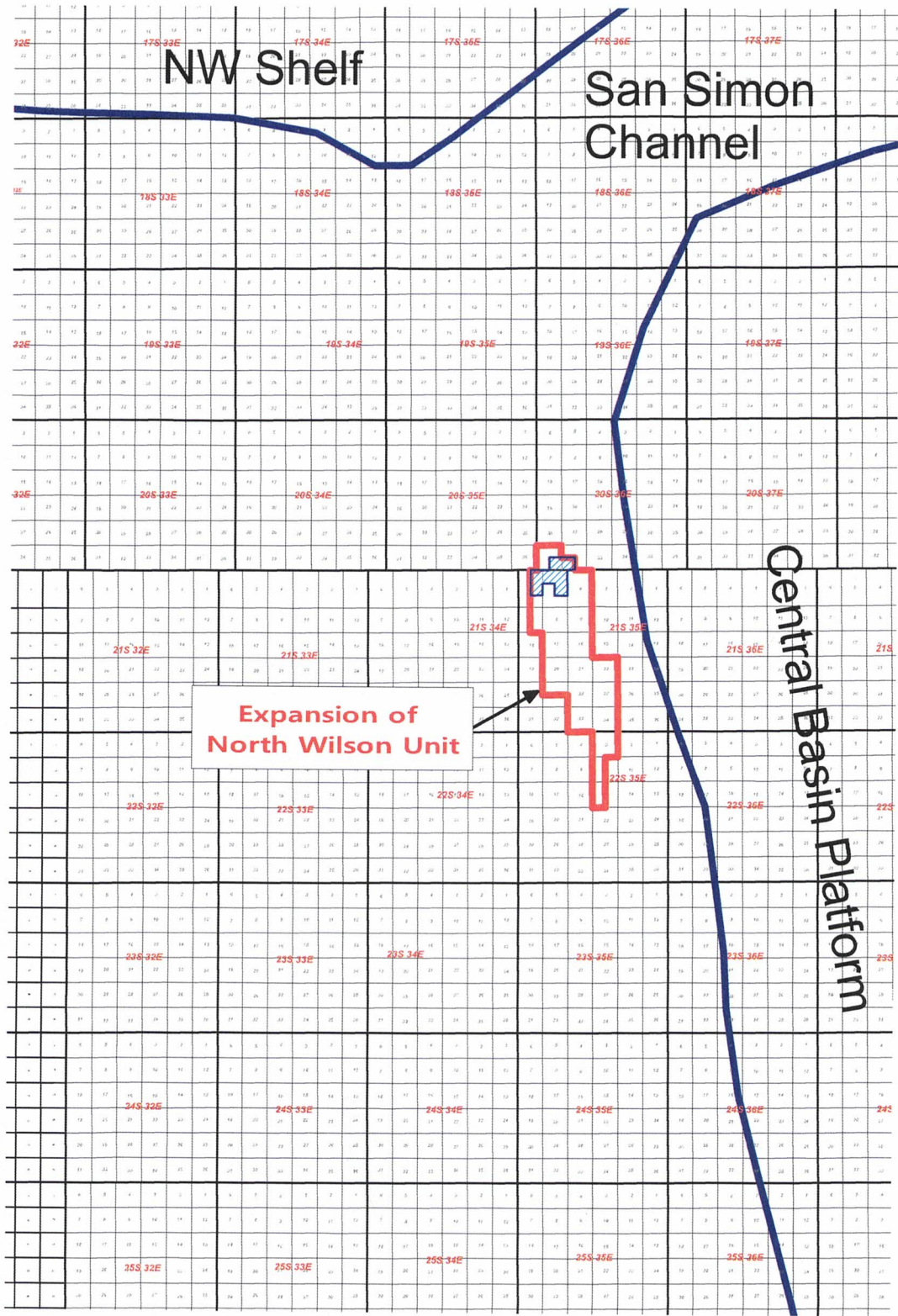
  
\_\_\_\_\_  
Nathan Cless

SUBSCRIBED AND SWORN TO before me this 10<sup>TH</sup> day of March, 2021 by Nathan Cless.

My Commission Expires: 12/09/2023

  
\_\_\_\_\_  
Notary Public



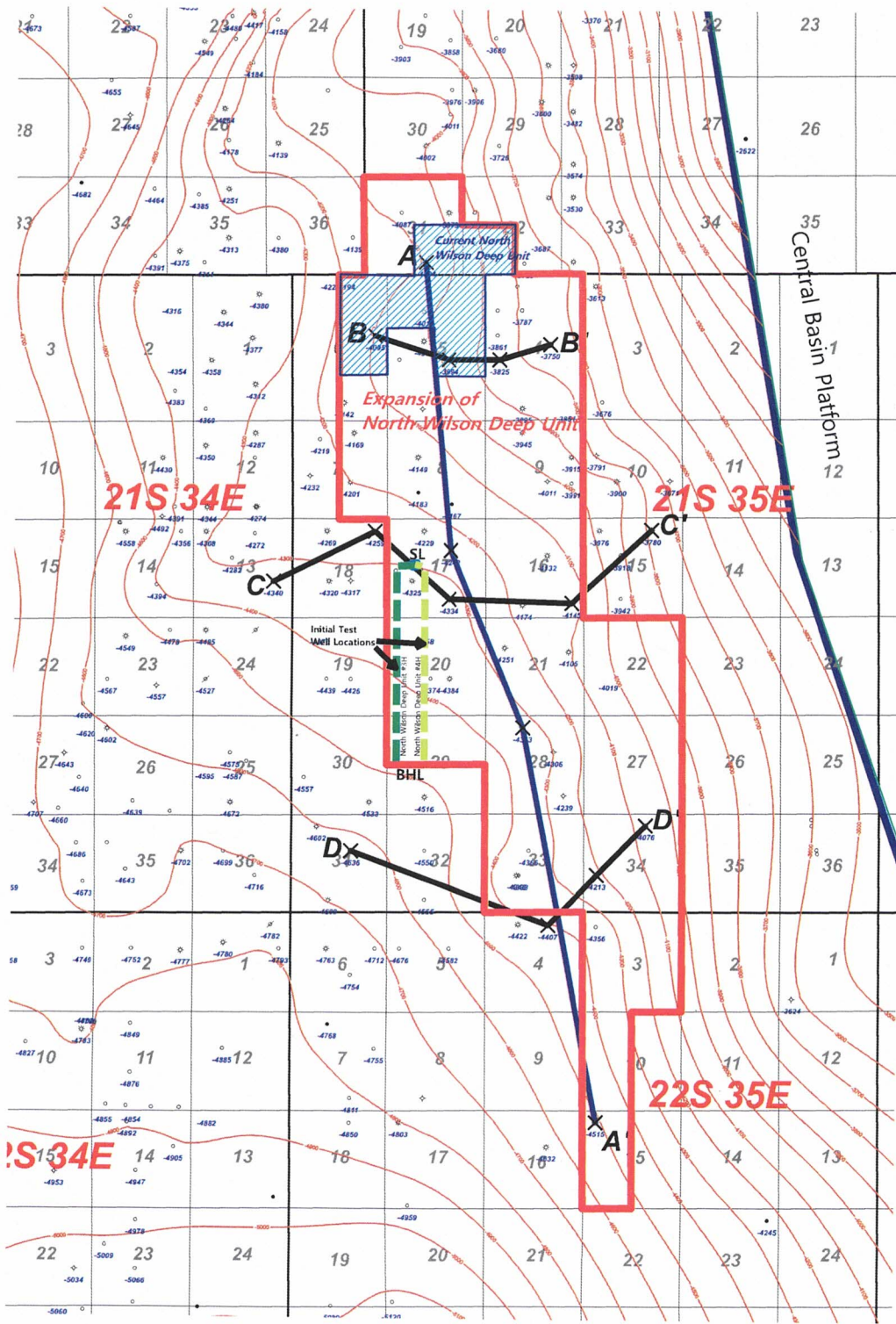


1 inch = 4 miles

<b>NE Delaware Basin Regional Map</b> <b>North Wilson Deep Unit</b>		
Author: JRC	Lea Co, New Mexico	Date: 1/12/21

2-A

EXHIBIT



21S 34E

21S 35E

22S 35E



Wells deeper than 7000'

•  
Bone Spring  
structural top  
(subsea ft)



<b>Bone Spring Structure Map</b> North Wilson Deep Unit		
Author: JRC Lea Co, NM	Contour Interval: 100'	Date: 1/21/21

2.13

EXHIBIT



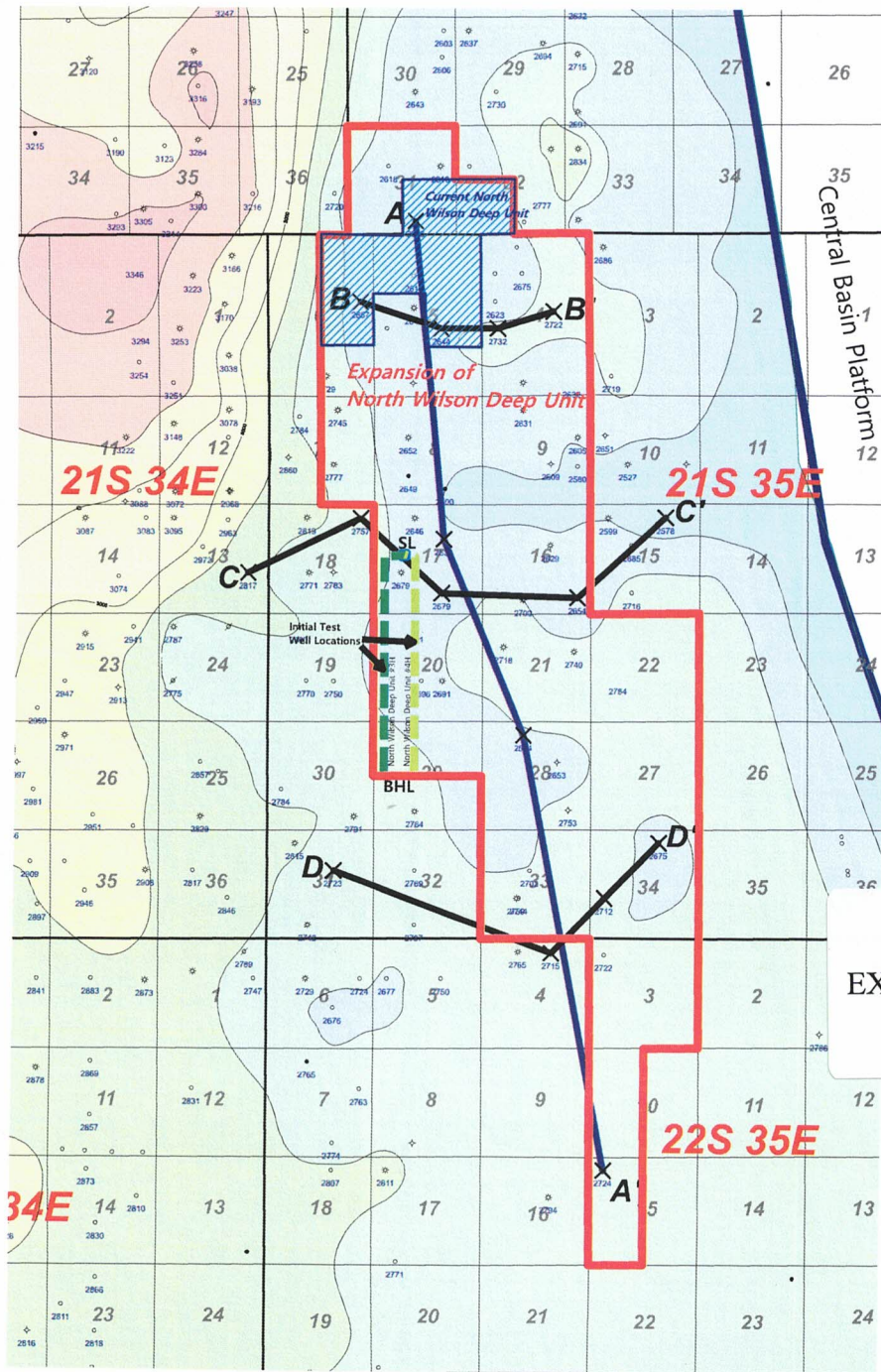
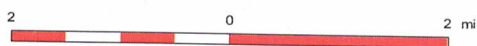
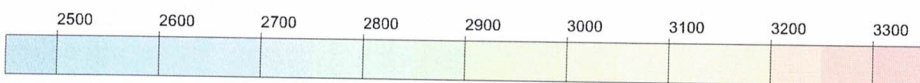


EXHIBIT 2.C



Bone Spring Fm Gross Thickness (ft)



Wells deeper than 7000'

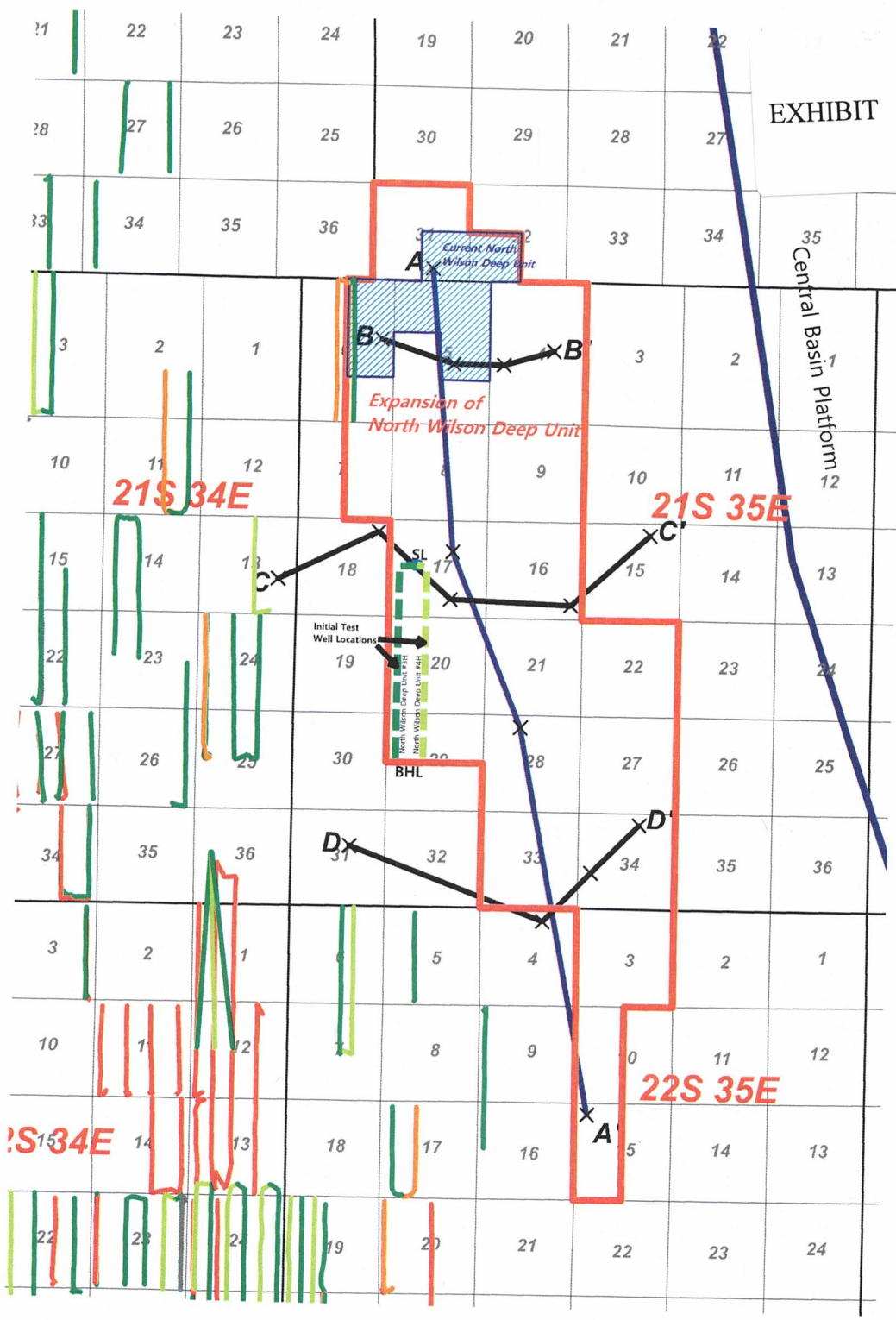


Bone Spring Gross thickness (ft)

<b>Bone Spring Gross Thickness Map</b> <b>North Wilson Deep Unit</b>		
Author: JRC	Contour Interval: 100'	Date: 1/12/21
Lea Co, NM		

2-D

EXHIBIT



21S 34E

21S 35E

15S 34E

22S 35E

Hz Well Activity Color Code

- Avalon Shale
- 1st BSPG Sand
- Upper 2nd BSPG Sand
- Lower 2nd BSPG Sand
- 3rd BSPG Sand



<b>MOC Mewbourne Oil Company</b>	
<b>Horizontal Bone Spring Activity Map</b> North Wilson Deep Unit	
Author: JRC Lea Co, NM	Date: 1/12/21

A

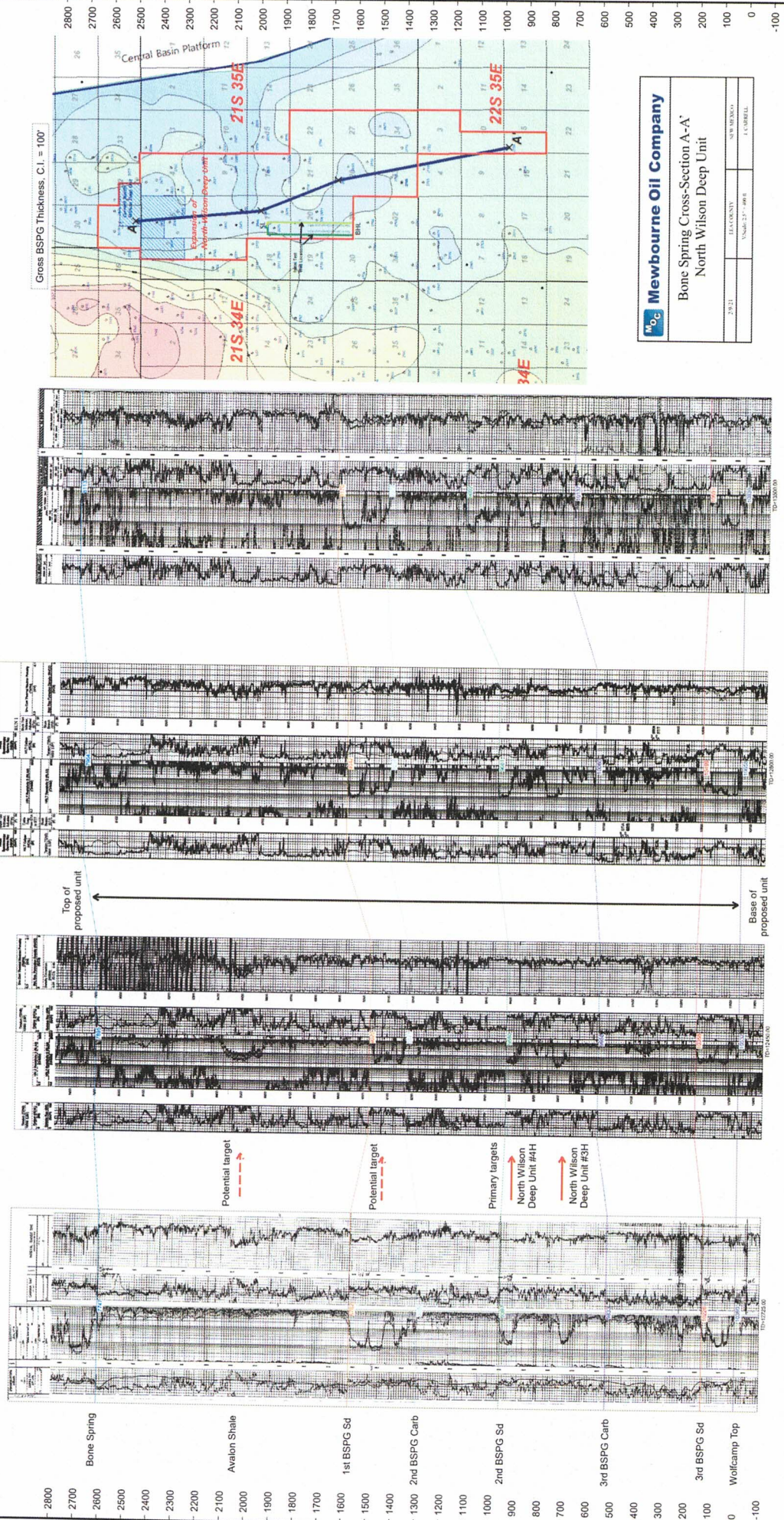
WOLF CAMP (17)   
 TOP 20 S. Range 35E Sec 34   
 Datum 2003.10

15574R   
 MOUNTAIN VIEW   
 MARATHON DE PERENNALLI   
 TEMPERANCE UNIT 1   
 30' NE   
 TOP 21 S. Range 35E Sec. 17   
 Datum 2003.10

15573R   
 LANTIERO   
 LANTIERO UNIT   
 10' NE   
 TOP 21 S. Range 35E Sec. 28   
 Datum 2003.10

2148R   
 LEGACI   
 LEGACI UNIT   
 10' NE   
 TOP 22 S. Range 35E Sec. 15   
 Datum 2003.10

A'



<b>MOC</b> Mewbourne Oil Company	Bone Spring Cross-Section A-A'	
	North Wilson Deep Unit	
	28-31	11-621521
	2/4/08 13:17:00 (L)	CUMMEL

2.5

EXHIBIT

B'

B

30002019000  
 4447.9  
 30002020000  
 2147.9  
 30002021000  
 2044.1  
 30002022000  
 1940.3

30002019000  
 4447.9  
 30002020000  
 2147.9  
 30002021000  
 2044.1  
 30002022000  
 1940.3

30002020000  
 2147.9  
 30002021000  
 2044.1  
 30002022000  
 1940.3

30002021000  
 2044.1  
 30002022000  
 1940.3

30002022000  
 1940.3

30002019000  
 4447.9  
 30002020000  
 2147.9  
 30002021000  
 2044.1  
 30002022000  
 1940.3

30002020000  
 2147.9  
 30002021000  
 2044.1  
 30002022000  
 1940.3

30002021000  
 2044.1  
 30002022000  
 1940.3

30002022000  
 1940.3

30002020000  
 2147.9  
 30002021000  
 2044.1  
 30002022000  
 1940.3

30002021000  
 2044.1  
 30002022000  
 1940.3

30002022000  
 1940.3

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 2044.1  
 30002022000  
 1940.3

30002022000  
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30002022000  
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 1940.3

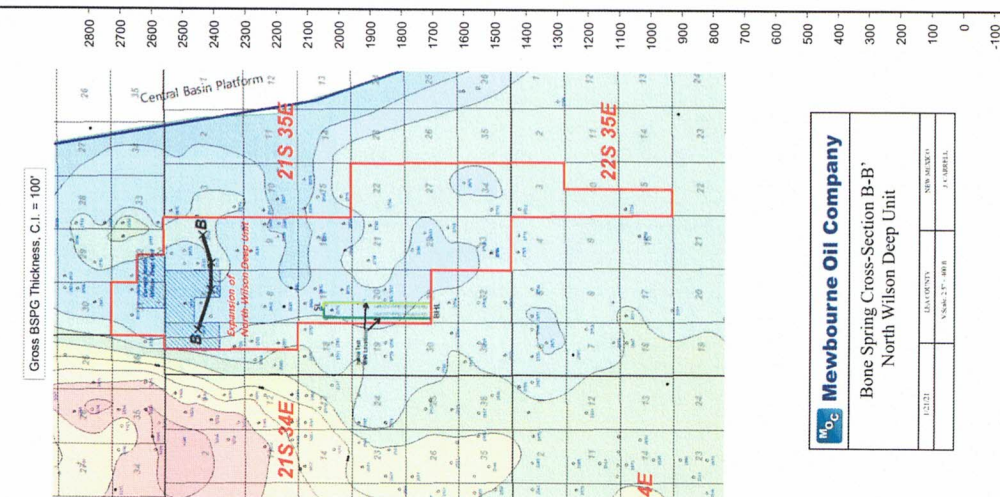
30002022000  
 1940.3

30002022000  
 1940.3

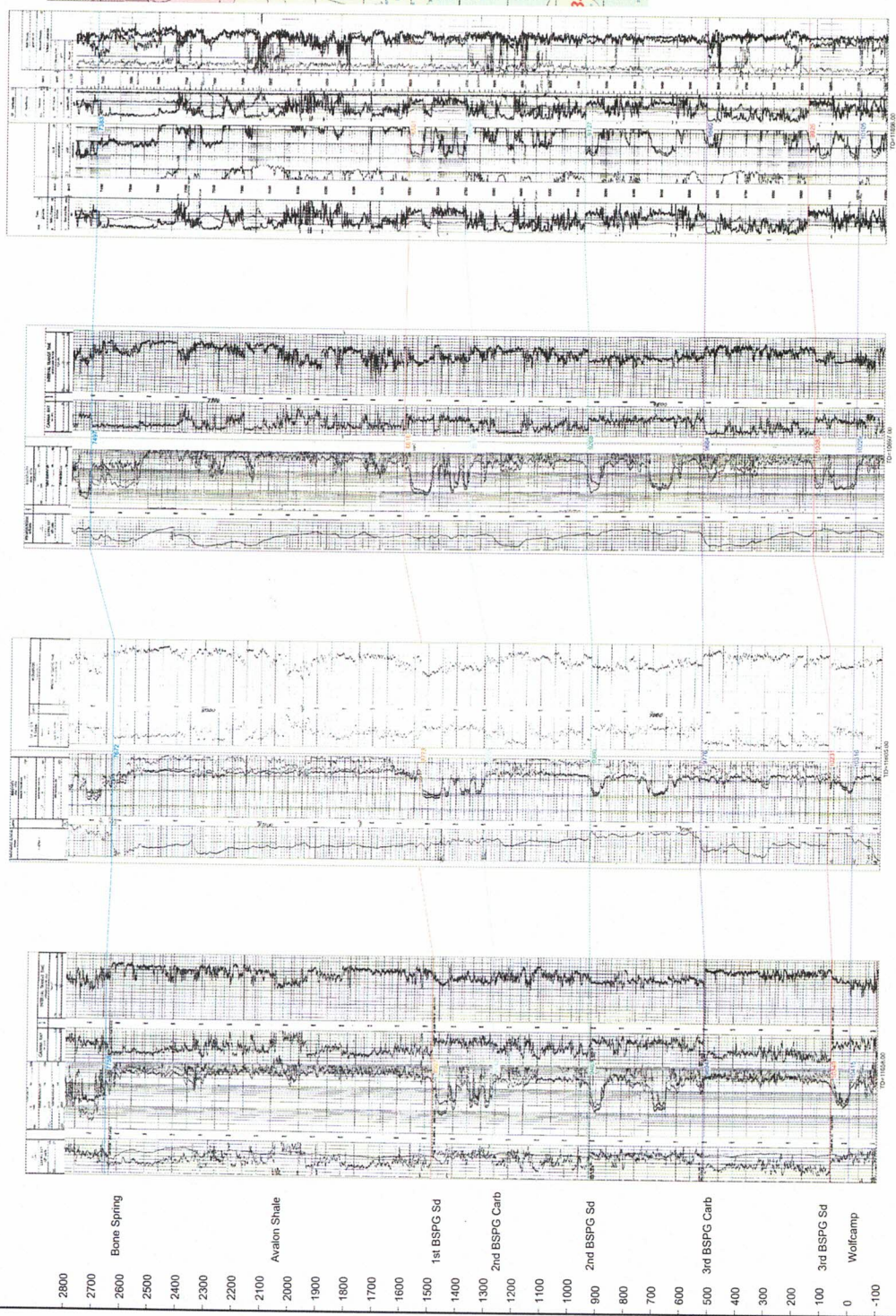
30002022000  
 1940.3

30002022000  
 1940.3

30002022000  
 1940.3



<b>MOC</b>	
<b>Mewbourne Oil Company</b>	
Bone Spring Cross-Section B-B'	
North Wilson Deep Unit	
DATE	11/20/11
BY	J. J. ARRELL
APP'D	
SCALE	2" = 400'



2.F

EXHIBIT

C'

C

00000145700  
 DOWN HOLE TEST LOGS, RICHMOND, TEXAS  
 WILSON STATE  
 TRIP # 21, 8. Range 18E, Sec. 13  
 Datum: 1985

400003400  
 GDF OPERATING LLC  
 WILSON STATE  
 TRIP # 21, 8. Range 18E, Sec. 13  
 Datum: 1985

600004900  
 GDF OPERATING LLC  
 WILSON STATE  
 TRIP # 21, 8. Range 18E, Sec. 13  
 Datum: 1985

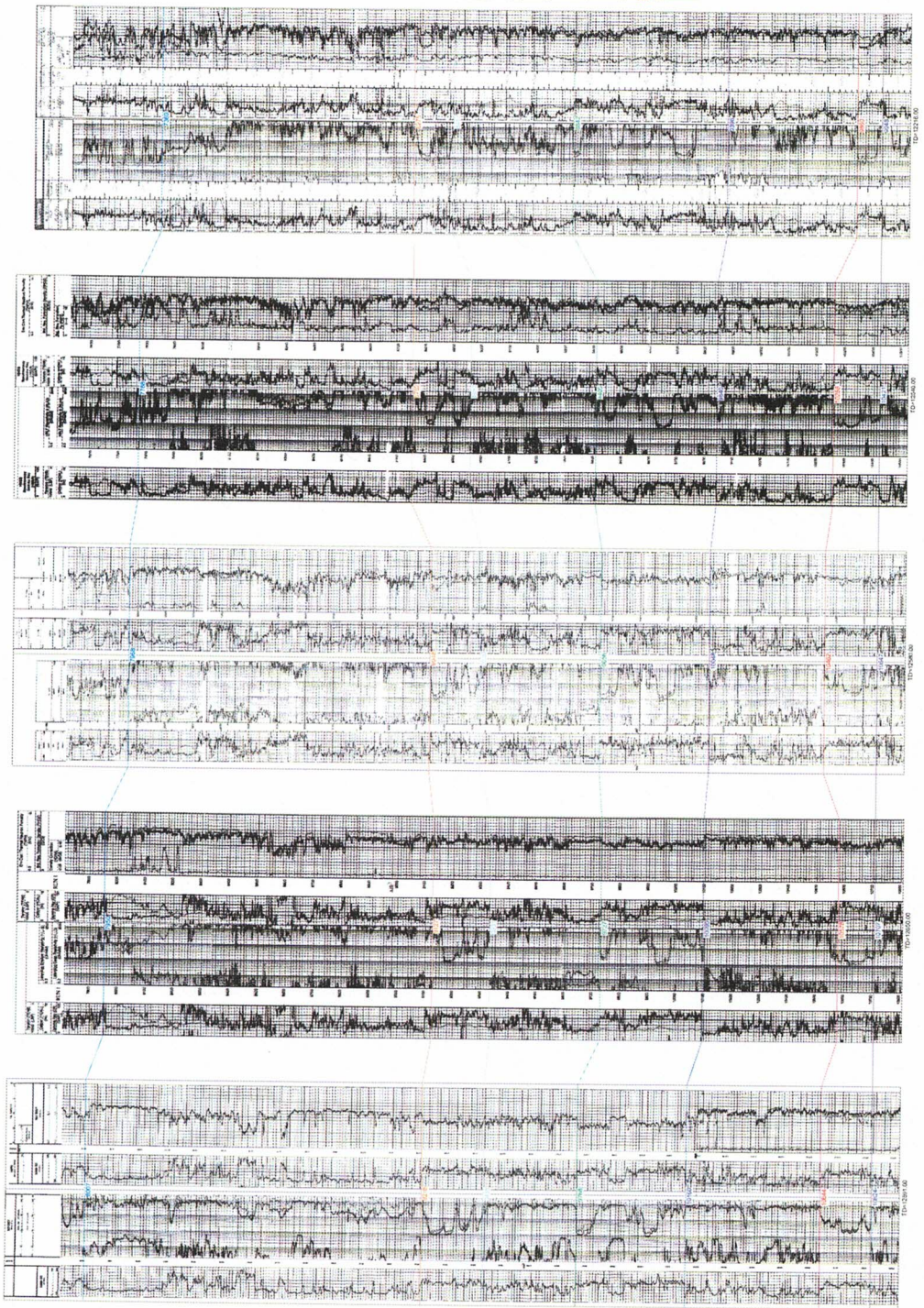
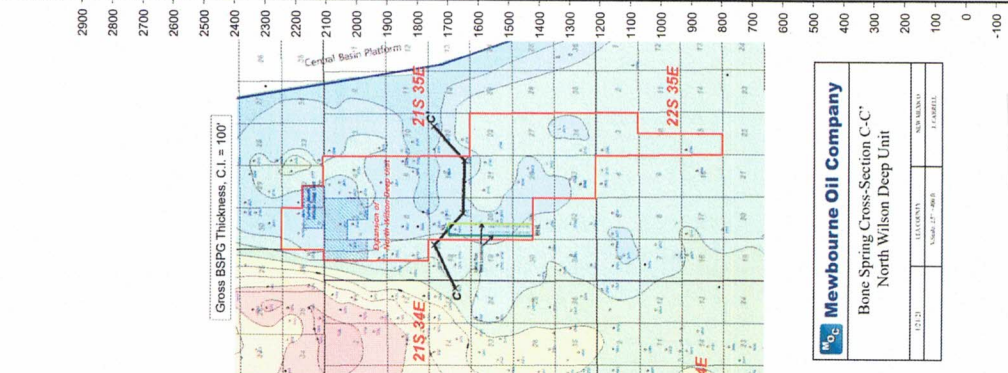
800006400  
 GDF OPERATING LLC  
 WILSON STATE  
 TRIP # 21, 8. Range 18E, Sec. 13  
 Datum: 1985

100007900  
 GDF OPERATING LLC  
 WILSON STATE  
 TRIP # 21, 8. Range 18E, Sec. 13  
 Datum: 1985

120009400  
 GDF OPERATING LLC  
 WILSON STATE  
 TRIP # 21, 8. Range 18E, Sec. 13  
 Datum: 1985

140010900  
 GDF OPERATING LLC  
 WILSON STATE  
 TRIP # 21, 8. Range 18E, Sec. 13  
 Datum: 1985

2900 Bone Spring  
 2800  
 2700  
 2600  
 2500  
 2400  
 2300 Avaton Shale  
 2200  
 2100  
 2000  
 1900  
 1800  
 1700  
 1600 1st BSPG Sd  
 1500  
 1400 2nd BSPG Carb  
 1300  
 1200  
 1100  
 1000 2nd BSPG Sd  
 900  
 800  
 700 3rd BSPG Carb  
 600  
 500  
 400  
 300  
 200 3rd BSPG Sd  
 100  
 0 Wolfcamp  
 -100



2-6

EXHIBIT

D'

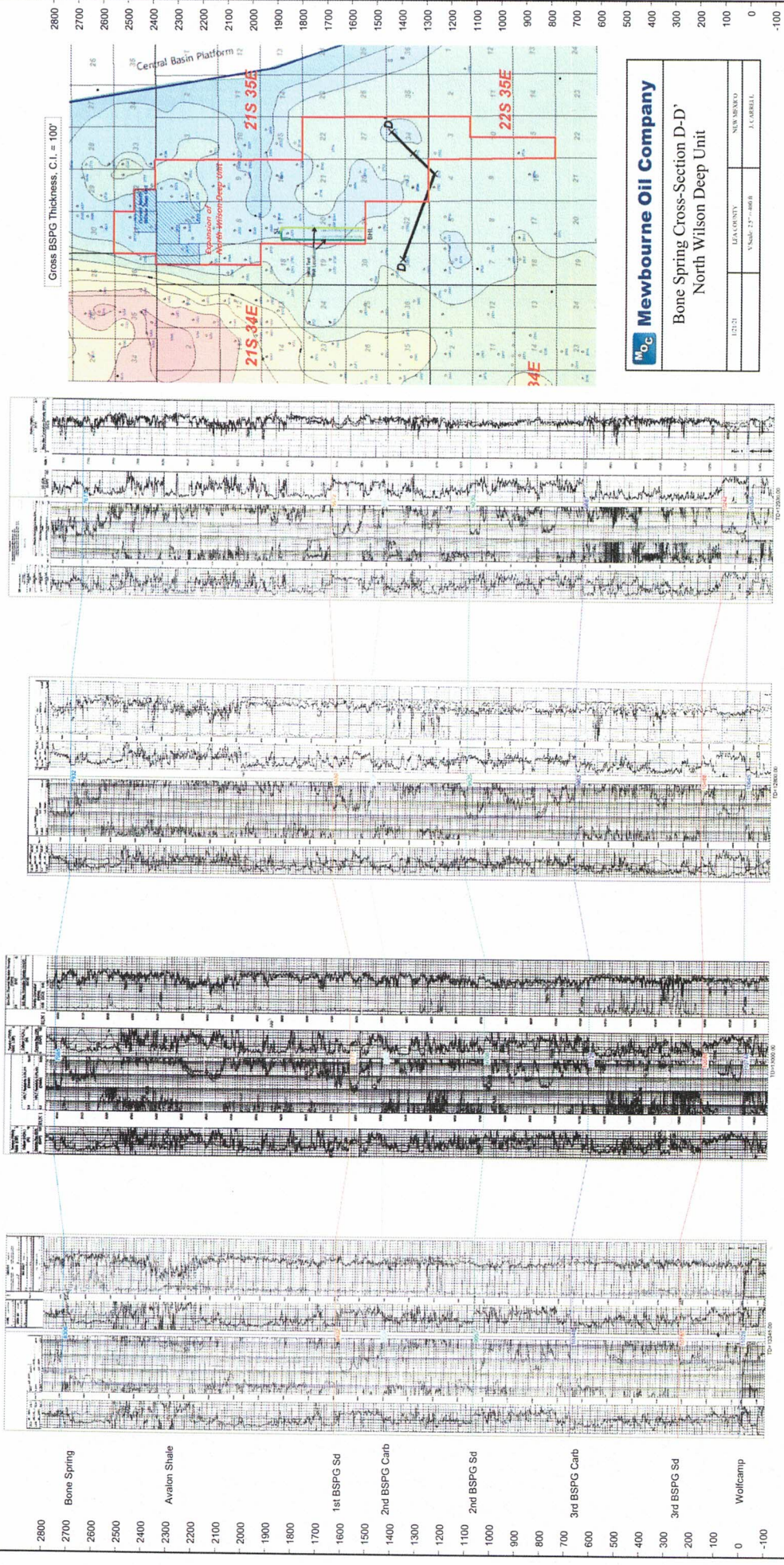
D

3002276000  
 CAMARCA MEMBERSHIP OF COLONADO  
 TRAP 71 B, Zone 34 E, Sec. 31  
 Diagram 30027600

3002276000  
 NEARBYLAND CO  
 TRAP 71 B, Zone 34 E, Sec. 4  
 Diagram 30027600

3002276000  
 MACK FARM CO  
 TRAP 71 B, Zone 34 E, Sec. 34  
 Diagram 30027600

3002276000  
 WILES FARM CO  
 TRAP 71 B, Zone 34 E, Sec. 34  
 Diagram 30027600



2-H

EXHIBIT

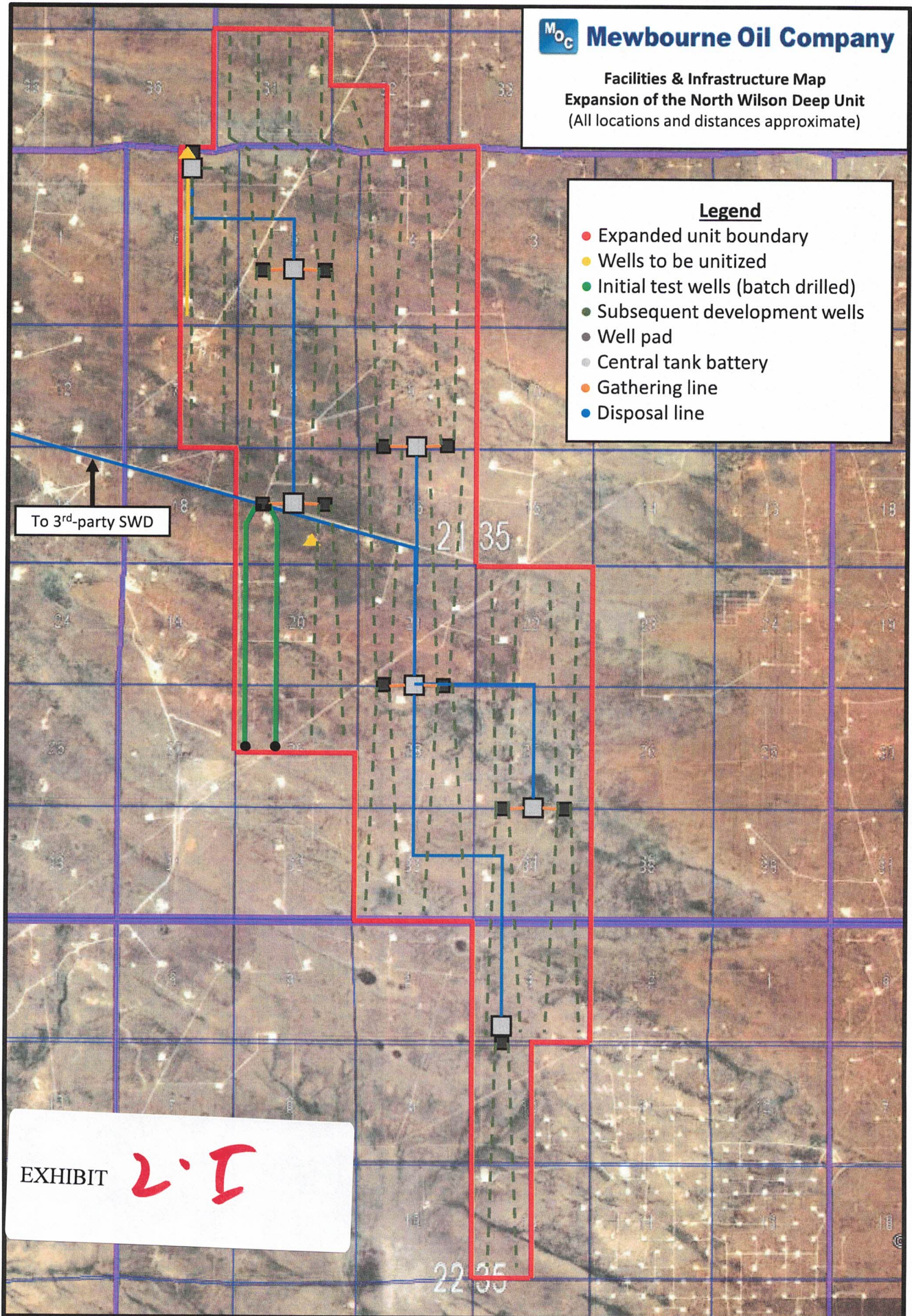
**Facilities & Infrastructure Map**  
**Expansion of the North Wilson Deep Unit**  
(All locations and distances approximate)

**Legend**

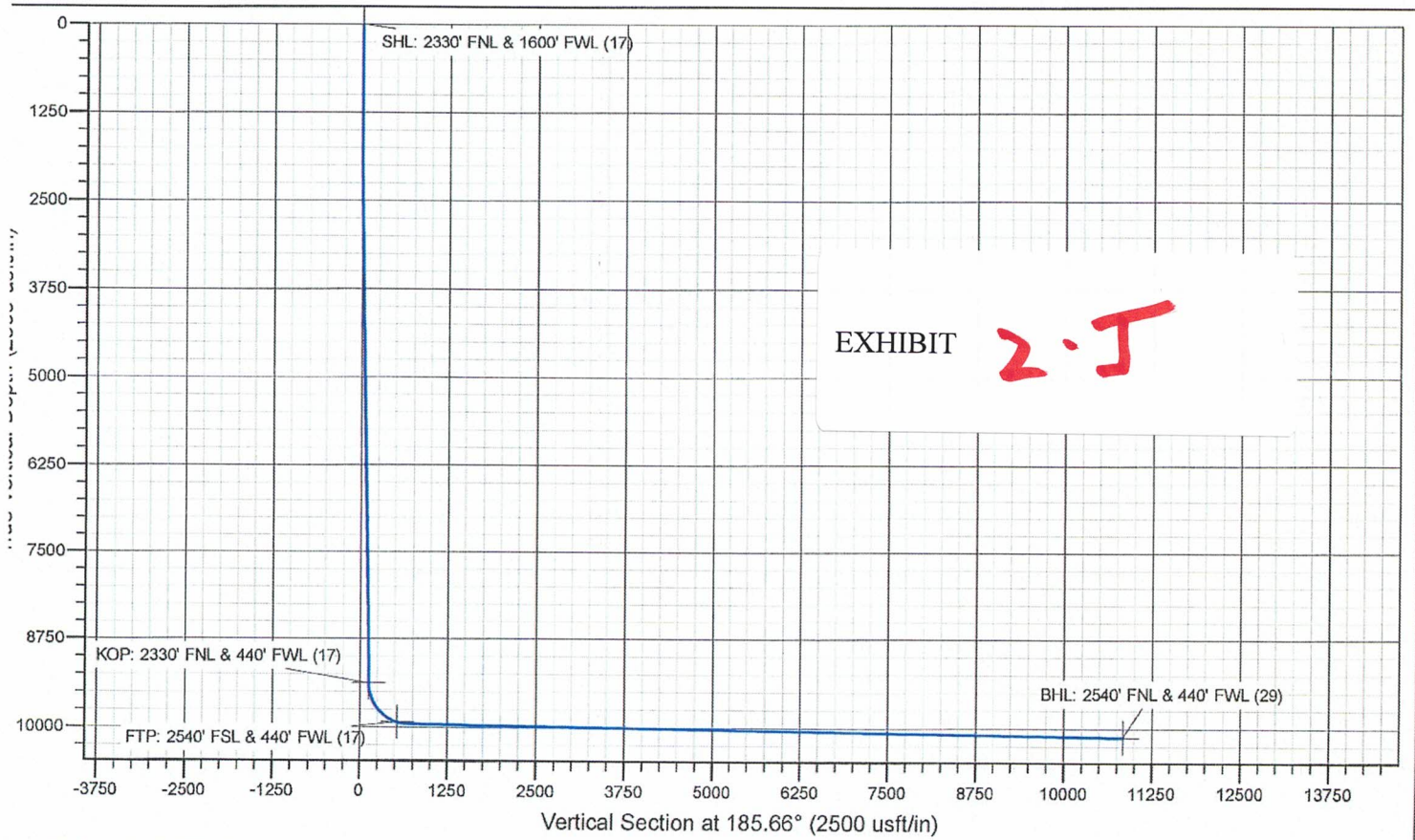
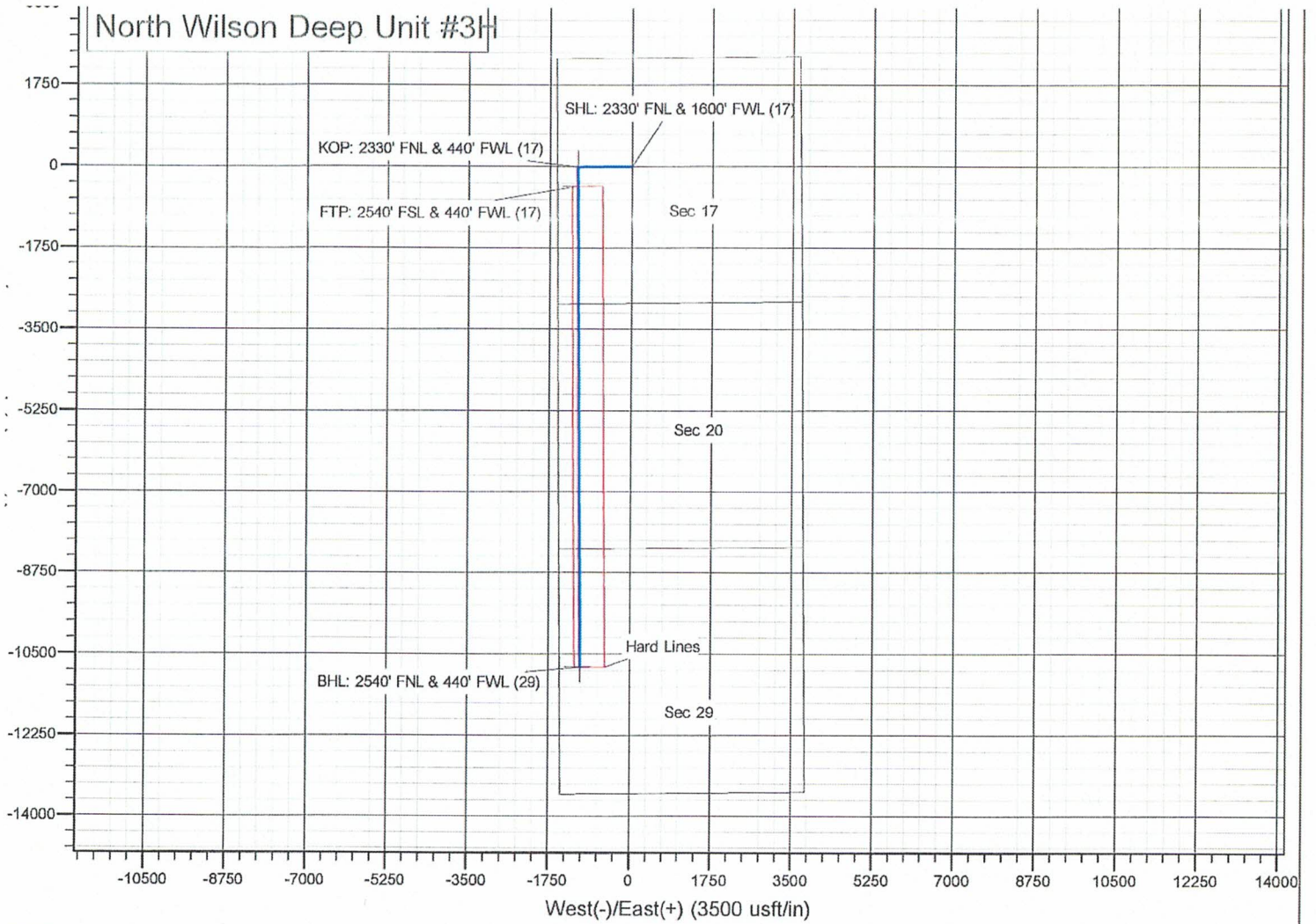
- Expanded unit boundary
- Wells to be unitized
- Initial test wells (batch drilled)
- Subsequent development wells
- Well pad
- Central tank battery
- Gathering line
- Disposal line

To 3<sup>rd</sup>-party SWD

EXHIBIT 2.5



# North Wilson Deep Unit #3H





# North Wilson Deep Unit #4H

