

Case Number
4565

Application

Transcripts

Small Exhibits

ETC.

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 14, 1971

EXAMINER HEARING

IN THE MATTER OF:)

Application of Tom L. Ingram to)
directionally drill, Lea County,)
New Mexico.)

Case No. 4565

BEFORE DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

1 MR. NUTTER: Call Case Number 4565.

2 MR. HATCH: Case 4565. Application of Tom L. Ingram
3 to directionally drill, Lea County, New Mexico.

4 MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox
5 and Eaton, Roswell, representing Tom Ingram. I would like to
6 have Mr. Ingram sworn in.

7 (Witness sworn)

8 MR. HINKLE: We have nine exhibits. These have
9 already been marked.

10 TOM L. INGRAM

11 having been first duly sworn, testified upon his oath as
12 follows:

13 DIRECT EXAMINATION

14 BY MR. HINKLE:

15 Q State your name and your address.

16 A Tom L. Ingram, Roswell.

17 Q You are an independent oil man?

18 A Yes. That's correct.

19 Q Are you a geologist?

20 A A geological engineer.

21 Q Have you previously qualified as a geological engineer
22 before the Commission?

23 A I have.

24 MR. HINKLE: Are the witness' qualifications
25 acceptable?

1 MR. NUTTER: Yes, they are.

2 Q (Mr. Hinkle continuing) I assume that you are familiar
3 with the application you filed in this case.

4 A I am.

5 Q What are you seeking to accomplish?

6 A Seeking to directionally drill to plug back to 7200 feet
7 in the Tom L. Ingram Number 1 State NM, and directionally
8 drill to the northwest approximately 600 feet.

9 Q And to bottom the hole where, at what formation?

10 A To bottom the hole in the Abo Reef, at a location no
11 closer than 330 feet to the proration unit upon which the
12 well is located.

13 Q Have you prepared, or has there been prepared under your
14 direction, certain exhibits for introduction into this
15 case?

16 A Yes, there has.

17 Q Refer to Exhibit Number 1 and explain what this is and
18 what it shows.

19 A Exhibit 1 is a plat showing the location of the subject
20 well, which was indicated by the red arrow, and the
21 ownership of adjacent acreage, and the location of other
22 wells. The attempts to find the Abo Reef in this area
23 have resulted in a number of dry holes, and those are
24 circled in red.

25 The offset owners, in addition to myself, are Hubert

1 Oil Company, Gulf and Sun.

2 Q Now, refer to Exhibit Number 2 and explain this to the
3 Commission.

4 A Exhibit Number 2 is a map of the same area on an even
5 larger scale. The subject well is again indicated by a
6 red arrow. The nearest producer is the Tom L. Ingram
7 Number 1 State NM, located in the northeast quarter of the
8 northwest quarter of Section 19.

9 This well was completed in March of 1971 for an
10 initial potential of 310 barrels a day.

11 The Sun Number 1 State D is an Abo Reef dry hole
12 located in the southeast quarter of the northwest quarter
13 of Section 19.

14 The Featherstone Number 2 Sun State is a dry hole
15 in the northwest quarter of the northwest quarter of
16 Section 19.

17 The Featherstone Number 1 Sun State is an Abo Reef
18 producer in the southwest quarter of the northwest quarter
19 of Section 19. It was completed April 11, 1964.

20 The Brunner Number 1 Southern Petroleum State is
21 another Abo Reef dry hole. It is located in the northeast
22 quarter of the northeast quarter of Section 24, 17 South,
23 35 East.

24 A Bell and Bancroft Number 1 Southern Petroleum State,
25 another Abo Reef dry hole in the southeast quarter of the

1 northeast quarter of Section 24, seventeen thirty-five.

2 The Featherstone Number 1 TP State is an Abo Reef
3 producer which was completed in January of 1964. It is
4 located in the northeast quarter of the southeast quarter
5 of Section 24.

6 The datum upon which the map is contoured is the top
7 of the Abo Reef. The wells shown with the blue or red
8 circle encountered the reef proper.

9 Those with blue had porosity, and those with circled
10 red are tight.

11 The wells shown with the green circle indicate back
12 reef sediments, which the one at the bottom of the page
13 with the brown circle was for reef or was for reef, or
14 a basinward.

15 The red line extending northeast, southwest through
16 the center of the map represents the approximate top of
17 the Abo Reef.

18 Q Refer to Exhibit Number 3 and explain this.

19 A Exhibit Number 3 is a cross section from the Glorietta
20 to approximately 8950 feet or slightly below the water
21 oil contact in the Vacuum-Abo Reef.

22 This extends from the northwest to the southeast
23 through the reef. As previously stated, the Featherstone
24 Number 2 Sun State, located on the left side had Shell
25 facies. On the right hand side or southeast is the Sun

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1 Number 1 State D.

2 This well encountered the top of the Abo Reef at a
3 datum higher than any of the other dry holes or producers
4 in the immediate area.

5 In the center of the section is the Tom L. Ingram
6 Number 1 State L. This well has been projected in a
7 southwesterly direction as if it were located approximately
8 halfway between the dry holes on either side.

9 The perforations are shown at the bottom portion of
10 the log between 8780 and 8893, which the Sun well
11 encountered the reef higher than the producers.

12 It's pay section was more permeable with a very low
13 order of porosity.

14 Assuming that porosity and permeability are immediately
15 northwest of this well and that the same would hold true
16 immediately southeast of the Featherstone Number 2 Sun
17 State, the productive portion of the reef can be no more
18 than 1200 feet wide at this point.

19 This gives a very small target from which commercial
20 productions can be obtained.

21 Q Do you have any further comment with respect to Exhibit 3?

22 A No. That's all.

23 Q Refer to Exhibit Number 4.

24 A Exhibit Number 4 shows a comparison between the Sun Number
25 1 State D and the Tom L. Ingram Number 1 State M.

1 It is readily noticeable that the porosity found in
2 the producer on the left side is absent in the other two
3 wells.

4 It is felt that this is a localized condition along
5 the basinward side of the reef. The course taken in the
6 Number 1 State M showed evidence of secondary material
7 filling the vugs and fractures.

8 The core description from the Sun Number 1 State D
9 indicated similar occurrences. Assuming that the State
10 M Number 1 and the Sun State D Number 1 are analogous
11 wells, and that porous reservoir rock lies immediately
12 adjacent, it is assumed that production in the State M
13 can be obtained by moving the bottom of the hole in a
14 northwesterly direction.

15 The cost to drill the State M to 8965 or its present
16 total depth has been slightly over \$100,000, to date.

17 It is estimated that by plugging back to 7200 and
18 directionally drilling, that the cost will be additional
19 \$50,000.

20 Q Refer to Exhibit Number 5 and explain what that shows.

21 A Exhibit Number 5 is a schematic diagram showing the
22 projected curvature of the proposed hole.

23 By starting at a plug back depth of 7200 feet and
24 using a dyna-drill with diamond bits, the hole will be
25 deviated in a northwesterly direction at approximately

1 two and a half degrees for one hundred feet.

2 This rate of deviation will continue until twenty-five
3 degrees has been attained at approximately 8170 feet.

4 At this point the degree of change will be reduced
5 to almost zero conditions.

6 However, it is the opinion of Eastman and others that
7 we will still have a slight amount of deviation so that
8 the total -- so that at total depth, slightly more than
9 twenty-six degrees will be the deviation.

10 A survey from the surface to 7200 feet will be
11 conducted prior to the whipstock operation, and service
12 during the drill operations will be conducted to control
13 both the direction and the deviation.

14 We propose that the bottom of the hole will be
15 approximately 600 feet northwest of the existing hole
16 at 7200 feet.

17 The deviations by Totco during the initial drilling
18 varied from a one half degree to two degrees, so it is
19 felt that the 7200 feet plug back location is approximately
20 the same as that at the surface.

21 Exhibit Number 5 also shows that it will be necessary
22 to drill to 9070 feet to reach a true vertical depth of
23 8950.

24 Q Would you refer to Exhibit Number 6?

25 A Exhibit Number 6 is a surveyor's plat showing the original

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1 surface location. The dashed line in the northwesterly
2 direction shows the proposed plant has been followed by
3 the whipstock operations.

4 If we are successful in making the deviations as
5 shown on the schematic diagram, the bottom of the hole
6 will be approximately 566 feet from the north and west
7 lines of the southwest quarter of the southeast quarter,
8 and 754 feet from the south and east lines of the same
9 proration unit.

10 It is requested that we be restricted only to keeping
11 the bottom of the hole from getting closer than 330 feet
12 to the edge of the proration unit.

13 By allowing a certain amount of variance, we will be
14 able to keep the cost to a minimum and to perhaps take
15 advantage of this natural depth of the strata.

16 Q Have you contacted the offset owners with respect to their
17 objections or approval of drilling this well?

18 A I have.

19 Q Now, refer to Exhibits 7, 8 and 9, and explain these.

20 A Exhibit 7 is a letter from the J. M. Hubert Corporation,
21 addressed to me, in which they state that they have no
22 objection to this operation.

23 Exhibit 8 is a letter from Gulf Oil Company to the
24 New Mexico Oil Conservation Commission stating the same
25 thing.

1 Exhibit 9 is a letter from Sun Oil Company to Rex
2 Alcorn who was in Dallas and contacted them for me, in
3 which they stated that they have no objections to this
4 operation.

5 Q In your opinion, would the directional drilling of this
6 well bottomed as you propose it be bottomed reflect in
7 any way against correlative rights of the offset owners?

8 A It will not.

9 Q Do you have anything else you would like to present to
10 the Commission?

11 A Just in summary that in my opinion, that with such a small
12 target, that the risk is extremely great.

13 There are eleven dry holes, one marginal producer
14 and two good producers, and this indicates somewhat the
15 difficulty in finding production.

16 By the proposed method of deviating the well, that the
17 recovery to the royalty owners can be increased if we
18 attempt completion in our present location.

19 We would have a dry hole or at least a marginal
20 producer at best.

21 The proposed operation will cost approximately
22 \$10,000 more now than it would have, had we been able to
23 have accomplished this on June the 17th.

24 The delay was necessitated by the rules set forth
25 in Rule 11B.

1 MR. HINKLE: We would like to offer in evidence
2 Exhibits 1 through 9.

3 MR. NUTTER: Applicant's Exhibits 1 through 9 will be
4 admitted in evidence.

5 MR. HINKLE: That's all.

6 MR. NUTTER: Does anyone have any questions of Mr.
7 Ingram?

8 CROSS EXAMINATION

9 BY MR. NUTTER:

10 Q Mr. Ingram, it appears, then, that what you have got here
11 is just a very narrow structure, just making its way right
12 between the whole bunch of dry holes, and it is a
13 difficult target to hit.

14 A Right. Extremely so.

15 Q And the first attempt with the wells missed it?

16 A Yes.

17 Q So it is your proposal now to deviate the well northwesterly?

18 A Yes.

19 Q But you don't want a specific target area?

20 A This 566 from the lessee, Exhibit Number 6 shows the
21 bottom of the hole being 566 feet from the north line
22 and 566 feet from the west line of that forty acre tract.
23 It is not a target, no.

24 Q That is just a general location for the bottom?

25 A Yes.

1 Q And you would prefer that the Commission simply limit
2 the bottom of the hole to no nearer than 330 feet to the
3 outer boundary of that forty acre tract?

4 A Yes. That's correct. Actually, we feel that when we
5 run our survey that the direction, rather than being
6 forty-five degree angle, may vary a little bit to the
7 south or the north of this, and we would like to take
8 advantage of that.

9 Q Now, has the hole been surveyed at the present time?

10 A Only by Totco.

11 Q I see. So this is just a hypothetical --

12 A Yes.

13 Q -- plan?

14 A That's correct.

15 Q Right here on Exhibit Number 5 it doesn't give the
16 specific actual bottom hole location that you will kick
17 off at, 7200 feet.

18 A Right. It will be determined once we run the survey.

19 Q And you will run a survey of the entire well bore prior
20 to setting your whipstock and dyna-drill?

21 A Yes.

22 Q And in the course of drilling, you will take additional
23 surveys to see where you are going and what angle?

24 A That's correct.

25 Q Is that customary in procedure in whipstock operations?

1 A Not in this part of the country. In other words, on most
2 of your whipstocks, they are uncontrolled, but I understand
3 from off-shore operations, and where you have to drill
4 around certain areas that you do this.

5 Q But if you are trying to achieve a target, you do set
6 your whipstock and take your surveys while you are
7 drilling?

8 A Yes. That's correct.

9 Q Now, you mentioned that the well, to date, had cost
10 \$100,000.

11 A That's correct.

12 Q And it will take an additional \$50,000 to set this
13 whipstock and --

14 A Yes.

15 Q -- redrill to the bottom?

16 A And to reach the total depth that we have and see whether
17 or not it is productive.

18 Q Now, you mentioned that you have one good well and one
19 marginal well in the pool at the present time.

20 A There are two good wells and one marginal.

21 Q Your well was completed in March of 1971, correct?

22 A That's correct.

23 Q And it had a potential of how much it was over 300?

24 A 310 barrels.

25 Q And then which is the other good well, Mr. Ingram?

1 A The Featherstone Number 1 Sun State, which is in the
2 northwest quarter of the northwest quarter of 19.

3 Q And it was completed in April of '64?

4 A Yes.

5 Q And what does it produce at the present time?

6 A It is a top allowable well.

7 Q And then the marginal well must be the well to the
8 southwest of this, then?

9 A Yes. That's correct. It is also a Featherstone well.

10 Q When was it completed?

11 A In January of '64, and it produces around twenty-five,
12 thirty barrels, somewhere in that vicinity.

13 Q All right.

14 MR. NUTTER: Are there any further questions of Mr.
15 Ingram? He may be excused. Do you have anything further, Mr.
16 Hinkle?

17 MR. HINKLE: Mr. Examiner, this is off the record in
18 this case, but I think Mr. Ingram would like to make a
19 recommendation for consideration of the Commission in connection
20 with the directional drilling and rules.

21 THE WITNESS: I would like to request that if the
22 Commission sees fit, that Rule 11B be amended in some way, which
23 would permit the operator to receive administrative approval
24 or some faster means so that you do not have to move the rig
25 from the hole and then move it back in, where the bottom of the

1 hole is to be no closer than 330 feet to any proration boundary.

2 Actually, our targets are getting smaller all the time,
3 and the drilling costs are up, and actually, this would
4 necessitate, or I mean facilitate our finding oil that otherwise
5 would not be found, I believe.

6 MR. NUTTER: Thank you, Mr. Ingram. Does anyone
7 else have anything they wish to offer in Case Number 4565?
8 Take the case under advisement.

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I N D E X

WITNESS

PAGE

TOM L. INGRAM

Direct Examination by Mr. Hinkle

2

Cross Examination by Mr. Nutter

11

E X H I B I T S

NUMBER

OFFERED

ADMITTED

Exhibits 1 through 9

11

11

1 STATE OF NEW MEXICO)
2 COUNTY OF BERNALILLO)

3 I, LINDA MALONE, Court Reporter, do hereby certify that
4 the foregoing and attached Transcript of Hearing before the
5 New Mexico Oil Conservation Commission was reported by me; and
6 that the same is a true and correct record of the said
7 proceedings, to the best of my knowledge, skill and ability.

8
9 Linda Malone
10 Court Reporter
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22 I do hereby certify that the foregoing is
23 a correct record of the hearing held before
24 the New Mexico Oil Conservation Commission
25 heard by me on 7/14 4565 71

Abraham, Secretary
New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

July 16, 1971

GOVERNOR
BRUCE KING
CHAIRMAN

**LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER**

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Mr. Clarence Hinkle
Hinkle, Bondurant, Cox & Eaton
Attorneys at Law
~~Post Office Box 10~~
Roswell, New Mexico 88201

Re: Case No. 4565
Order No. R-4169
Applicant:
TOM L. INGRAM

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC _____ x
Artesia OCC _____
Aztec OCC _____
Other _____

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. 4565
Order No. R-4169

APPLICATION OF TOM L. INGRAM
TO DIRECTIONALLY DRILL, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 14, 1971, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 16th day of July, 1971, 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, Tom L. Ingram, is the owner and operator of the Tom L. Ingram State M Well No. 1, having a surface location in Unit O, 330 feet from the South line and 1650 feet from the East line of Section 18, Township 17 South, Range 36 East, NMPM, Vacuum-Abo Reef Pool, Lea County, New Mexico.

(3) That the subject well was originally drilled to a total depth of approximately 9000 feet into a non-permeable section of the Abo Reef formation.

(4) That the applicant now seeks approval for the plugging of said well back to approximately 7200 feet, setting a whipstock at said depth and directionally drilling the well to a bottom-hole location in the Abo Reef formation northwest of the surface location and no nearer than 330 feet to the boundary of said Unit O.

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CASE NO. 4565
Order No. R-4169

(5) That the applicant proposes to determine the exact kick-off point in the subject well by means of a continuous multi-shot directional survey conducted prior to said directional drilling.

(6) That approval of the subject application will prevent the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tom L. Ingram, is hereby authorized to plug back his State M Well No. 1, located in Unit O, 330 feet from the South line and 1650 feet from the East line of Section 18, Township 17 South, Range 36 East, NMPM, Vacuum-Abo Reef Pool, Lea County, New Mexico, to approximately 7200 feet, set a whipstock at said depth and to directionally drill the well to a bottom-hole location in the Abo Reef formation northwest of the surface location and no nearer than 330 feet to the boundary of said Unit O.

PROVIDED HOWEVER, that prior to commencing the aforesaid operations, a continuous multi-shot directional survey shall be made of the well bore with shot points not more than 100 feet apart in order to determine the exact location of the kick-off point; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Commission, Box 2088, Santa Fe, New Mexico; and that the operator shall notify the Commission's Hobbs District Office of the date and time said survey is to be commenced.

(2) That subsequent to the above-described directional drilling, a continuous multi-shot directional survey shall be made of the well bore from total depth to the whipstock point with shot points not more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Commission, Box 2088, Santa Fe, New Mexico, and that the operator shall notify the Commission's Hobbs District Office of the date and time said survey is to be commenced.

(3) That Form C-105 shall be filed in accordance with Commission Rule 1108 and the operator shall indicate thereon true vertical depths in addition to measured depths.

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CASE NO. 4565

Order No. R-4169

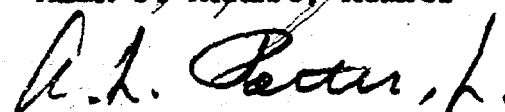
(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

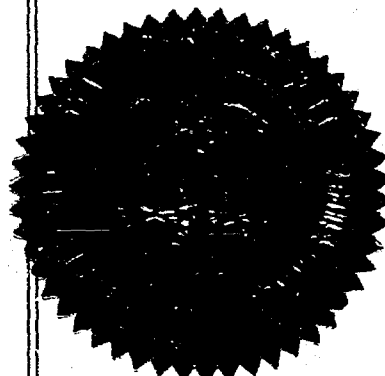
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


BRUCE KING, Chairman


ALEX J. ARMIJO, Member


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



S E A L

dr/

Docket No. 14-71

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 14, 1971

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 Elvis A. Utz, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for August, 1971, from fifteen prorated pools in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico.
- (2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, for August, 1971.

CASE 4565: Application of Tom L. Ingram to directionally drill, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill his State M Well No. 1, having a surface location 330 feet from the South line and 1650 feet from the East line of Section 18, Township 17 South, Range 36 East, Vacuum-Abo Reef Pool, Lea County, New Mexico. Applicant proposes to plug the well back to approximately 7200 feet and whipstock the well to a bottom-hole location northwest of the surface location and no nearer than 330 feet to the boundary of the dedicated proration unit.

CASE 4566: Application of W & H Production-Drilling, Inc. for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to Rule 104 of the Commission Rules and Regulations, approval of an unorthodox gas well location for the Black River Corporation Cities-Federal Well No. 1, located 1650 feet from the North and West lines of Section 34, Township 25 South, Range 24 East, undesignated Morrow gas pool, Eddy County, New Mexico.

CASE 4568: Application of W. W. West for a unit agreement, Otero County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Dog Canyon Unit Area comprising 37,782 acres, more or less, of Federal, State and fee lands in Townships 25 and 26 South, Ranges 19 and 20 East, Otero County, New Mexico.

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July 14, 1971
-2-

Docket No. 14-71

CASE 4569: Application of Barber Oil, Inc., for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a producing oil well at an unorthodox location 1326 feet from the South line and 5 feet from the West line of Section 13, Township 20 South, Range 28 East, as an infill well in its waterflood project in the Russell (Yates) Pool, Eddy County, New Mexico.

CASE 4567: Southeastern New Mexico nomenclature case calling for an order for the creation, extension and contraction of certain pools in Lea, Chaves, Eddy and Roosevelt Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Sand Dunes-Morrow Gas Pool. The discovery well is the Texas American Oil Corporation Todd 36 State No. 1 located in Unit F of Section 36, Township 23 South, Range 31 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
SECTION 36: W/2

(b) Contract the Red Lake Pool in Eddy County, New Mexico, by the deletion of the following described area:

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM
SECTION 18: SW/4 NW/4

(c) Extend the Atoka-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM
SECTION 18: SW/4 NW/4

(d) Extend the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 27 EAST, NMPM
SECTION 12: E/2

Examiner Hearing
July 14, 1971
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Docket No. 14-71

(Case 4567 continued)

(e) Extend the Eagle Creek-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 25 EAST, NMPM
SECTION 14: SE/4 NW/4
SECTION 22: W/2 NE/4
SECTION 23: W/2 SW/4
SECTION 26: N/2 NW/4
SECTION 27: NE/4 NE/4

(f) Extend the Southwest Gladiola-Devonian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 37 EAST, NMPM
SECTION 26: N/2

(g) Extend the Haystack-Cisco Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 6 SOUTH, RANGE 27 EAST, NMPM
SECTION 28: All

(h) Extend the Vada-Pennsylvanian Pool in Lea and Roosevelt Counties, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 35 EAST, NMPM
SECTION 32: SW/4

TOWNSHIP 9 SOUTH, RANGE 34 EAST, NMPM
SECTION 3: SE/4

CASE 4560: (Continued from the June 30, 1971, Examiner Hearing

Application of Rijan Oil Company, Inc. for a pressure maintenance project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot pressure maintenance project in the Slick Rock-Dakota Pool by the injection of water into the Dakota formation through its Rijan Wells Nos. 10, 12, and 14 located, respectively, in Units F, L, and K of Section 31, Township 30 North, Range 16 West, San Juan County, New Mexico.

SPERRY-SUN WELL SURVEYING COMPANY

CHARLES E. HAWK
PRESIDENT

P. O. Box 2133
Odessa, Texas
August 6, 1971

JOS. T. WILSON, JR.
SECRETARY-TREASURER

Tom L. Ingram
P. O. Box 1757
Roswell, New Mexico

Gentlemen:

The enclosed film and ten folders show the results of our Gyroscopic survey No. SUL.75-6040, Magnetic Multishot survey No. MS-6041 run on July 20, 1971 from surface to a depth of 7281 feet; and Magnetic Multishot survey No. MS-6048 run on August 5, 1971 from 7281 feet to 9037 feet. These surveys were performed on the State "M" lease Well No. 1, in the Vacuum Abo Reef field, Lea County, New Mexico.

One of these folders contains the original of the computation sheets, field data sheets, horizontal Projection and certification. Bottom hole location has been plotted in relation to the surface location on the certified plat furnished by you and copies of same have been included in all folders.

All copies have been certified and a copy is being sent by registered mail to the New Mexico Oil Conservation Commission, Box 2088, Santa Fe, New Mexico; Franklin, Aston and Fair box 1090, Roswell, New Mexico; Yates Drilling Company, 207 Fourth Street, Artesia, New Mexico; J. M. Huber Corporation, 1900 Wilco Bldg., Midland, Texas; and Gulf Oil Company, Mr. Lester Marshall, box 1938, Roswell, New Mexico.

It has been a pleasure to perform this service for you.

Very truly yours,

SPERRY-SUN WELL SURVEYING COMPANY

Benji Lipsey
Benji Lipsey
Directional Survey Tech.

BL
Enclosures

cc: New Mexico Oil Conservation Commission- Santa Fe w/encl. Aston, Franklin, and Fair w/encl.; Yates Drilling Company w/encl.; J.M. Huber Corporation w/encl.; and Gulf Oil Company Mr. Lester Marshall w/encl.
REGISTERED MAIL

SPERRY-SUN

DIRECTIONAL SURVEY REPORT

FOR

TOM L. INGRAM



TYPE OF SURVEY: GYROSCOPIC AND MAGNETIC MULTISHOT SURVEYS

SURVEY DEPTH: FROM Surface FT. TO 9037 FT.

LEASE: State "M" WELL NO. 1

FIELD: Vacuum Abo Reef

COUNTY/PARISH/ Lea STATE New Mexico

DATE OF SURVEY July 20, 1971 August 5, 1971 JOB NO. SU1.75-6040 MS-6041 MS-6048

OFFICE: ODESSA, TEXAS 563-1106

STATE OF TEXAS
COUNTY PARMER OF ECTOR

I/We, Benji Lipsey

_____, in the employ of the Directional Surveying Department of
Sperry-Sun Well Surveying Company, did on the 20 day of July 19 71
and the 20 day of July 19 71
and the 5 day of August 19 71
and the _____ day of _____ 19 _____

respectively conduct or supervise the taking of a Multi-shot/~~Single~~/~~9/4~~/Directional survey by method in-
dicated:

from a depth of Surface feet to 3400 feet by Gyroscopic/~~Magnetic~~/~~Oriented~~ Survey
depth of 3400 feet to 7281 feet by ~~Gyroscopic~~/Magnetic/~~Oriented~~ Survey
depth of 7281 feet to 9037 feet by ~~Gyroscopic~~/Magnetic/~~Oriented~~ Survey
depth of _____ feet to _____ feet by Gyroscopic/Magnetic/Oriented Survey

with records of inclination and direction of inclination being taken at approximately every 95 feet.

This survey was conducted at the request of Tom L. Ingram

for their State "NM" Well No. 1

330' FSL & 1650' FEL

Sec. 18 T17S R36E Survey, Lea County PARMER

State of New Mexico, in the Vacuum Abo Reef Field.

I/We certify that this is a true and correct report of such survey and that it affords a true and correct repre-
sentation of our findings as to the nature and conditions of the well at the time the ~~survey~~/~~surveys~~ were
made.

Benji Lipsey

STATE OF _____
COUNTY/PARISH OF _____

Before me the undersigned authority/authorities, on this day personally appeared _____,

known to me to be the person/persons whose name is/names are subscribed to this instrument, who after being
by me duly sworn on oath, states that he has/they have knowledge of all the facts stated above and that the same
is a true and correct statement of the facts therein recited.

Subscribed and sworn to before me this the _____ day of _____ 19 _____.

Notary Public in and for _____

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

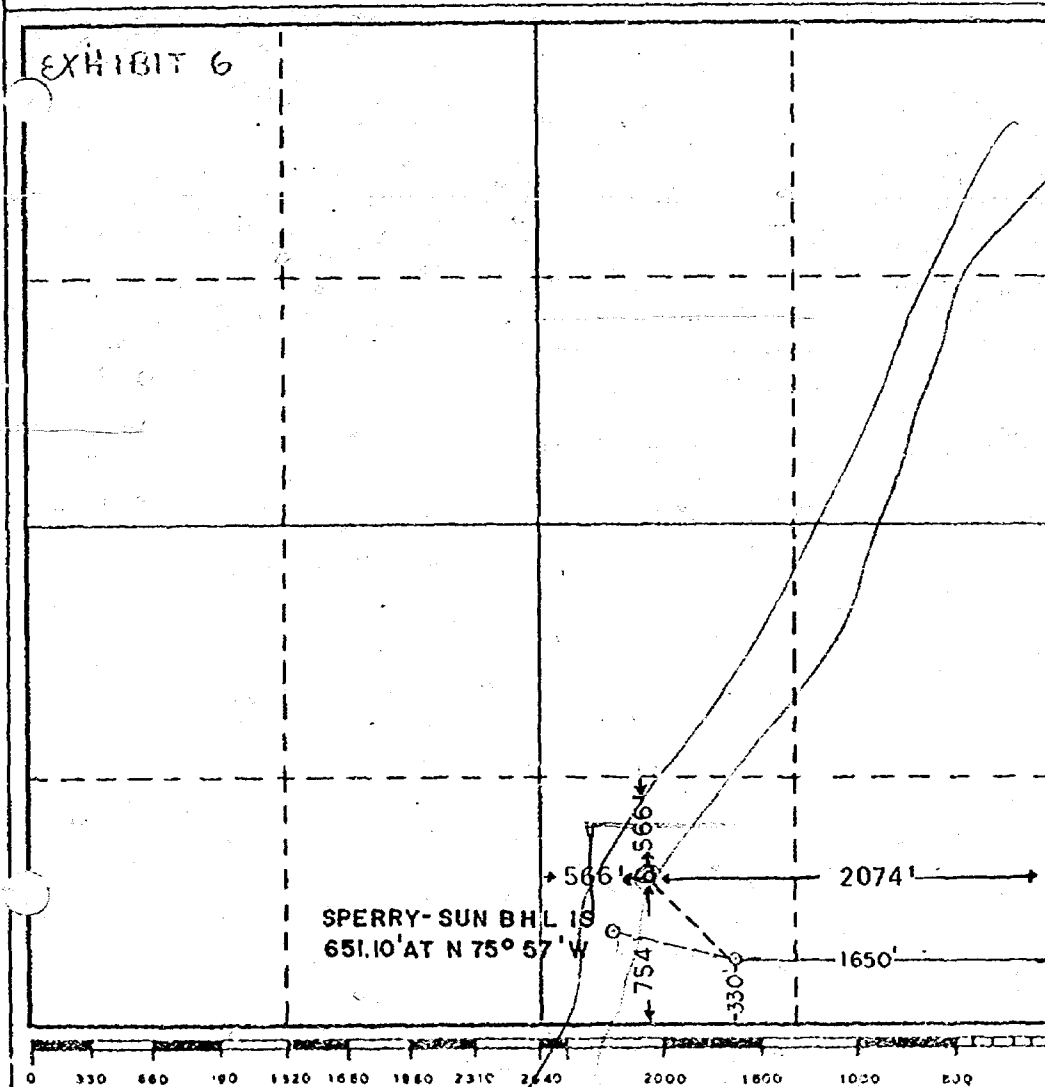
Operator TOM L. INGRAM			Lease STATE "M"		Well No. 1
Unit Letter O	Section 18	Township 17 SOUTH	Range 36 EAST	County LEA	
Actual Footage Location of Well: 330 feet from the SOUTH line and 1650 feet from the EAST line					
Ground Level Elev. 3885.6	Producing Formation Abo Reef		Pool Vacuum-Abo Reef	Dedicated Acreage: Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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, forced-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
Tom L. Ingram

Position
Operator

Company
TOM L. INGRAM

Date
July 9, 1971

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 Surveyed
5-5-1971

Registered Professional Engineer and/or Land Surveyor

John W. West
Certificate No. **676**

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM ABU REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 1
 DATE OF SURVEY JULY 20, 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-1.75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY
 RECORD OF SURVEY

MEASURED DEPTH	TRUE VERTICAL DEPTH	INCLINATION DEG MIN	DIRECTION DEG	DOG-LEG SEVERITY DEG/100	VERTICAL SECTION	RECTANGULAR COORDINATES			
						NORTH	SOUTH	EAST	WEST
0	.00	ORIGIN AT SURFACE				.00		.90	
100.	99.99	0	45	S 71 E	.75	-1.06	.43	1.24	
200.	199.98	0	45	S 70 E	.01	-2.13	.87	2.47	
300.	299.98	0	30	S 25 E	.53	-2.99	1.66	2.84	
400.	399.97	0	30	S 14 E	.10	-3.80	2.51	3.05	
500.	499.97	0	45	S 42 E	.39	-5.10	3.48	3.92	
600.	599.96	0	30	S 85 E	.51	-5.66	3.56	4.79	
700.	699.95	0	45	S 74 E	.28	-6.67	3.92	6.05	
800.	799.95	0	30	S 77 E	.25	-7.32	4.12	6.90	
900.	899.95	0	30	S 49 E	.24	-8.17	4.69	7.50	
1000.	999.94	0	30	S 69 E	.17	-8.89	5.00	8.37	
1100.	1099.94	0	30	S 44 E	.22	-9.75	5.63	8.98	
1200.	1199.93	0	30	S 43 E	.01	-10.61	6.27	9.58	
1300.	1299.93	0	15	S 56 E	.26	-11.02	6.51	9.94	
1400.	1399.93	0	30	S 29 E	.30	-11.89	7.28	10.50	
1500.	1499.93	0	30	S 29 E	.00	-12.76	8.04	10.76	
1600.	1599.92	0	45	S 29 E	.25	-14.06	9.18	11.42	
1700.	1699.91	0	30	S 41 E	.28	-14.93	9.84	11.99	
1800.	1799.91	0	30	S 27 E	.12	-15.79	10.62	12.39	
1900.	1899.90	0	30	S 4 W	.27	-16.47	11.49	12.33	
2000.	1999.90	0	15	S 13 E	.27	-16.88	11.92	12.42	

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM ABQ REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 2
 DATE OF SURVEY JULY 20, 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-1,75-6040 NS-6041

SPERRY-SUN WELL SURVEYING COMPANY
 RECORD OF SURVEY

MEASURED DEPTH	TRUE VERTICAL DEPTH	INCLINATION		DIRECTION		DOG-LEG SEVERITY DEG/100	VERTICAL SECTION	RECTANGULAR COORDINATES			
		DEG	MIN	DEG				NORTH	SOUTH	EAST	WEST
2100.	2099.90	0	15	S 24 E		.05	-17.31		12.31	12.60	
2200.	2199.90	0	0	S 0 E		.25	-17.31		12.31	12.60	
2300.	2299.90	0	30	S 63 W		.50	-17.19		12.71	11.82	
2400.	2399.89	0	30	S 71 W		.07	-16.95		12.99	11.00	
2500.	2499.89	0	0	S 0 E		.50	-16.95		12.99	11.00	
2600.	2599.89	0	15	S 85 W		.25	-16.73		13.03	10.56	
2700.	2699.89	0	0	S 0 E		.25	-16.73		13.03	10.56	
2800.	2799.89	0	30	N 8 E		.50	-16.09		12.17	10.69	
2900.	2899.87	1	0	N 27 E		.55	-15.27		10.61	11.48	
3000.	2999.85	1	15	N 45 E		.43	-14.88		9.07	13.02	
3100.	3099.83	1	0	N 36 E		.31	-14.31		7.66	14.05	
3200.	3199.82	0	45	N 57 E		.40	-14.35		6.95	15.14	
3300.	3299.82	0	30	N 56 E		.25	-14.36		6.46	15.87	
3400.	3399.82	0	30	N 10 W		.54	-13.57		5.60	15.72	
3491.	3490.81	0	30	N 9 W		.01	-12.86		4.81	15.59	
3585.	3584.80	0	45	N 12 W		.27	-11.72		3.61	15.34	
3679.	3678.80	0	30	N 7 W		.27	-11.00		2.80	15.24	
3773.	3772.80	0	30	N 10 W		.03	-10.25		1.99	15.09	
3867.	3866.79	0	30	N 6 W		.04	-9.53		1.17	15.01	
3961.	3960.78	0	45	N 25 W		.34	-8.32		.06	14.49	
4055.	4054.78	0	45	N 27 W		.03	-7.10	1.04		13.93	

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM ABW REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 3
 DATE OF SURVEY JULY 20, 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-1.75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY
 RECORD OF SURVEY

MEASURED DEPTH	TRUE VERTICAL DEPTH	INCLINATION		DIRECTION	DIP-LEG SEVERITY DEG/100	VERTICAL SECTION	RECTANGULAR COORDINATES			
		DEG	MIN				NORTH	SOUTH	EAST	WEST
4149.	4148.76	1	0	N 28 W	.27	-5.47	2.49		13.16	
4243.	4242.75	0	45	N 40 W	.33	-4.25	3.43		12.37	
4337.	4336.73	1	15	N 47 W	.55	-2.24	4.83		10.87	
4431.	4430.70	1	15	N 47 W	.00	-.24	6.23		9.37	
4525.	4524.68	1	15	N 46 W	.02	1.77	7.65		7.89	
4619.	4618.66	1	15	N 56 W	.23	3.69	8.80		6.19	
4713.	4712.63	1	15	N 58 W	.05	5.57	9.88		4.46	
4807.	4806.62	1	0	N 62 W	.28	7.03	10.65		3.01	
4901.	4900.59	1	15	N 64 W	.27	8.82	11.55		1.16	
4995.	4994.57	1	15	N 63 W	.02	10.63	12.48			.66
5089.	5088.55	1	15	N 69 W	.14	12.32	13.22			2.58
5183.	5182.52	1	15	N 48 W	.48	14.32	14.59			4.10
5277.	5276.49	1	30	N 46 W	.27	16.73	16.30			5.87
5371.	5370.46	1	30	N 41 W	.14	19.18	18.16			7.49
5465.	5464.42	1	30	N 39 W	.06	21.64	20.07			9.04
5559.	5558.39	1	30	N 42 W	.08	24.08	21.90			10.68
5653.	5652.36	1	30	N 53 W	.31	26.41	23.38			12.65
5747.	5746.32	1	30	N 49 W	.11	28.80	24.99			14.50
5841.	5840.29	1	30	N 44 W	.14	31.23	26.76			16.21
5935.	5934.25	1	45	N 53 W	.38	33.96	28.49			18.51
6029.	6028.21	1	30	N 43 W	.40	36.39	30.29			20.18

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM AND REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 4
 DATE OF SURVEY JULY 20, 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-1.75-6040 NS-6041

SPERRY-SUN WELL SURVEYING COMPANY
 RECORD OF SURVEY

MEASURED DEPTH	TRUE VERTICAL DEPTH	INCLINATION		DIRECTION	DUG-LEG SEVERITY DEG/100	VERTICAL SECTION	RECTANGULAR COORDINATES			
		DEG	MIN				NORTH	SOUTH	EAST	WEST
6123.	6122.18	1	30	N 44 W	.03	38.82	32.06			21.89
6217.	6216.13	1	45	N 51 W	.34	41.58	33.87			24.12
6311.	6310.09	1	45	N 42 W	.29	44.43	36.00			25.04
6405.	6404.04	1	45	N 35 W	.23	47.30	38.35			27.69
6499.	6498.00	1	45	N 39 W	.13	50.16	40.58			29.50
6593.	6591.94	2	0	N 31 W	.38	53.43	43.40			31.19
6687.	6685.88	2	0	N 34 W	.11	56.71	46.11			33.02
6781.	6779.82	2	0	N 29 W	.19	59.98	48.98			34.01
6875.	6873.77	2	0	N 31 W	.07	63.25	51.80			36.30
6969.	6967.69	2	15	N 38 W	.38	66.93	54.70			38.57
7063.	7061.62	2	15	N 31 W	.29	70.62	57.67			40.47
7157.	7155.54	2	15	N 33 W	.06	74.31	60.96			42.48
7251.	7249.47	2	15	N 34 W	.04	78.00	64.02			44.55
7281.	7279.45	2	0	N 34 W	.83	79.04	64.89			45.13

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

HORIZONTAL DISPLACEMENT = 79.04 FEET AT NORTH 34 DEG. 49 MIN. WEST (TRUE)

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM AND REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 1
 DATE OF SURVEY AUGUST 5 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-175-6040 MS-6041 MS-6048

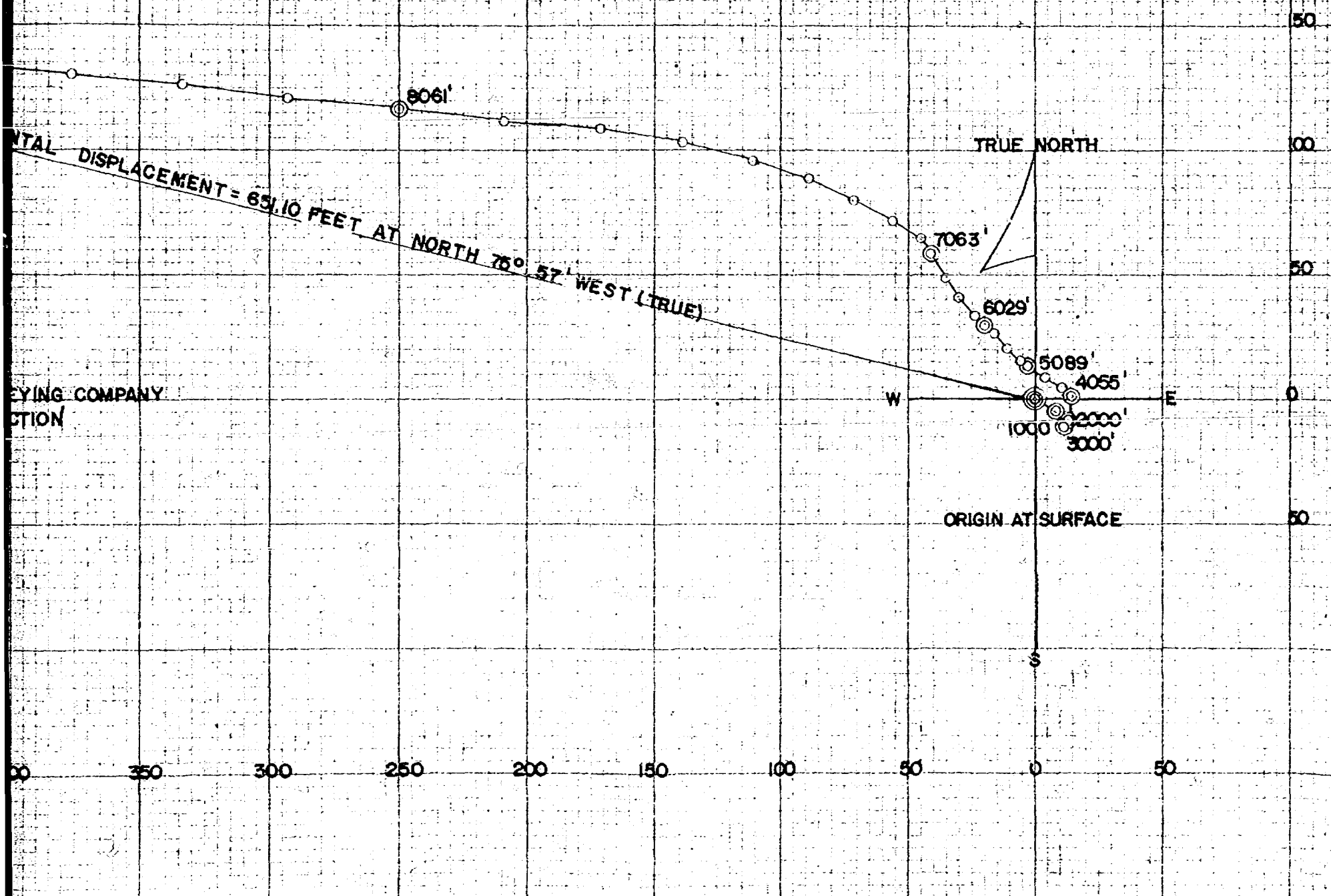
SPERRY-SUN WELL SURVEYING COMPANY
 RECORD OF SURVEY

MEASURED DEPTH	TRUE VERTICAL DEPTH	INCLINATION DEG MIN	DIRECTION DEG	DOG-LEG SEVERITY DEG/100	VERTICAL SECTION	RECTANGULAR COORDINATES			
						NORTH	SOUTH	EAST	WEST
7281.	7279.45	COORDINATES FROM SU175-6040 MS-6041				64.89			45.13
7305.	7303.39	4	0	N 34 W	8.63	60.77			46.07
7400.	7397.58	7	30	N 55 W	4.24	72.35			56.22
7494.	7490.15	10	0	N 64 W	3.02	88.31			70.89
7588.	7582.09	12	0	N 68 W	2.28	107.57			89.02
7683.	7673.96	14	45	N 71 W	2.98	131.77			111.85
7778.	7764.69	17	15	N 76 W	3.00	159.94			139.22
7873.	7853.67	20	30	N 82 W	3.98	193.02			172.17
7967.	7940.20	23	0	N 82 W	2.66	229.55			208.54
8061.	8024.68	26	0	N 84 W	3.31	270.35			249.52
8156.	8109.14	27	15	N 84 W	1.32	313.42			292.78
8250.	8193.26	26	30	N 84 W	.80	354.95			334.49
8344.	8277.20	26	45	N 84 W	.27	396.84			376.57
8439.	8364.48	23	15	N 85 W	3.71	433.88			413.93
8533.	8451.94	21	30	N 83 W	2.03	468.07			448.12
8628.	8540.62	21	0	N 84 W	.65	501.78			481.98
8723.	8629.16	21	15	N 85 W	.46	535.79			516.28
8818.	8717.55	21	30	N 84 W	.47	570.26			550.91
8913.	8805.78	21	45	N 83 W	.47	605.20			585.85
9007.	8892.94	22	0	N 83 W	.27	640.15			620.80
9037.	8920.85	21	30	N 81 W	2.98	651.10			631.66

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

HORIZONTAL DISPLACEMENT = 651.10 FEET AT NORTH 75 DEG. 57 MIN. WEST (TRUE)

TOM L. INGRAM
 NEW MEXICO STATE WELL NO. 1
 VACUUM ABO REEF FIELD
 LEA COUNTY, NEW MEXICO
 GYROSCOPIC DIRECTIONAL SURVEY NO. 175-6040
 MAGNETIC MULTISHOT DIRECTIONAL SURVEY NO. 6041 & 6048
 AUGUST 5, 1971
 SCALE 1" = 50'



MD= 9037'
TVD= 8920.85'
9007'

HORIZ

SPERRY-SUN WELL SURV
HORIZONTAL PROJ

650

600

550

500

450

SPERRY-SUN WELL SURVEYING COMPANY

CHARLES E. HAWK
PRESIDENT

P.O. Box 2133
Odessa, Texas
July 27, 1971

JOS. T. WILSON, JR.
SECRETARY-TREASURER

State of New Mexico
Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico

Gentlemen:

The enclosed folder show the results of our Gyroscopic Multishot survey job no. SU1.75-6040, and Magnetic Multishot survey job no. MS-6041, performed for Tom Ingram on the State M lease, well no. 1, in the Vacuum Abo Field, on July 20, 1971. This survey was run from surface to a depth of 7,281 ft.

Very truly yours,

SPERRY-SUN WELL SURVEYING COMPANY

Gary D. Benson

Gary D. Benson
District Manager

gb

Enclosures

REGISTERED MAIL

cc: Tom Ingram, P.O. Box 1757, Roswell, New Mexico

SPERRY-SUN

DIRECTIONAL SURVEY REPORT

FOR

Tom Ingram



TYPE OF SURVEY: Gyroscopic & Magnetic
Directional Survey
SURVEY DEPTH: FROM Surface FT. TO 7281 FT.
LEASE: State M WELL NO. 1
FIELD: Vacuum Abo
COUNTY/ ~~EXHIBIT~~ Lea STATE New Mexico
SU1.75-6040
DATE OF SURVEY 7-20-71 JOB NO. MS-6041
OFFICE: Odessa, Texas
LO-3-1106

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM ABØ REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 1
 DATE OF SURVEY JULY 20, 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-1,75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY
 RECORD OF SURVEY

MEASURED DEPTH	TRUE	INCLINATION		DIRECTION	DOG-LEG	VERTICAL SECTION	RECTANGULAR COORDINATES			
	VERTICAL DEPTH	DEG	MIN	DEG	SEVERITY DEG/100		NORTH	SOUTH	EAST	WEST
0	00	ORIGIN AT SURFACE					00		00	
100.	99.99	0	45	S 71 E	.75	-1.06		.43	1.24	
200.	199.98	0	45	S 70 E	.01	-2.13		.87	2.47	
300.	299.98	0	30	S 25 E	.53	-2.99		1.66	2.84	
400.	399.97	0	30	S 14 E	.10	-3.80		2.51	3.05	
500.	499.97	0	45	S 42 E	.39	-5.10		3.48	3.92	
600.	599.96	0	30	S 85 E	.51	-5.66		3.56	4.79	
700.	699.95	0	45	S 74 E	.28	-6.67		3.92	6.05	
800.	799.95	0	30	S 77 E	.25	-7.32		4.12	6.90	
900.	899.95	0	30	S 49 E	.24	-8.17		4.69	7.56	
1000.	999.94	0	30	S 69 E	.17	-8.89		5.00	8.37	
1100.	1099.94	0	30	S 44 E	.22	-9.75		5.63	8.98	
1200.	1199.93	0	30	S 43 E	.01	-10.61		6.27	9.58	
1300.	1299.93	0	15	S 56 E	.26	-11.02		6.51	9.94	
1400.	1399.93	0	30	S 29 E	.30	-11.89		7.28	10.36	
1500.	1499.93	0	30	S 29 E	.00	-12.76		8.04	10.78	
1600.	1599.92	0	45	S 29 E	.25	-14.06		9.18	11.42	
1700.	1699.91	0	30	S 41 E	.28	-14.93		9.84	11.99	
1800.	1799.91	0	30	S 27 E	.12	-15.79		10.62	12.39	
1900.	1899.90	0	30	S 4 W	.27	-16.47		11.49	12.33	
2000.	1999.90	0	15	S 13 E	.27	-16.88		11.92	12.42	

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM AB0 REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 2
 DATE OF SURVEY JULY 20, 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-1,75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY
 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
2100.	2099.90	0	15	S 24 E	.05	-17.31		12.31	12.60	
2200.	2199.90	0	0	S 0 E	.25	-17.31		12.31	12.60	
2300.	2299.90	0	30	S 63 W	.50	-17.19		12.71	11.82	
2400.	2399.89	0	30	S 71 W	.07	-16.95		12.99	11.00	
2500.	2499.89	0	0	S 0 E	.50	-16.95		12.99	11.00	
2600.	2599.89	0	15	S 85 W	.25	-16.73		13.03	10.56	
2700.	2699.89	0	0	S 0 E	.25	-16.73		13.03	10.56	
2800.	2799.89	0	30	N 8 E	.50	-16.09		12.17	10.69	
2900.	2899.87	1	0	N 27 E	.55	-15.27		10.61	11.48	
3000.	2999.85	1	15	N 45 E	.43	-14.88		9.07	13.02	
3100.	3099.83	1	0	N 36 E	.31	-14.31		7.66	14.05	
3200.	3199.82	0	45	N 57 E	.40	-14.35		6.95	15.14	
3300.	3299.82	0	30	N 56 E	.25	-14.36		6.46	15.87	
3400.	3399.82	0	30	N 10 W	.54	-13.57		5.60	15.72	
3491.	3490.81	0	30	N 9 W	.01	-12.86		4.81	15.59	
3585.	3584.80	0	45	N 12 W	.27	-11.72		3.61	15.34	
3679.	3678.80	0	30	N 7 W	.27	-11.00		2.80	15.24	
3773.	3772.80	0	30	N 10 W	.03	-10.25		1.99	15.09	
3867.	3866.79	0	30	N 6 W	.04	-9.53		1.17	15.01	
3961.	3960.78	0	45	N 25 W	.34	-8.32		.06	14.49	
4055.	4054.78	0	45	N 27 W	.03	-7.10	1.04		13.95	

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM ABQ REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 3
 DATE OF SURVEY JULY 20, 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-1,75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY
 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
4149.	4148.76	1	0	N 28 W	.27	-5.47	2.49		13.16	
4243.	4242.75	0	45	N 40 W	.33	-4.25	3.43		12.37	
4337.	4336.73	1	15	N 47 W	.55	-2.24	4.83		10.87	
4431.	4430.70	1	15	N 47 W	.00	-2.24	6.23		9.37	
4525.	4524.68	1	15	N 46 W	.02	1.77	7.65		7.89	
4619.	4618.66	1	15	N 55 W	.23	3.69	8.80		6.19	
4713.	4712.63	1	15	N 58 W	.05	5.57	9.88		4.46	
4807.	4806.62	1	0	N 62 W	.28	7.03	10.65		3.01	
4901.	4900.59	1	15	N 64 W	.27	8.82	11.55		1.16	
4995.	4994.57	1	15	N 63 W	.02	10.63	12.48			.66
5089.	5088.55	1	15	N 69 W	.14	12.32	13.22			2.58
5183.	5182.52	1	15	N 48 W	.48	14.32	14.59			4.10
5277.	5276.49	1	30	N 46 W	.27	16.73	16.30			5.87
5371.	5370.46	1	30	N 41 W	.14	19.18	18.16			7.49
5465.	5464.42	1	30	N 39 W	.06	21.64	20.07			9.04
5559.	5558.39	1	30	N 42 W	.08	24.08	21.90			10.68
5653.	5652.36	1	30	N 53 W	.31	26.41	23.38			12.65
5747.	5746.32	1	30	N 49 W	.11	28.80	24.99			14.50
5841.	5840.29	1	30	N 44 W	.14	31.23	26.76			16.21
5935.	5934.25	1	45	N 53 W	.35	33.96	28.40			18.51
6029.	6028.21	1	30	N 43 W	.40	36.39	30.29			20.18

TOM L INGRAM
 NEW MEXICO STATE WELL NO 1
 VACUUM ABN REEF FIELD
 LEA COUNTY NEW MEXICO
 GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 4
 DATE OF SURVEY JULY 20, 1971
 VERTICAL SECTION COMPUTED ALONG CLOSURE
 11 DEG EAST MAGNETIC CORRECTION APPLIED
 SU-1.75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY
 RECORD OF SURVEY

MEASURED DEPTH	TRUE VERTICAL DEPTH	INCLINATION		DIRECTION	DEG-LEG SEVERITY DEG/100	VERTICAL SECTION	RECTANGULAR COORDINATES			
		DEG	MIN				NORTH	SOUTH	EAST	WEST
6123.	6122.18	1	30	N 44 W	.03	38.82	32.06			21.89
6217.	6216.13	1	45	N 51 W	.34	41.58	33.87			24.12
6311.	6310.09	1	45	N 42 W	.29	44.43	36.00			26.04
6405.	6404.04	1	45	N 35 W	.23	47.30	38.35			27.69
6499.	6498.00	1	45	N 39 W	.13	50.16	40.58			29.50
6593.	6591.94	2	0	N 31 W	.38	53.43	43.40			31.19
6687.	6685.88	2	0	N 34 W	.11	56.71	46.11			33.02
6781.	6779.82	2	0	N 29 W	.19	59.98	48.98			34.61
6875.	6873.77	2	0	N 31 W	.07	63.25	51.80			36.30
6969.	6967.69	2	15	N 38 W	.38	66.93	54.70			38.57
7063.	7061.62	2	15	N 31 W	.29	70.62	57.87			40.47
7157.	7155.54	2	15	N 33 W	.08	74.31	60.96			42.48
7251.	7249.47	2	15	N 34 W	.04	78.00	64.02			44.55
7281.	7279.45	2	0	N 34 W	.83	79.04	64.89			45.13

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

HORIZONTAL DISPLACEMENT = 79.04 FEET AT NORTH 34 DEG. 49 MIN. WEST (TRUE)

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

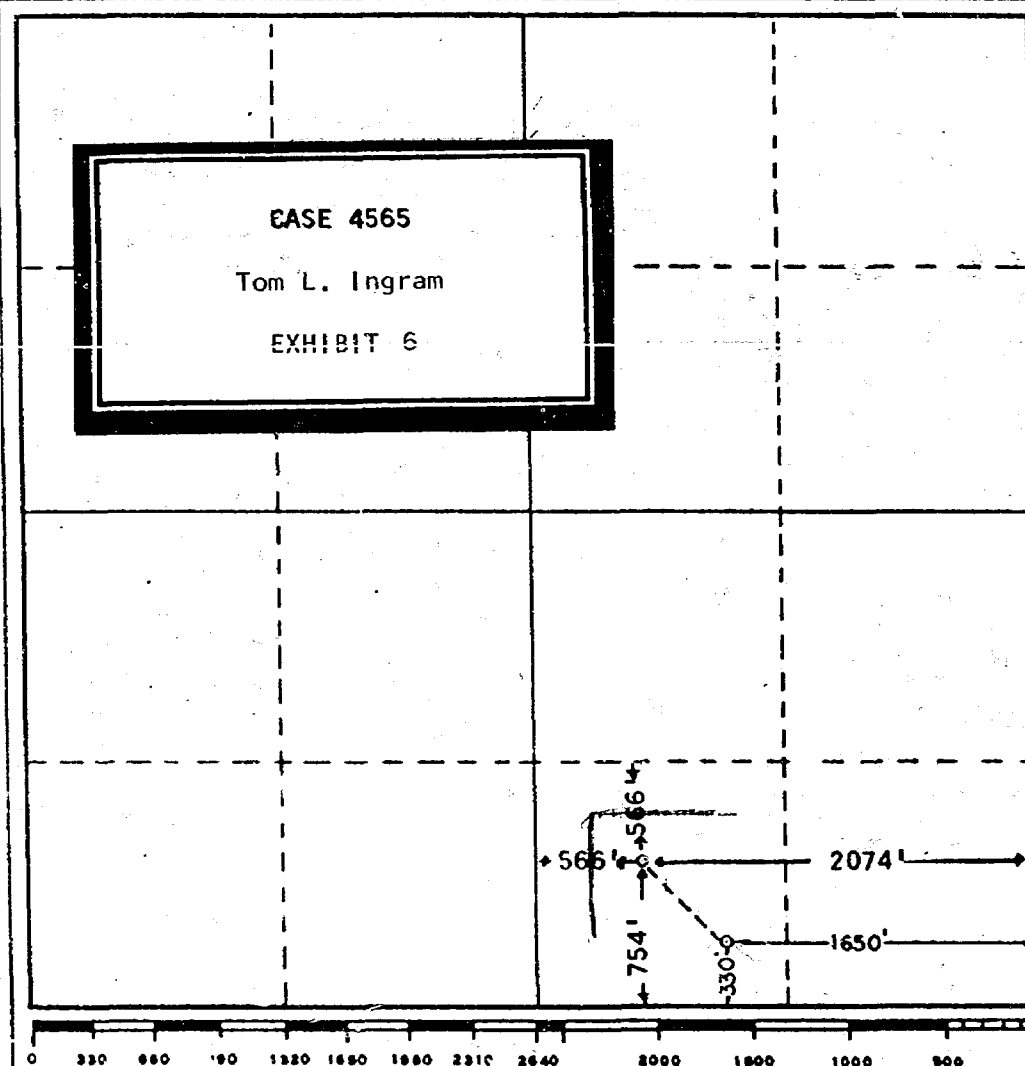
Operator TOM L. INGRAM			Lease STATE "M"		Well No. 1
Unit Letter O	Section 18	Township 17 SOUTH	Range 36 EAST	County LEA	
Actual Footage Location of Well: 330 feet from the SOUTH line and 1650 feet from the EAST line.					
Ground Level Elev. 3885.6	Producing Formation Abo Reef		Pool Vacuum-Abo Reef		Dedicated Acreage: Acres

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, forced-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
Tom L. Ingram

Position
Operator

Company
TOM L. INGRAM

Date
July 9, 1971

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 Surveyed
5-5-1971

Registered Professional Engineer and/or Land Surveyor

John W. West
Certificate No. **676**

RECEIVED JUL 9 1971

J. M. Huber Corporation
1900 Wilco Building
Midland, Texas 79701

OIL AND GAS
DIVISION

July 8, 1971

TELEPHONE
MUTUAL 2-3794

Tom L. Ingram
P. O. Box 1757
Roswell, New Mexico 88201

RE: Huber's 14-N-97-B

Dear Tom:

This letter is to advise that J. M. Huber Corporation does not have any objection to your application (Case 4565) presently pending for hearing.

Very truly yours,

J. M. HUBER CORPORATION

G. S. Cromwell
G. S. Cromwell
District Manager

GSC/mmt

cc: 14-N-97-B

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Ingram EXHIBIT NO. 7
CASE NO. 4565

CASE 4565

Tom L. Ingram

EXHIBIT 7

RECEIVED JUL 12 1971

Gulf Oil Company - U.S.

EXPLORATION AND PRODUCTION DEPARTMENT
MIDLAND DISTRICT

W. B. Hopkins
DISTRICT MANAGER
J. A. Hord
DISTRICT EXPLORATION
MANAGER
J. L. Pike
DISTRICT PRODUCTION
MANAGER
H. E. Braunig, Jr.
DISTRICT PRODUCTION
MANAGER
M. B. Moseley
DISTRICT SERVICES MANAGER

July 9, 1971

P. O. Drawer 1150
Midland, Texas 79701

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Ingram EXHIBIT NO. 8
CASE NO. 4565

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

Re: Vacuum-Abo Reef Pool
Directionally Drill (Case 4565)

Gentlemen:

This is to advise that Gulf Oil Corporation has been given due notice that Tom L. Ingram has made application to directionally drill his No. 1 State M well, having a surface location 330 feet from the South and 1650 feet from the East lines of Section 18, T-17-S, R-36-E, Vacuum-Albo Reef Pool, Lea County, New Mexico, to a bottom-hole location northwest of the surface location no nearer than 330 feet to the boundary of the dedicated production unit. He proposes to plug the well back to approximately 7200 feet and whipstock the well to a new bottom location. We have no objection to the granting of this application as filed.

Executed this 9th day of July, 1971.

Yours very truly,

GULF OIL CORPORATION

By: W. C. Palmer
W. C. PALMER
District Engineer



bcc: Tom L. Ingram
100 South Kentucky Avenue
Roswell, New Mexico 88201

C. D. Borland - Hobbs
Bill Kastler - Midland



A DIVISION OF GULF OIL CORPORATION

CASE 4565
Tom L. Ingram
EXHIBIT 8



SUN OIL COMPANY

MEADOW PARK BUILDING, POST OFFICE BOX 2880, DALLAS, TEXAS 75221



P. O. Box 1861
Midland, Texas 79701
July 9, 1971

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

Ingram EXHIBIT NO. 9

CASE NO. 4565

Mr. Rex Alcorn
Ingram Building
100 South Kentucky
Roswell, New Mexico 88201

Dear Mr. Alcorn;

Sun Oil Company does not object to operators setting a
Whipstock in the Tom L. Ingram No. 1 State M well, located
330' from the South line and 1650' from the East line of
Section 18, T17S, R36E, Lea County, New Mexico, for the pur-
pose of drilling a directional hole to bottom, approximately
600' Northwest of present total depth.

This waiver is given provided the hole is bottomed at least
330' from Sun Oil Company's lease lines.

Very truly yours,

SUN OIL COMPANY

G. M. Adair
G. M. Adair

GMA/nc

CASE 4565

Tom L. Ingram

EXHIBIT 9

CLARENCE E. HINKLE
W. E. BONDURANT, JR.
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
STUART D. SHANOR

C. D. MARTIN
PAUL J. KELLY, JR.
J. M. LITTLE

LAW OFFICES
HINKLE, BONDURANT, COX & EATON
600 HINKLE BUILDING
POST OFFICE BOX 10
ROSWELL, NEW MEXICO 88201

July 8, 1971

TELEPHONE (505) 822-8510

MIDLAND, TEXAS OFFICE
521 MIDLAND TOWER
(915) 683-4691

71 JUL 9 PM 1 01

SN

Case 4565

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

We enclose in triplicate application of Tom L. Ingram for approval of directional drilling in connection with the Tom L. Ingram State "M" No. 1 well in Section 18, Township 17 South, Range 36 East, Lea County.

This matter has been placed on the docket for hearing on July 14 as Case No. 4565.

Yours very truly,

HINKLE, BONDURANT, COX & EATON

By Clarence E. Hinkle
CH

CEH:cs
Enc.

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

11 JUL 59 PM 1 01

APPLICATION OF TOM L. INGRAM FOR APPROVAL
OF DIRECTIONAL DRILLING IN CONNECTION WITH
THE TOM L. INGRAM STATE "M" NO. 1 WELL
LOCATED 330 FEET FROM THE SOUTH LINE AND
1650 FEET FROM THE EAST LINE OF SECTION 18,
TOWNSHIP 17 SOUTH, RANGE 36 EAST, LEA COUNTY,
NEW MEXICO IN THE VACUUM-ABO REEF POOL, SAID
WELL TO BE PLUGGED BACK FROM A TOTAL DEPTH
OF 9,000 FEET TO 7,200 FEET AND DIRECTIONALLY
DRILLED IN A NORTHWESTERLY DIRECTION INTO THE
REEF, DRILLING TO BE IN SUCH A MANNER THAT THE
WELL WILL BE BOTTOMED NO NEARER THAN 330 FEET
TO THE PRORATION LINE.

Case 4565

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Comes Tom L. Ingram of Roswell, New Mexico and hereby makes application for approval of directional drilling in connection with the Tom L. Ingram State "M" No. 1 well located 330 feet from the south line and 1650 feet from the east line of Section 18, Township 17 South, Range 36 East, Lea County, New Mexico in the Vacuum-Abo Reef Pool, said well to be plugged back from a total depth of 9,000 feet to 7,200 feet and directionally drilled in a northwesterly direction into the reef, drilling to be in such a manner that the well will be bottomed no nearer than 330 feet to the proration line, and in support thereof respectfully shows:

1. That the Tom L. Ingram State "M" No. 1 well was completed at a total depth of approximately 9,000 feet, 330 feet from the south line and 1650 feet from the east line of Section 18, Township 17 South, Range 36 East, said well being located in the Vacuum-Abo Reef Pool. The well encountered the Reef formation but without sufficient porosity to make a producing well. Applicant desires to plug said well back to a depth of 7,200 feet and to directionally drill said well in a northwesterly direction back into the Reef formation with the possibility of encountering porosity and permeability which would result in the completion of a well capable of producing oil and gas in paying quantities. Said well would be bottomed no nearer than 330 feet to the proration line and upon completion a directional survey

of the entire well bore will be made and filed with the Commission. The District Office of the Commission will be notified of the approximate time the directional survey is to be conducted.

2. There is attached hereto, made a part hereof, and for purposes of identification marked Exhibit "A", a plat showing the location of the subject well and the location of all wells within a radius of 2 miles thereof as well as the ownership of the oil and gas leases within said area.

3. Applicant requests that this matter be set down for hearing on the regular hearing on July 14, 1971.

Respectfully submitted,


Tom L. Ingram

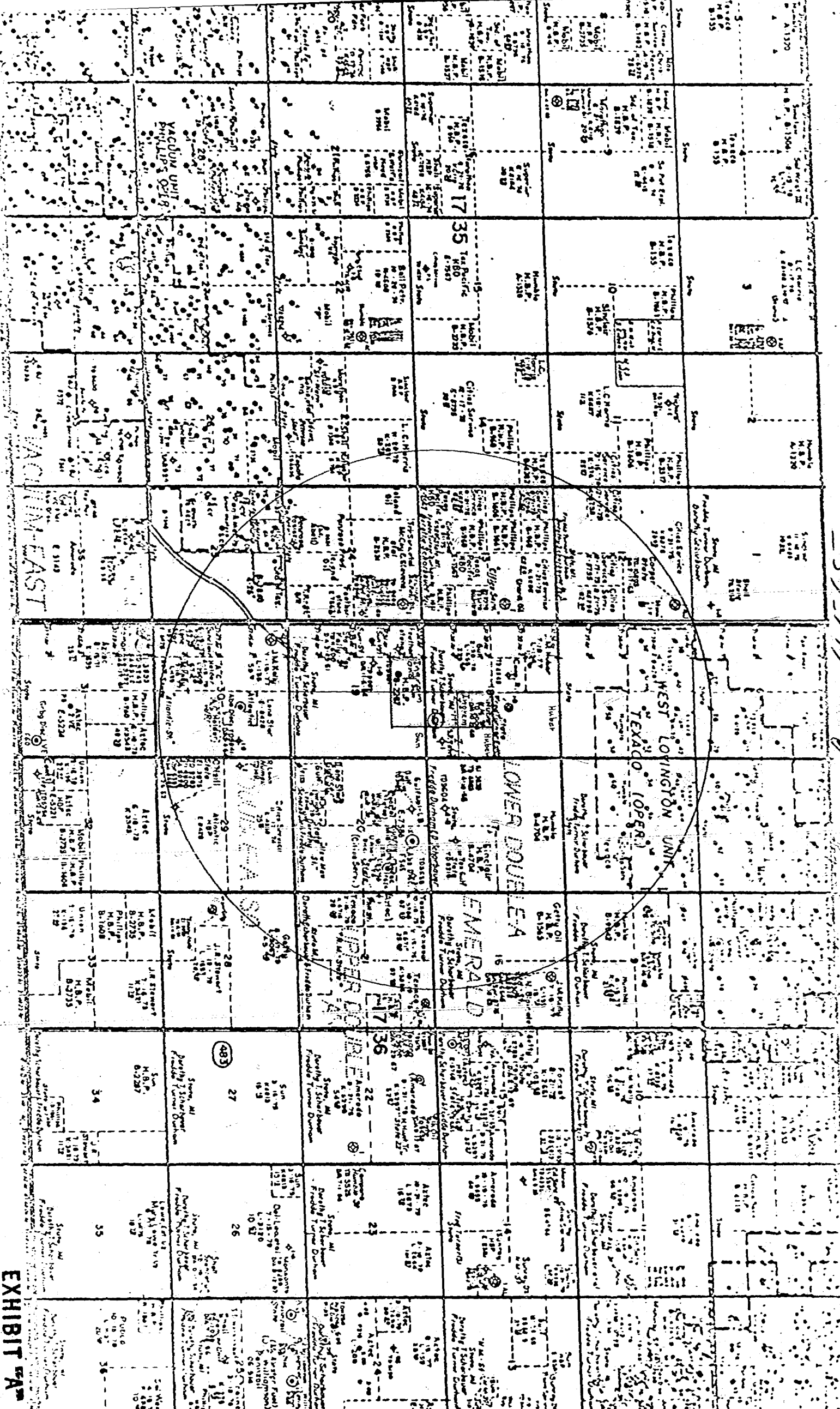


EXHIBIT "A"

Tom L. Ingram
for directional drilling

Space M Well No 1
surface location

330' E SL 1650' E EL

18 T 17 S R 36 E

Vacuum Cab Reef Pool
Rea Co.

plug back to 7200'

directionally, drill NWly

direction back into roof
following well no nearer
~~no near~~ than 330 feet to

~~lease line~~ boundary of
production unit
will run direction survey

DRAFT

GMH/dr

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:

APPLICATION OF TOM L. INGRAM
TO DIRECTIONALLY DRILL, LEA
COUNTY, NEW MEXICO.

CASE No. 4565

Order No. R-4169

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 14, 1971,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this day of July, 1971, 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, Tom L. Ingram, is the owner and
operator of ~~the~~ the Tom L. Ingram State M. Well No. 1, having a surface location
in Unit O,
330 feet from the South line and 1650 feet from the East line
of Section 18, Township 17 South, Range 36 East, NMPM, Vacuum-Abo
Reef Pool, Lea County, New Mexico.

(3) that the subject well was originally drilled
to a total depth of approximately 9000 feet into the
Abo Reef formation a non-permeable section
of the Abo Reef formation.

-2-

CASE NO. 4565

Order No. R-

(4) ~~157~~ That the applicant now seeks approval for the plugging of said well back to approximately 7200 feet, setting a whipstock at said depth and directionally drilling ~~in the Abo Reef formation~~ *in the Abo Reef formation* ~~to a true vertical depth~~ *the well to a bottom-hole location Northwest of the surface* ~~of approximately~~ *of approximately* ~~feet to bottom said well in the~~ *formation and no nearer than 330 feet to the boundary* ~~formation at a point no nearer than 330 feet~~ *of said Unit O.* ~~to the boundary of the dedicated proration unit.~~

(5) ~~157~~ That the applicant proposes to determine the present ~~exact kick-off point in~~ *exact kick-off point in* ~~bottom-hole location of the subject well by means of a continuous~~ *multi-shot directional survey conducted prior to said directional* ~~drilling.~~

(6) ~~157~~ That approval of the subject application will prevent the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tom L. Ingram, is hereby authorized ~~to plug back his State M Well No. 1, located~~ *in Unit O,* ~~330 feet from the~~ *to plug back his State M Well No. 1, located* ~~South line and 1650 feet from the East line of Section 18, Town-~~ *South line and 1650 feet from the East line of Section 18, Town-* ~~ship 17 South, Range 36 East, NMPM, Vacuum-Abo Reef Pool, Lea~~ *ship 17 South, Range 36 East, NMPM, Vacuum-Abo Reef Pool, Lea* ~~County, New Mexico, to approximately 7200 feet, set a whipstock~~ *County, New Mexico, to approximately 7200 feet, set a whipstock* ~~at said depth and to directionally drill~~ *in the well to a* ~~bottom-hole location in the Abo Reef formation Northwest~~ *bottom-hole location in the Abo Reef formation Northwest* ~~direction to bottom said well in the~~ *direction to bottom said well in the* ~~formation~~ *formation* ~~of the surface location and no nearer than 330 feet to~~ *of the surface location and no nearer than 330 feet to* ~~the boundary of said Unit O.~~ *the boundary of said Unit O.* ~~point no nearer than 330 feet to the boundary of the dedicated~~ *point no nearer than 330 feet to the boundary of the dedicated* ~~proration unit.~~

-3-

CASE NO. 4565

Order No. R-

PROVIDED HOWEVER, that prior to commencing the aforesaid operations, a continuous multi-shot directional survey shall be made of the well bore with shot points not more than 100 feet apart in order to determine ^{the exact location of the kick-off point;} ~~the present bottom-hole location,~~ that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Commission, Box 2088, Santa Fe, New Mexico; and that the operator shall notify the Commission's Hobbs District office of the date and time said survey is to be commenced.

(2) That subsequent to the above-described directional drilling, a continuous multi-shot directional survey shall be made of the well bore from total depth to the whipstock point with shot points not more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Commission, Box 2088, Santa Fe, New Mexico, and that the operator shall notify the Commission's Hobbs District Office of the date and time said survey is to be commenced.

(3) That Form C-105 shall be filed in accordance with Commission Rule 1108 and the operator shall indicate thereon true vertical depths in addition to measured depths.

~~(4) That Unit _____ of said Section 18 shall be dedicated to the subject well if the well bottoms in Unit _____.~~

~~(5) That Unit _____ of said Section 18 shall be dedicated to the subject well if the well bottoms in Unit _____.~~

(4) ~~MA~~ That jurisdiction of this cause is 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.