

CASE 5155: Application of HARDING  
OIL CO. FOR DIRECTIONAL DRILLING,  
LEA COUNTY, NEW MEXICO.

CASE No.

5155

---

Application,

Transcripts,

Small Exhibits

ETC.

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
January 30, 1974

EXAMINER HEARING

IN THE MATTER OF:

Application of Harding Oil  
Company for directional  
drilling, Lea County, New  
Mexico.

Case No. 5155

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil  
Conservation Commission:

William Carr, Esq.  
Legal Counsel for the Com-  
mission  
State Land Office Building  
Santa Fe, New Mexico

For the Applicant:

Clarence Hinkle, Esq.  
Hinkle, Bondurant, Cox & Eaton  
Hinkle Bldg.  
Roswell, New Mexico

I N D E X

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|----------------------------------|-------------|
| LEWIS BISCKING                   |             |
| Direct Examination by Mr. Hinkle | 3           |
| Cross Examination by Mr. Kutter  | 9           |

E X H I B I T S

|                                  |               |                 |
|----------------------------------|---------------|-----------------|
| Applicant's Exhibits 1 through 4 | <u>Marked</u> | <u>Admitted</u> |
|                                  | --            | 9               |

MR. NUTTER: Call Case 5155.

MR. CARR: Case 5155. Application of Harding Oil Company for directional drilling, Lea County, New Mexico.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox and Eaton, appearing on behalf of Harding Oil Company. We have Mr. Lewis Biscking as a witness.

(Witness sworn.)

LEWIS BISCKING

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name and your residence and by whom you are employed.

A Lewis J. Biscking, Junior. I live in Dallas. I'm employed by the Harding Oil Company.

Q What is your position in the Harding Oil Company?

A I'm vice president in charge of field operations.

Q Are you a petroleum engineer by profession?

A I am a petroleum engineer.

Q Have you previously testified before the Commission?

A I have not testified before this Commission.

Q State briefly your educational background and

BISCKING-DIRECT

Page. .... k .....

experience as a petroleum geologist?

A I graduated from Tulsa University with a BS in petroleum engineering in 1949. I worked eight years for a large independent oil company advancing to the position as division engineer. Since that time, I have been employed in management positions with oil companies and manufacturing companies. At the present time -- there was a period of a few years where I did consulting work.

Q Are you familiar with the area in which this well is involved in the Application is being drilled?

A I am.

Q Have you made a study of the area?

A Yes.

Q Are you familiar with the drilling of the well?

A Yes.

MR. HINKLE: Are the qualifications sufficient?

MR. NUTTER: Yes, they are.

BY MR. HINKLE:

Q Have you prepared or has there been prepared under your direction certain Exhibits for introduction in this case?

A Yes, sir.

Q They are Exhibits 1 through 4?

BISCKING-DIRECT

A That's correct.

Q Refer to Exhibit No. 1 and explain what this is and what it shows?

A Exhibit No. 1 is a well location and acreage dedication plat. It shows the southwest quarter of Section 34, Township 13 South, 32 East, Lea County, New Mexico. It is a lease owned by Harding Oil Company in which the State 34, Well No. 1 was drilled as .1650 feet from the west line of the Section and 2210 feet from the south line of the Section.

Q Will you give the history of this well before the directional drilling was started?

A This well was drilled to the Devonian formation at a depth of 12,510 feet. It appeared to be a dry hole. Upon examination of the electric logs of the hole, it appeared that the well had crossed a fault at approximately 11,800 feet. This can be seen on the next Exhibit, Exhibit 2, which is a vertical section. It was decided by the geologist and the company that the well did not, in fact, test the section of Devonian that it was intended to test and the decision was made to directionally drill the well from a point sufficiently high to place the bottom of the hole, 400 -- 3450 feet, 60 degrees southwest of the original surface.

Q Before you made that decision did you make a survey

BISCKING-DIRECT

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of the well to find out where it was bottomed?

A Yes, when the geologist felt the well had crossed a fault, we had Sperry Sun to make a directional survey of the well to find out where the bottom of that hole was.

Q Where did you find the bottom of the hole to be located as shown on Exhibit 1?

A The bottom of the hole is approximately 470 feet northeast of the surface location. It's indicated on Exhibit 1 by a pink dot.

Q Now, refer to Exhibit 2 and explain just what that shows.

A Exhibit 2 is the geologist concept of the structure occasioned what would cause the repeat of the Mississippian formation as found on the log in which they have projected a high-angle fault and overthrust conditions in the Mississippian, such that the original well bore cut through a portion of the Mississippian formation twice.

Q Okay. Now, referring to Exhibit 3 and explain what this is.

A Exhibit 3 is the printout of the calculations made by Sperry Sun on their survey of the original well. It includes three pages of printed calculations and a horizontal displacement projection as the fourth page.

Q Now, refer to the next Exhibit.

A The next Exhibit is the --

Q (Interrupting) Exhibit No. 4.

A The next Exhibit is the horizontal and vertical plan of the course of the directional drilled well. On the left side it shows the deviation from vertical and in the center of the Exhibit is the horizontal plan view showing the horizontal course of the well.

Q What is the present depth of this well as it is deviated?

A This morning the present depth of the well was 12,452 feet.

Q What does the right-hand side of the Exhibit 4 show?

A The right-hand side of the Exhibit shows the target area in which the bottom of the hole was intended to be placed at the surface of the Devonian formation and it also shows the direction in which the course of the hole made while drilling.

Q Is there any further comment you would like to make with regard to Exhibit No. 4?

A The Exhibit No. 4 has been followed very closely with survey instruments and handled by technician who

specializes in this business. He is a licensed well surveyor. The frequency of the deviation tests varied between 30 feet and 120 feet, depending upon on how straight the well is going. In those areas where the well is being turned the frequency was 30 to 60 feet. Later when the well was going fairly straight, the frequency was 120 feet.

Q So, in your opinion, you have every reason to believe that this does portray accurately the course of the well?

A That is correct, and the technician is a licensed surveyor and can provide a certified plat at completion of the hole attesting to the correct bottom hole or the location of the bottom of the hole.

Q Is it your opinion that the bottom of the hole, however deep it is drilled, is lined up in the area designated on Exhibit 4, target area?

A It will.

Q Now, refer back to Exhibit No. 1. Does Harding own all of the acreage shown on the entire quarter section?

A Cities Service Oil Company owns the balance of the Section 34. Harding has a farm-out from Cities Service on the southwest quarter of the section only.

Q Has Cities Service been kept informed with regard

to the directional drilling?

A Cities Service has been informed from beginning the original hole and continued to be informed through the directional drilling, yes, sir.

Q And the bottom of the hole in the target area will wind up more than 660 feet from the leased line?

A That is true.

MR. HINKLE: We would like to offer in evidence Exhibits 1 through 4.

MR. NUTTER: Applicant's Exhibits 1 through 4 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 4 for identification were admitted in evidence.)

MR. HINKLE: That's all I have.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Biscking, the target area was advertised as being within 100 feet of a point 430 feet south, 60 degrees west of the surface location. Now, taking a look at Exhibit 4 we have the target area being specified as being 450 feet and then an odd shape, rectangle or whatever that is, not really a rectangle?

BISCKING-CROSS

Page.....10.....

A Yes, sir, this is a cube. There is a difference between instructions in the field and the information that was sent into the Commission, however; the well does reach the target area within the 100 feet from the 430-foot line.

Q Because possibly this target area that is depicted on Exhibit 4 may be in some respects more than 100 feet from the point 430 feet.

A That is true. The target area was picked to be originally 600 feet from the location of the well bore at 9,200 feet and this was scaled to be 430 feet by the office and it measured 450 feet in the field, as that 20-foot discrepancy. It circled 100 feet from the center of the target area, touches the two boundaries, one which is 50 degrees south, 50 degrees west from the kickoff point and one which is south 70 degrees west from the kickoff point. That's the reason for the odd shape. 100 feet either side, being either closer to the kickoff point or farther away horizontally.

Q This is what is the green dot, right?

A The green dot, that is the point at which the well bore passed through 11,800 feet and unfortunately, the Devonian formation didn't happen to be there.

Q Have you crossed any faults? You crossed a fault coming back, I guess, didn't you?

BISCKING-CROSS

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A Yes. We had a little difficult time in getting across that fault. We had to make two tries. The well was drilled to 9,700 feet and plugged back to 9,500 feet and a second try to get across the fault was made and the hole continued on then to the present total depth.

Q Now, Mr. Biscking, if we scale off the distance that was advertised, which would be 430 feet from the surface location, correct?

A Correct.

Q If we make a point right there, then, if we take the 100-foot circle which was advertised and from that point is the bottom of the hole going to be within the target area?

A The bottom of the hole -- I do not have the last survey -- the bottom of the hole will be within or very close to that, maybe 10 feet.

Q Will it be within 100 feet of that point, 430 feet south, 60 degrees west of the surface location?

A As the bottom of the hole appears right now, it will probably be outside of that circle maybe five feet.

Q You are aware that the Commission requires after the completion of a directionally drilled hole, one continuous multi-shot survey from top to bottom of the well?

A Yes, sir, I am.

BISCKING-CROSS

Page.....12.....

Q Upon completion of the drilling. I realize that you are taking surveys as you go down?

A Right.

Q But we would require an additional survey and that if the well does not fall within the target area, it may be necessary to have a Hearing to amend the Order that authorized the directional drilling of the well.

A Yes, sir. At the present time, it appears the well is a dry hole, would that make a difference in the Commission's requirements?

Q Probably wouldn't have to amend an Order on a dry hole.

MR. NUTTER: Does anyone have any further questions of Mr. Biscking? You may be excused.

(Witness excused.)

(Whereupon, a discussion was held off the record.)

MR. NUTTER: Do you have anything further, Mr. Hinkle?

MR. HINKLE: No.

MR. NUTTER: Does anyone have anything they wish to offer in Case 5155? We will take the case under advisement and take a 15-minute recess.





BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE NO. 5155  
Order No. R-4823

APPLICATION OF HARDING OIL COMPANY  
FOR DIRECTIONAL DRILLING, LEA  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 30, 1974, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 16th day of July, 1974, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Harding Oil Company, seeks to re-enter an existing well, the surface location of which is 2310 feet from the South line and 1650 feet from the West line of Section 34, Township 13 South, Range 32 East, adjacent to the old Gross-Devonian Pool, Lea County, New Mexico, and to directionally drill said well in such a manner as to bottom the well in the Devonian formation within 100 feet of a point 430 feet South 60 degrees West of the surface location.

(3) That at the request of the applicant, this case should be dismissed.

IT IS THEREFORE ORDERED:

(1) That Case No. 5155, being the application of Harding Oil Company to re-enter an existing well, the surface location of which is 2310 feet from the South line and 1650 feet from the West line of Section 34, Township 13 South, Range 32 East, adjacent to the old Gross-Devonian Pool, Lea County, New Mexico, and to directionally drill said well in such a manner as to bottom the well in the Devonian formation within 100 feet of a point 430 feet South 60 degrees West of the surface location is hereby dismissed.

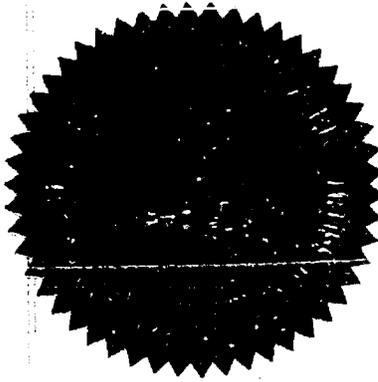
-2-

Case No. 5155  
Order No. R-4823

(2) That jurisdiction of this cause is hereby retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION



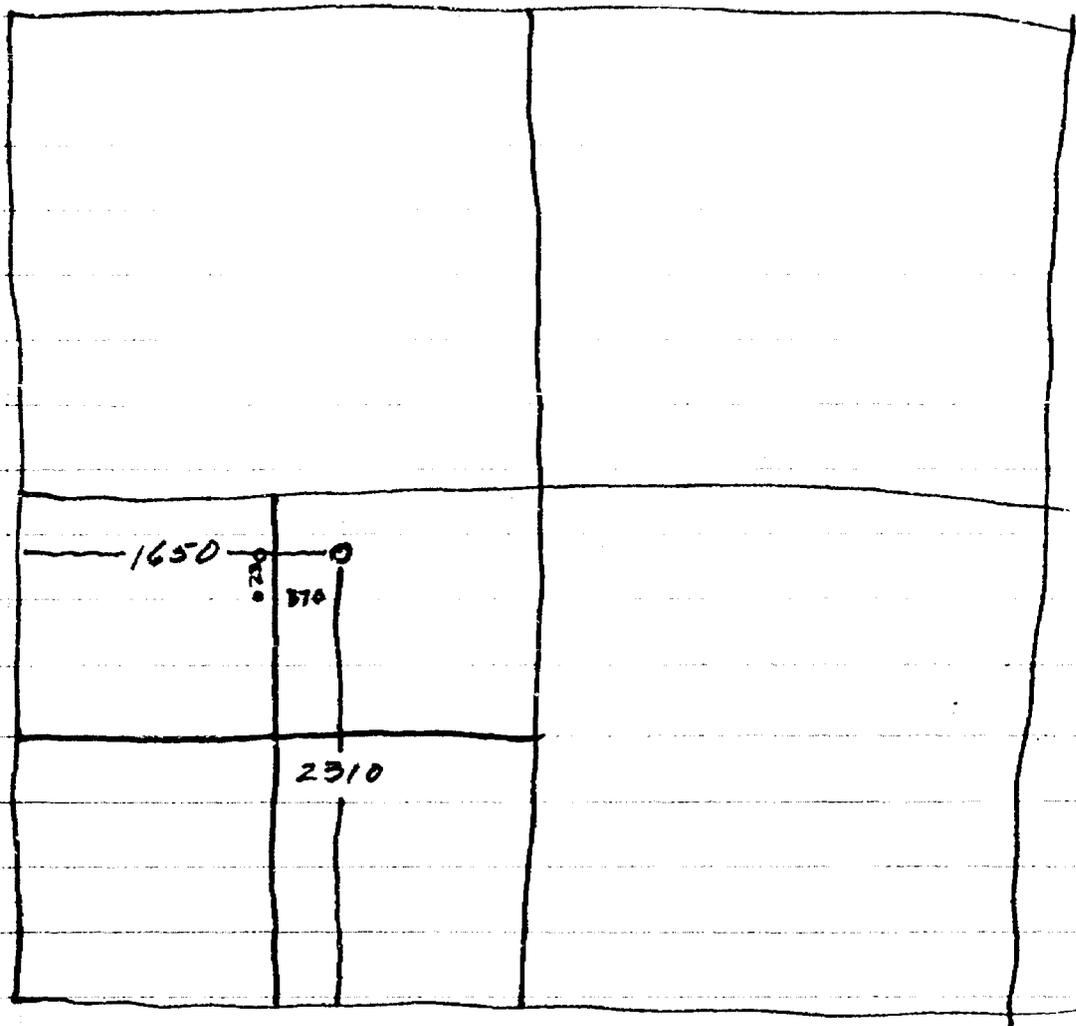
*I. R. Trujillo*  
I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

*A. L. Porter, Jr.*  
A. L. PORTER, Jr., Member & Secretary

S E A L

dr/



$$\begin{array}{r} 1650 \\ \underline{370} \\ 1280 \end{array} \quad \begin{array}{r} 2310 \\ \underline{230} \\ 2080 \end{array}$$

$$\begin{array}{r} 230^2 = 52900 \\ 370^2 = 136900 \\ \hline 189800 \end{array}$$

$$\sqrt{52900 + 136900} = 435.7$$

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 30, 1974

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 5153: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the amendment of Commission Form C-113, Refiner's Monthly Report.

CASE 5154: In the matter of the hearing called by the Oil Conservation Commission on its own motion, at the recommendation of the Commission's "Pictured Cliffs Gas Proration Committee," to consider the amendment of Commission Order No. R-1670 for the purpose of elimination of gas prorationing in the Aztec-Pictured Cliffs, Ballard-Pictured Cliffs, Fulcher Kutz-Pictured Cliffs, and West Kutz-Pictured Cliffs Gas Pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 5128: (Continued from the January 3, 1974, Examiner Hearing)

Application of Gulf Oil Corporation for a non-standard gas proration unit and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 160-acre non-standard gas proration unit comprising the NE/4 SW/4 and W/2 SE/4 of Section 28 and the NW/4 NE/4 of Section 33, both in Township 21 South, Range 37 East, Blinbry Gas Pool, Lea County, New Mexico, to be simultaneously dedicated to its J. N. Carson Wells Nos. 4 and 9 located in Units O and K, respectively, of Section 28.

CASE 5132: (Continued from the January 3, 1974, Examiner Hearing)

Application of American Quasar Petroleum Company of New Mexico for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the White City Unit Area comprising 5,120 acres, more or less, of Federal, State and fee lands in Township 25 South, Ranges 25 and 26 East, Eddy County, New Mexico.

CASE 5155: Application of Harding Oil Company for directional drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks to re-enter an existing well, the surface location of which is 2310 feet from the South line and 1650 feet from the West line of Section 34, Township 13 South, Range 32 East, adjacent to the old Gross-Devonian Pool, Lea County, New Mexico, and to directionally drill said well in such a manner as to bottom the well in the Devonian formation within 100 feet of a point 430 feet South 60 degrees West of the surface location.

- CASE 5156: Application of Franklin, Aston & Fair for pool creation and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new gas pool for Morrow production for its McIntyre Well No. 6-A located in Unit 0 of Section 20, Township 17 South, Range 30 East, Eddy County, New Mexico, and for the promulgation of special pool rules therefor including a provision for 640-acre spacing.
- CASE 5159: Application of Petroleum Reserve Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Wood Canyon Unit Area comprising 2,560 acres, more or less, of Federal and fee lands in Township 24 South, Range 25 East, Eddy County, New Mexico.
- CASE 5160: Application of Randolph M. Richardson for a unit agreement, Eddy and Chaves Counties, New Mexico. Applicant, in the above-styled cause, seeks approval for the West Hope Unit Area comprising 13,448 acres, more or less, of Federal, State and Fee lands in Townships 17 and 18 South, Ranges 20 and 21 East, Eddy and Chaves Counties, New Mexico.
- CASE 5161: Application of Depco, Inc. for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Northwest Artesia Unit Area comprising 640 acres, more or less of State lands in Sections 31 and 32, Township 17 South, Range 28 East, and Section 6, Township 18 South, Range 28 East, Eddy County, New Mexico.
- CASE 5144: (Continued and Readvertised)
- Application of Depco, Inc. for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg-San Andres formation through six wells located in its Northwest Artesia Unit Area, Artesia Pool, Eddy County, New Mexico.
- CASE 5162: Application of Western Oil Producers, Inc. for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill an undesignated Morrow gas well at an unorthodox location 1980 feet from the South line and 660 feet from the East line of Section 34, Township 17 South, Range 26 East, Eddy County, New Mexico, the S/2 of said Section 34 to be dedicated to the well.
- CASE 5163: Application of Western Oil Producers, Inc. for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill an undesignated Morrow gas well at an unorthodox location 660 feet from the South and East lines of Section 27, Township 17 South, Range 26 East, Eddy County, New Mexico, the S/2 of said Section 27 to be dedicated to the well. As an alternative, applicant seeks approval for a location 1980 feet from the South line and 660 feet from the East line of said Section 27.

- CASE 5158: Application of Cities Service Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 29, Township 21 South, Range 27 East, Eddy County, New Mexico, to be dedicated to its Simpson Well No. 1 to be drilled at an orthodox location for said unit. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 5157: Application of Cities Service Oil Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the S/2 of Section 9, Township 21 South, Range 27 East, Burton Flats Field, Eddy County, New Mexico, to be dedicated to its State C-P Well No. 1 to be drilled at an orthodox location for said unit. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 5164: Application of Jake L. Hamon for compulsory pooling and for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order force pooling all mineral interests in the Strawn and Morrow formations underlying the E/2 of Section 9, Township 21 South, Range 27 East, Burton Flats Field, Eddy County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 1650 feet from the North line and 660 feet from the East line of said Section 9. Also to be considered will be the cost of drilling and completing said well and the allocation of such costs, as well as actual operating costs and charges for supervision. Also to be considered is the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form No. 1  
Supersedes Form No. 1  
Effective 1-1-68

All distances must be from the outer boundaries of the Section

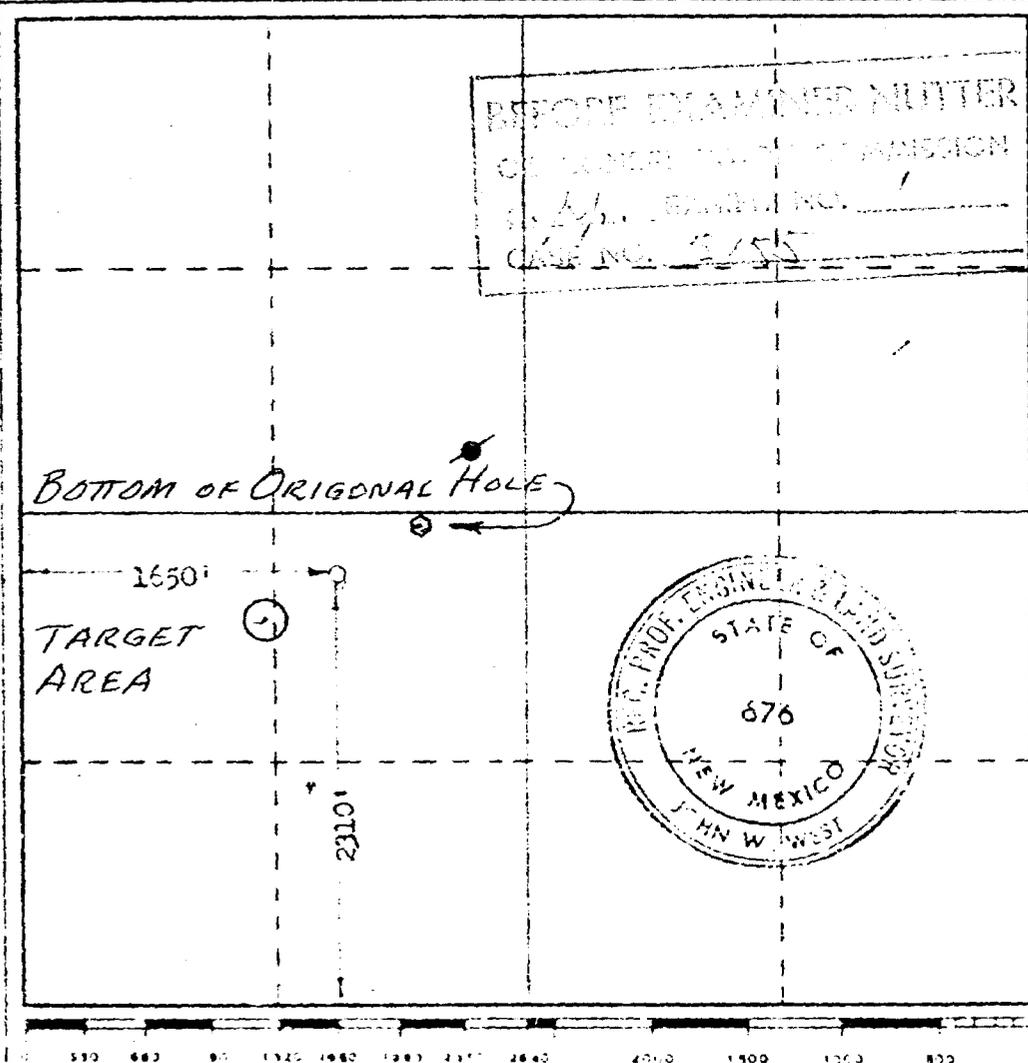
|                                |                                     |                          |                                  |                   |
|--------------------------------|-------------------------------------|--------------------------|----------------------------------|-------------------|
| LANDING OIL COMPANY            |                                     | State of <u>OK</u>       |                                  | Section <u>1</u>  |
| Well Letter <u>Y</u>           | Section <u>34</u>                   | Township <u>13 South</u> | Range <u>32 East</u>             | County <u>Lea</u> |
| Actual Well Location of Well   |                                     |                          |                                  |                   |
| <u>1650</u> feet from the West | <u>2310</u> feet from the South     |                          |                                  |                   |
| Ground Elev. <u>4220'</u>      | Enclosing Formation <u>Devonian</u> | Depth <u>1100'</u>       | Well and Acreage <u>NE SW 40</u> |                   |

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes  No If answer is "yes" type of consolidation \_\_\_\_\_

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, force-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name John W. West  
Agent

Company Harding Oil Company

Date 8-9-73

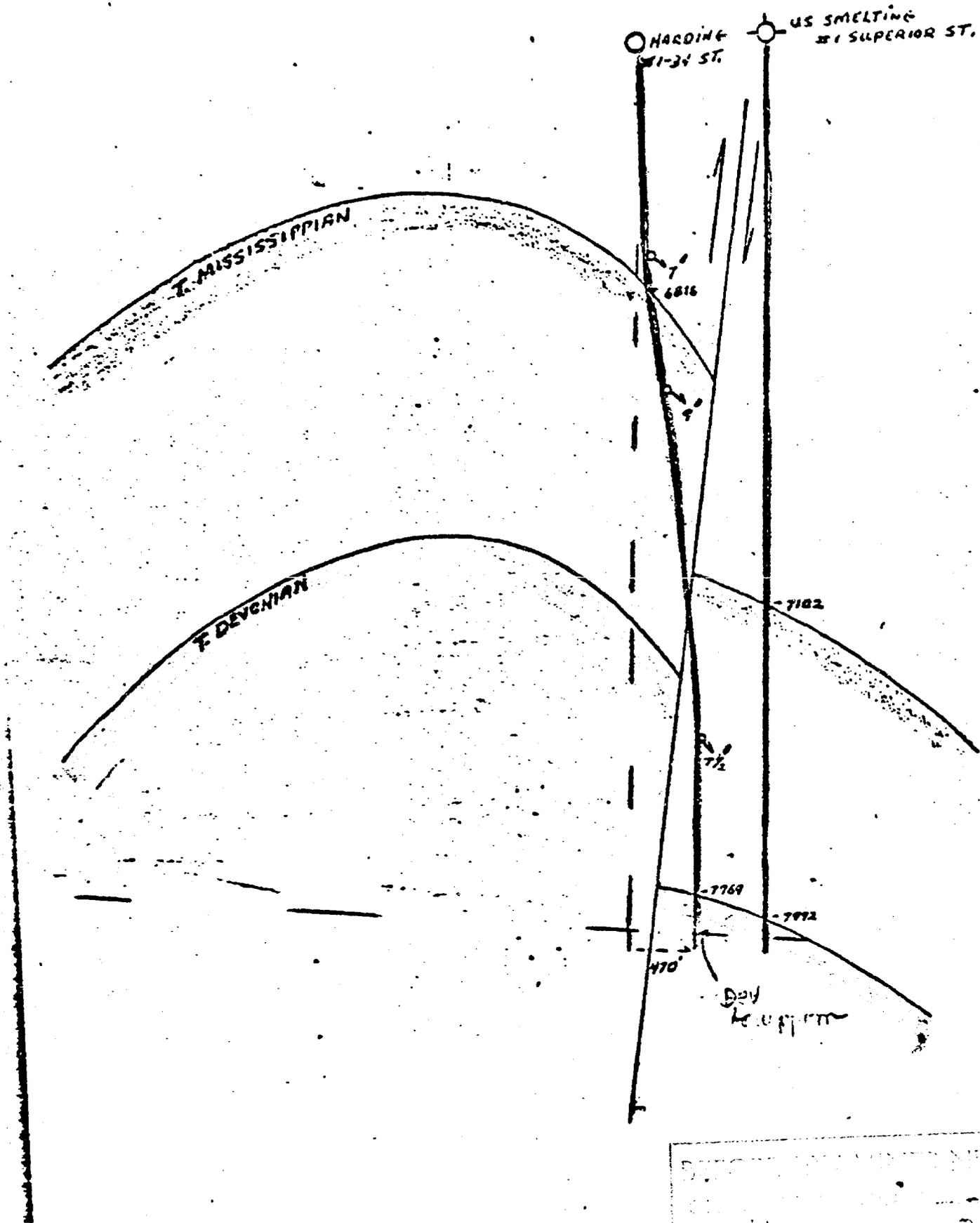
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date of Survey July 23, 1973

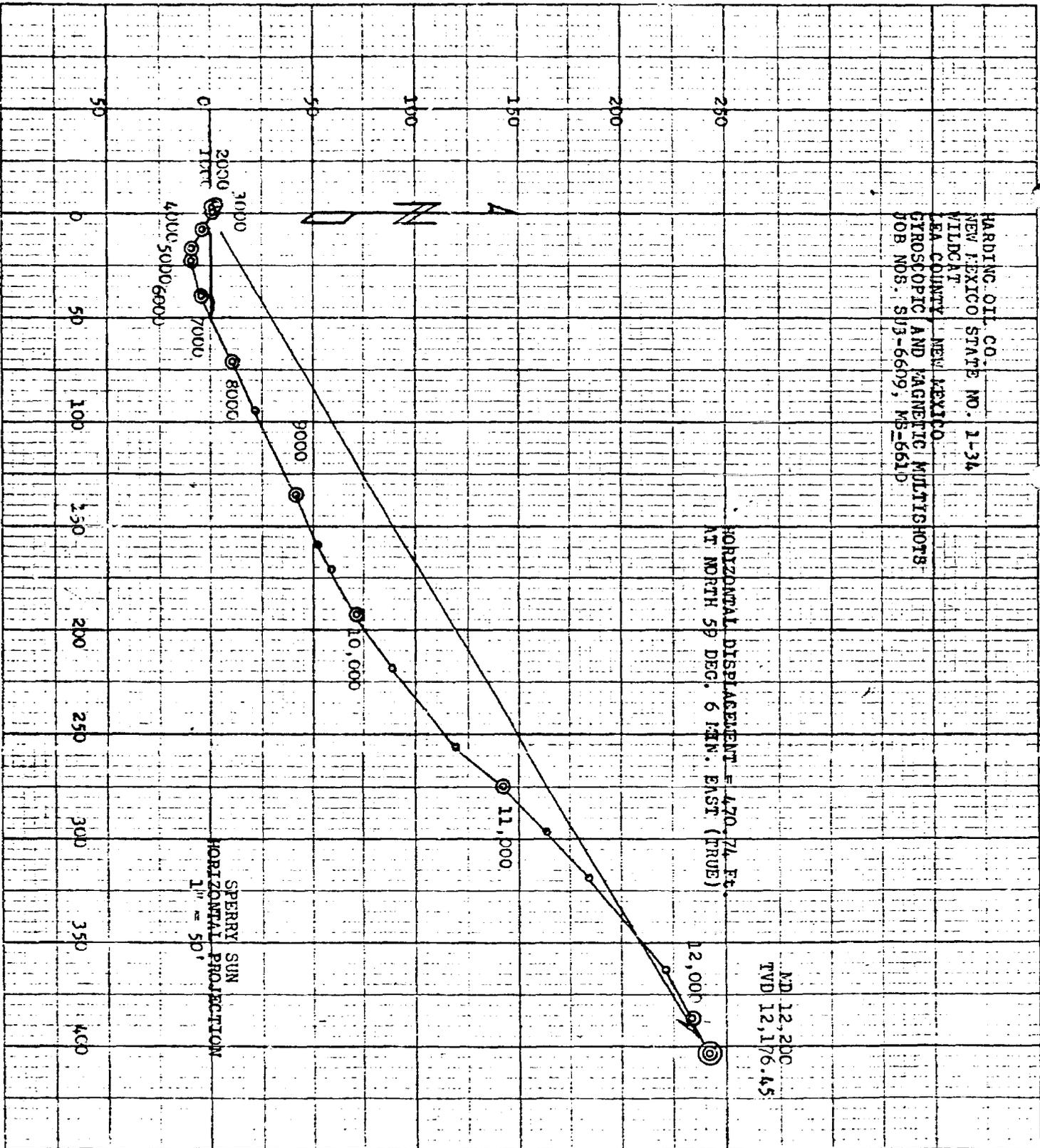
Signature of Surveyor John W. West

John W. West  
676

EXHIBIT A



RECORDED AND INDEXED  
COUNTY CLERK  
Dey Kupper  
CASE NO. 3/55





MARINE OIL CO  
 NEW MEXICO STATE NO. 34  
 WILCOAT  
 LTA COUNTY NEW MEXICO  
 TELESCOPIC MULTISHOT AND MULTISHOT

DATE OF SURVEY DECEMBER 1, 1973

VERTICAL SECTION COMPUTED ALONG CLOSURE

SUI-EE09 MS6610

SPERRY GUN  
 RECORD OF SURVEY

| MEASURED DEPTH | TRUE VERTICAL DEPTH | INCLINATION |     | DIRECTION | DOG-LEG SEVERITY |         | VERTICAL SECTION | RECTANGULAR COORDINATES |       |      |      |
|----------------|---------------------|-------------|-----|-----------|------------------|---------|------------------|-------------------------|-------|------|------|
|                |                     | DEG         | MIN |           | DEG              | DEG/100 |                  | NORTH                   | SOUTH | EAST | WEST |
| 4200.          | 4236.87             | 0           | 45  | S 35 E    | .08              | 5.32    | 6.50             | 9.78                    |       |      |      |
| 4400.          | 4399.87             | 0           | 33  | S 34 E    | .13              | 5.41    | 7.45             | 10.76                   |       |      |      |
| 4600.          | 4599.85             | 0           | 48  | S 46 E    | .14              | 6.09    | 9.25             | 12.64                   |       |      |      |
| 4800.          | 4799.83             | 0           | 45  | S 41 E    | .23              | 8.10    | 9.67             | 15.23                   |       |      |      |
| 5000.          | 4999.82             | 0           | 45  | S 44 E    | .02              | 10.19   | 9.95             | 17.83                   |       |      |      |
| 5200.          | 5199.81             | 0           | 33  | N 31 E    | .15              | 11.82   | 9.64             | 19.55                   |       |      |      |
| 5400.          | 5399.81             | 0           | 15  | N 72 E    | .13              | 12.68   | 9.37             | 20.38                   |       |      |      |
| 5600.          | 5599.80             | 0           | 30  | N 92 E    | .13              | 14.28   | 9.13             | 22.11                   |       |      |      |
| 5800.          | 5799.80             | 0           | 15  | N 89 E    | .13              | 15.05   | 9.10             | 22.93                   |       |      |      |
| 6000.          | 5999.73             | 0           | 15  | N 80 E    | .05              | 15.31   | 9.07             | 23.95                   |       |      |      |
| 6200.          | 6199.76             | 1           | 0   | N 86 E    | .39              | 19.92   | 8.83             | 27.33                   |       |      |      |
| 6400.          | 6399.73             | 1           | 0   | N 73 E    | .06              | 22.21   | 8.15             | 30.75                   |       |      |      |
| 6600.          | 6599.70             | 1           | 0   | N 76 E    | .01              | 25.51   | 7.44             | 34.17                   |       |      |      |
| 6800.          | 6799.67             | 1           | 0   | N 75 E    | .03              | 28.87   | 6.53             | 37.55                   |       |      |      |
| 7000.          | 6999.64             | 1           | 0   | N 60 E    | .09              | 32.34   | 5.05             | 40.71                   |       |      |      |
| 7200.          | 7199.61             | 1           | 0   | N 53 E    | .56              | 35.93   | 3.21             | 43.67                   |       |      |      |
| 7400.          | 7399.55             | 1           | 15  | N 40 E    | .13              | 40.19   | 1.03             | 47.45                   |       |      |      |
| 7600.          | 7599.41             | 2           | 15  | N 33 E    | .50              | 48.04   | 3.13             | 54.11                   |       |      |      |
| 7800.          | 7799.22             | 2           | 30  | N 62 E    | .24              | 56.68   | 6.40             | 62.12                   |       |      |      |
| 8000.          | 7999.04             | 3           | 5   | N 64 E    | .27              | 67.09   | 10.99            | 71.00                   |       |      |      |
| 8200.          | 8198.57             | 7           | 30  | N 67 E    | .25              | 79.27   | 16.53            | 82.48                   |       |      |      |

HARDING OIL CO  
 NEW MEXICO STATE NO. 1-34  
 WILDCAT  
 LEA COUNTY NEW MEXICO  
 CYROSCOPE MULTISHOT AND MULTISHOT

PAGE 3

DATE OF SURVEY DECEMBER 1, 1973

VERTICAL SECTION COMPUTED ALONG CLOSURE

SU3-6609 MSC610

SPERRY SUN  
RECORD OF SURVEY

| MEASURED DEPTH | TRUE VERTICAL DEPTH | INCLINATION |     | DIRECTION | DOG-LEG SEVERITY DEG/100 | VERTICAL SECTION | RECTANGULAR COORDINATES |       |        |      |
|----------------|---------------------|-------------|-----|-----------|--------------------------|------------------|-------------------------|-------|--------|------|
|                |                     | DEG         | MIN |           |                          |                  | NORTH                   | SOUTH | EAST   | WEST |
| 8400.          | 8536.08             | 4           | 6   | N 89 E    | .32                      | 93.02            | 21.53                   |       | 55.51  |      |
| 8600.          | 8597.53             | 4           | 15  | N 87 E    | .14                      | 107.70           | 27.33                   |       | 109.15 |      |
| 8800.          | 8706.98             | 4           | 15  | N 83 E    | .15                      | 122.48           | 34.05                   |       | 122.36 |      |
| 9000.          | 8996.43             | 4           | 15  | N 81 E    | .07                      | 137.30           | 41.24                   |       | 135.32 |      |
| 9200.          | 9195.88             | 4           | 15  | N 84 E    | .11                      | 152.07           | 47.74                   |       | 148.64 |      |
| 9400.          | 9395.51             | 3           | 30  | N 87 E    | .33                      | 154.16           | 52.51                   |       | 159.93 |      |
| 9600.          | 9595.14             | 3           | 30  | N 88 E    | .03                      | 176.28           | 57.47                   |       | 171.03 |      |
| 9800.          | 9794.76             | 3           | 30  | N 88 E    | .03                      | 183.43           | 62.63                   |       | 182.10 |      |
| 10000.         | 9994.28             | 4           | 6   | N 89 E    | .29                      | 202.36           | 70.44                   |       | 193.07 |      |
| 10200.         | 10193.66            | 4           | 30  | N 83 E    | .27                      | 217.96           | 79.33                   |       | 206.20 |      |
| 10400.         | 10392.97            | 4           | 45  | N 82 E    | .13                      | 234.43           | 89.95                   |       | 219.47 |      |
| 10600.         | 10591.48            | 7           | 0   | N 83 E    | 1.13                     | 253.00           | 104.51                  |       | 238.93 |      |
| 10800.         | 10790.16            | 6           | 45  | N 48 E    | .27                      | 281.81           | 119.94                  |       | 256.63 |      |
| 11000.         | 10988.83            | 8           | 15  | N 48 E    | .35                      | 300.92           | 141.32                  |       | 275.02 |      |
| 11200.         | 11188.56            | 9           | 0   | N 45 E    | .44                      | 330.98           | 164.00                  |       | 296.42 |      |
| 11400.         | 11388.24            | 3           | 45  | N 50 E    | .35                      | 369.02           | 194.36                  |       | 319.72 |      |
| 11600.         | 11591.04            | 8           | 30  | N 50 E    | .13                      | 398.21           | 203.36                  |       | 342.37 |      |
| 11800.         | 11773.97            | 3           | 15  | N 51 E    | .14                      | 426.62           | 221.42                  |       | 364.67 |      |
| 12000.         | 11977.33            | 7           | 15  | N 58 E    | .09                      | 451.86           | 234.50                  |       | 386.03 |      |
| 12200.         | 12175.45            | 5           | 30  | N 69 E    | 1.06                     | 470.74           | 241.67                  |       | 433.97 |      |

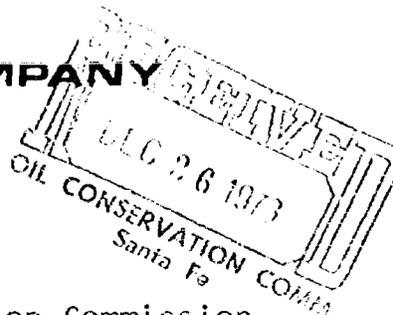
THE CALCULATION PROCEDURES ARE BASED ON THE USE OF THE TANGENTIAL OR CHORD METHOD

HORIZONTAL DISPLACEMENT = 470.74 FEET AT NORTH 53 DEG. 6 MIN. EAST (TRUE)



HARDING OIL COMPANY

December 20, 1973



New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

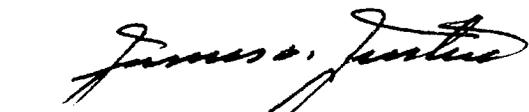
Re: New Mexico State 34-1 Well  
Lea County, New Mexico

Gentlemen:

Since there were no hearings set for the month of December, this is to request that a special hearing be held before the Commission during the month of January, 1974, to grant us permission for an exception to Rule III. We would like permission to directional drill the above well from our present location of 2310' FSL and 1650' FWL ~~to~~ Unit K, Section 34, T-13S, R-32E, and move the bottom of the hole 370' west and 230' south, or 430' from our surface location on a south 60 degrees west radial, thus making our target area between 330 and 530 feet radially - the north boundary being south 70 degrees west and the south boundary being south 50 degrees west. It is our plan to drill to the Devonian formation or approximately 12,500 feet.

Your favorable consideration for this hearing shall be greatly appreciated as we are proceeding with our operations to successfully drill and complete this well.

Very truly yours,

  
James O. Justice  
Chief Executive Officer

JOJ:fbp

cc: Oil Conservation Commission, Hobbs, New Mexico  
Midwest Oil Corporation, Midland, Texas  
Cities Service Oil Co., Midland, Texas  
✓ Hinkle, Bondurant, Cox & Eaton, Roswell, New Mex.  
Spencer & Hutson, Midland, Texas

408 CARILLON TOWER WEST  
13601 PRESTON ROAD  
DALLAS, TEXAS 75240  
(214) 661-5261

DOCKET MAILED

Date 1-18-74

DRAFT

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

dr/

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE NO. 5155

Order No. R-4823

APPLICATION OF HARDING OIL COMPANY  
FOR DIRECTIONAL DRILLING, LEA  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 30, 1974,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 7th day of May, 1974, the Commission,  
a quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, and being fully advised  
in the premises,

FINDS:

(1) That due public notice having been given as required by  
law, the Commission has jurisdiction of this cause and the subject  
matter thereof.

(2) That the applicant, Harding Oil Company, seeks to re-enter  
an existing well, the surface location of which is 2310 feet from the  
South line and 1650 feet from the West line of Section 34, Township 13 South,  
Range 32 East, adjacent to the old Gross-Devonian Pool, Lea County, New  
Mexico, and to directionally drill said well in such a manner as to bottom  
the well in the Devonian formation within 100 feet of a point 430 feet  
South 60 degrees West of the surface location.

*at the request of the applicant,*  
(3) That ~~the application should be denied.~~ *this case should*  
*be dismissed.*

IT IS THEREFORE ORDERED:

- Case No. 5155, being*  
(1) That <sup>^</sup>the application of Harding Oil Company to re-enter an existing well, the surface location of which is 2310 feet from the South line and 1650 feet from the West line of Section 34, Township 13 South, Range 32 East, adjacent to the old Gross-Devonian Pool, Lea County, New Mexico, and to directionally drill said well in such a manner as to bottom the well in the Devonian formation within 100 feet of a point 430 feet South 60 degrees West of the surface location is hereby ~~denied~~ *dismissed.*
- (2) That jurisdiction of this cause is hereby retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.