Case Number 4565

Application

Trascripts

Small Exhibits

ETC.

dearnley-meier reporting service, inc.

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

MR. NUTTER: Call Case Number 4565. MR. HATCH: Case 4565. Application of Tom L. Ingram to directionally drill, Lea County, New Mexico. MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox and Eaton, Roswell, representing Tom Ingram. I would like to 5 have Mr. Ingram sworn in. 6 (Witness sworn) 7 MR. HINKLE: We have nine exhibits. These have 8 already been marked. 9 TOM L. INGRAM 10 having been first duly sworn, testified upon his oath as 11 follows: 12 DIRECT EXAMINATION BY MR. HINKLE: 14 State your name and your address. 15 Tom L. Ingram, Roswell. 16 You are an independent oil man? 17 Yes. That's correct. 18 Are you a geologist? Q 19 A geological engineer. 20 Have you previously qualified as a geological engineer 21 before the Commission? 22 I have. 23 MR. HINKLE: Are the witness' qualifications 24 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	- 2	direction, certain exhibits for introduction into this
15	-	case?
16	A 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
22	v	have resulted in a number of dry holes, and those are

The offset owners, in addition to myself, are Hubert

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circled in red.

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

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

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

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

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

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

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

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

northeast quarter of Section 24, seventeen thirty-five.

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

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

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

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

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

Refer to Exhibit Number 3 and explain this.

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

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

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Number 1 State D.

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

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

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

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

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

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

- Do you have any further comment with respect to Exhibit 3?
- No. That's all.
- Refer to Exhibit Number 4.
- Exhibit Number 4 shows a comparison between the Sun Number 1 State D and the Tom L. Ingram Number 1 State M.

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

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

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

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

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

- Refer to Exhibit Number 5 and explain what that shows.
- Exhibit Number 5 is a schematic diagram showing the projected curvature of the proposed hole.

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

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two and a half degrees for one hundred feet.

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

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

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

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

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

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

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

- Q Would you refer to Exhibit Number 6?
 - Exhibit Number 6 is a surveyor's plat showing the original

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

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

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

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

- Have you contacted the offset owners with respect to their objections or approval of drilling this well?
- A I have.
- 19 Q Now, refer to Exhibits 7, 8 and 9, and explain these.
 - Exhibit 7 is a letter from the J. M. Hubert Corporation, addressed to me, in which they state that they have no objection to this operation.

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

		PAGE 10
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	y .	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 sm
12	·	target, that the risk is extremely great.
13	ಡೆ	There are eleven dry holes, one marginal producer
ا ا	- 2.7	and two good producers, and this indicates somewhat the

difficulty in finding production.

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

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

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

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

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We would like to offer in evidence

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MR. HINKLE:
   Exhibits 1 through 9.
              MR. NUTTER:
                           Applicant's Exhibits 1 through 9 will be
   admitted in evidence.
              MR. HINKLE:
                           That's all.
                           Does anyone have any questions of Mr.
              MR. NUTTER:
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    Ingram?
                        CROSS EXAMINATION
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    BY MR. NUTTER:
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        Mr. Ingram, it appears, then, that what you have got here
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         is just a very narrow structure, just making its way right
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         between the whole bunch of dry holes, and it is a
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         difficult target to hit.
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         Right. Extremely so.
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         And the first attempt with the wells missed it?
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         Yes.
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         So it is your proposal now to deviate the well northwesterly?
    Q
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    A
         Yes.
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         But you don't want a specific target area?
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         This 566 from the lessee, Exhibit Number 6 shows the
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         bottom of the hole being 566 feet from the north line
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         and 566 feet from the west line of that forty acre tract.
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         It is not a target, no.
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         That is just a general location for the bottom?
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         Yes.
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1	Ω	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	Ω	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?

A	Not in this part of the country. In other words, on most
	of your whipstocks, they are uncontrolled, but I understa
,	from off-shore operations, and where you have to drill
	around certain areas that you do this.
Q	But if you are trying to achieve a target, you do set
·	your whipstock and take your surveys while you are
	drilling?
² A	Yes. That's correct.
Q	Now, you mentioned that the well, to date, had cost
	\$100,000.
A	That's correct.
Q	And it will take an additional \$50,000 to set this
	whipstock and
A.	Yes.
Q	redrill to the bottom?
A	And to reach the total depth that we have and see whether
	or not it is productive.
Q	Now, you mentioned that you have one good well and one
	marginal well in the pool at the present time.
A	There are two good wells and one marginal.
iQ	Your well was completed in March of 1971, correct?
A	That's correct.
Q	And it had a potential of how much it was over 300?
A	310 barrels.
I	And then which is the other good well, Mr. Ingram?
	Q A Q A Q A Q

1	1 A The Featherstone Number 1 Sun	State, which is in the
2	northwest quarter of the nort	thwest quarter of 19.
3	3 Q And it was completed in April	of '64?
4	4 A Yes.	
5	5 Q And what does it produce at t	the present time?
6	6 A It is a top allowable well.	
7	γ Q And then the marginal well mu	ist be the well to the
8	southwest of this, then?	
9	9 A Yes. That's correct. It is	also a Featherstone well.
10	10 Q When was it completed?	
11	11 A In January of '64, and it pro	oduces around twenty-five,
12	thirty barrels, somewhere in	that vicinity.
13	Q All right.	
14	MR. NUTTER: Are there a	any further questions of Mr.
15	Ingram? He may be excused. Do yo	ou have anything further, Mr.
16	Hinkle?	
17	MR HINKLE: Mr Examine	er, 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 connecti
20	with the directional drilling and	rules.
21	THE WITNESS: I would 1	ike to request that if the
-	Commission sees fit, that Rule 11	B be amended in some way, whi
22	would permit the operator to rece	ive administrative approval
23	or some faster means so that you	do not have to move the rig

from the hole and then move it back in, where the bottom of the

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PAGE 15 hole is to be no closer than 330 feet to any proration boundary. Actually, our targets are getting smaller all the time, and the drilling costs are up, and actually, this would necessitate, or I mean facilitate our finding oil that otherwise would not be found, I believe. MR. NUTTER: Thank you, Mr. Ingram. Does anyone else have anything they wish to offer in Case Number 4565? Take the case under advisement.

<u>I</u> <u>N</u> <u>D</u> <u>E</u> <u>X</u> WITNESS PAGE TOM L. INGRAM Direct Examination by Mr. Hinkle Cross Examination by Mr. Nutter EXHIBITS NUMBER OFFERED ADMITTED Exhibits 1 through 9 11 11 10 11 13 16 17 18 19 20 21 22 23 24

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
	New Mexico Oil Conservation Commission was reported by me; and
5	
6	that the same is a true and correct record of the said
7	proceedings, to the best of my knowledge, skill and ability.
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9	Linda Malone
40	Court Reporter
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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

Re:	Case No	4565
Mr. Clarence Hinkle Hinkle, Bondurant, Cox & Eaton	Order No	R-4169
Attorneys at Law	Applicant:	
		The second secon
Roswell, New Mexico 88201	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. Secretary-Director

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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. Mutter.

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,

PINDS:

- (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.

-2-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, MMPM, 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 north-west 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 Pe 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 From 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.

-3-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 COMSERVATION COMMISSION

BRUCE KING, Chairman

ALEX J, ARMIJO, Member

U.L. Lectur,

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

SEAL

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:

- 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.

- 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, MMPM SECTION 18: SW/4 NW/4

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

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

(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. SU1.75-60h0, Magnetic Multishot survey No. MS-60h1 run on July 20, 1971 from surface to a depth of 7281 feet; and Magnetic Multishot survey No. MS-60h8 run on August 5, 1971 from 7281 feet to 9037 feet. These surveys were performed on the State "MN" 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 Comservation Commission, Box 2088, Santa Fe, New Mexico; Franklin, Aston and Fair box 1090, Robbell, New Mexico; Yates Drilling Company, 207 Fourth Street, Artesia, New Mexico; J. M. Huber Corporation, 1900 Wilco Bldg., Midland, Texas; andGulf 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

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 MULITSHOT SURVEYS
SURVEY DEPTH: FROM Surface	_гт. тогт.
LEASE: State "M"	WELL NO1
FIELD: Vacuum Abo Reef	
COUNTY/PARISA/ Lea July 20, 1971 \ DATE OF SURVEY August 5, 1971	STATENEW Mexico SU1.75-6040 MS-604:
OFFICE: ODESSA, TEXAS	563-1106

COUNTY/PARAKYVOFECTOR						
/W/,Benji Lipsey						
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		in the emp	lov of the	Directional	Surveying	Department of
Sperry-Sun Well Surveying Compa	any, 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	<u>,</u>	day of		,	19
respectively conduct or supervise licated:						
rom a depth ofSurface	feet to	3400	_ feet by	Gyroscopit//	MABAAAA	Adolfd Survey
depth of3400	feet to	7281	_ feet by	KHIDKIOHIO!	Magnetic/C	Highted Survey
depth of7281	feet to	9037	_ feet by	Klysblokskc/I	Magnetic/L	Wignied Survey
depth of	_ feet to		feet_by	Gyroscopic/I	Magnetic/C	Driented Survey
vith records of inclination and di	irection of incli	ination being	g taken at	approximatel	y every	<u>95feet</u>
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This survey was conducted at the r	equest of	Ton Le	ingram		·	
tan ilada — Otota — Digi		e de la companya del companya de la companya del companya de la co		w v ¹ t	TRF-35 NY-	1
for their <u>State "M"</u> 330' FSL & 1650' FEL					Well No	
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Sec. 10 11/2 A30E	ou	irvey,		· · · · · · · · · · · · · · · · · · ·		County/Physip
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(////// certify that this is a true an centation of our findings as to the	d correct repor	t of such su	rvey and the well at	that it affords	a true an	d correct repre-
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NE .EXICO OIL CONSERVATION COMMISSIC WELL LOCATION AND ACREAGE DEDICATION PLAT

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

perator			inces must be fr	Lease				Well No.
	TOM L. INGR	RAM .		, -	STATE	"M"	-	1
nii Leller	Section	Township		Range	<u></u>	County		· · · · · · · · · · · · · · · · · · ·
0	18	Į	17 South	1 3	6 EAST		LE	A
clual Footage La	L					L		<u> </u>
330	feet from the	South	line and	165	() tee	t Imm the	EAST	line
round Level Elev		Formation		Pool				Dedicated Acreage:
3885.6	. I	o Reef		Va	cuum-Abo	Reef		Acc
	he acreage dec		s subject we				nacks on the	
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dated by	communitizatio	n, unitization	, force-pooli	ng. etc?				
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Yes	☐ No	If answer is "	yes, type o	I consolidi /	ation	 		
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TOM L INGRAM
NEW MEXICO STATE WELL NO 1
VACUUM ABO REEF FIELD
LEA COUNTY NEW MEXICO
GYRUSCOPIC AND MAGNETIC MULTISHUT SURVEY

PAGE 1
DATE OF SURVEY
JULY 20,1971
VERTICAL SECTION COMPONED ALONG
11 DEG EASIMAGNETIC CORRECTION APPLIED
SU-1.75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY RECORD OF SURVEY

MEASURED	TRUE	INCLIN	ATION	DIR	ECTION	DOG-LEG SEVERITY	VERTICAL	REG	TANGULÂR	C@#K014	Ales
DEPTH	DEPTH	DEG	MIN	* *	DEG	DEG/100	SECTION	NORTH	ShulH	EAST	ent 3 L
• 0	•00	ØR1	GIN AT	SUR	FACE			.00		.90	est of the second
100.	99.99	O	45		71 E	. 75	-1.06		.43	1.24	
200.	199,98	0	45		70 E	.01	-2,13		,87	2.47	
300.	299.98	0	3u .	S	25 E	.53	-2.99		1.66	2.84	
400,	399.97	O	30	S	14 E	.10	-3,80		2,51	3.05	
500.	100	0	45		42 Ê	. 39	-5.10		5.48	3,92	
600.	599.96	0	30	S	85 E	.51	-5,66		3,56	4.79	**
700.	699.95	0 :	45		74 E .	.28	~6,67		5.92	6.05	
800.	799.95	0	30		77 E	.25	-7,32		4,12	5,90	
e e	•	**				•				*,	
900.	899.95	Q	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		44 E.	•55	-9,75		5.63	8.98	
1200,	1199.93	0	30	s	43 E	,01	-10,61		0,2/	9,58	
1300.	1299.93	Ð	15		56 E	,26	-11,02		6.51	9.94	المعارضين
1400.	1399,93	O	30		29. E	,30	-11.89		7,28	10.30	
1500.	1499.93	U	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	
%17.00 .	1699.91	0	30		41 E	.28	-14.93		9,84	11,99	4.4.5
1800.	1799,91	Q	30	s	27 E	.12	~15.79		10,62	12,39	· ·
1900.	1899.90	Ô	30	s	4 W	.27	-10.47		11.49	12.33	
2000.	1999,90	0	15		13 E	.27	-16.88		11,92	12.42	

TOM L INGRAM

NEW MEXICO STATE WELL NO 1

VACUUM ABO REEF FIELD

LEA COUNTY NEW MEXICO

GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

PAGE 2

DATE OF SURVEY JULY 20,19/1

VERTICAL SECTION COMPUTED ALONG CLOSURE

11 DEG EASTMAGNETIC CURRECTION APPLIED

SU-1,75-6040 03-6041

SPERRY-SUN WELL SURVEYING COMPANY RECORD OF SURVEY

	TRUE	INCLI	NATION	DIRE	CTION	DOG-LEG	VERTICAL	REC	TANGULAR	CNURDINAT	ES
MEASURED DEPTH	VERTICAL DEPTH	DEG	HIN	O	£ G	SEVERITY DEG/100	SECTION	NORTH	SUUTH	EAST	wES1
2100.	2099,90	0	15	\$ 2	4 E	.05	-17,31		12.31	12,60	
2200	2199,90	0 ~	0.		ρΈ	.25	-17.31		12.31	12.60	
2300	2299,90	ŏ	30	\$ 6		,50	-17,19		12,71	11.82	•
2400.	2399,89	O	30	S 7	1 W	, 07	-16,95	÷	12.99	11.00	
2500.	2499.89	0		8		•50	-16.95		12,99	11.00	
2600.	2599,89	υ	15	3 8		.25	-16,73	tt i san en en en. En j	13,03	10.56	
2700.	2699,89	0	.0	S	9 E	,25	-16,73		13,03	10.56	
2800.	2799,89	Ó	30		8 E	50	-16.09		12.17	10,69	
2900.	2899,87	1	0	4 5		.55	-15,27	4.5	10.61	11,48	
3000.	2999.85	1	15	N 4	5 E	.43	-14,88		9,07	13,02	
3100.	3099,83	·· 1	0	N 3		,31	-14.31		7,66	14.05	
3200.	3199.82	Ü	45	N 5		40	-14,35		6,95	15,14	
3300.	3299.82	U	30	N 5	6 E	.25	-14.36		6,46	∫5,87	
3400.	3399.82	0	30	N 1	0 W	.54	-13,57		5,60	15.72	
3491,	3490,81	0 .	30	. N	9 W	.01	-12,86		4,81	15,59	ing.
3585.	3584.80	0	45	N 1	2 W	,27	-11.72	200	3.61	15,34	•
3679.	3678.80	Ò	30	N	7 W	.27	-11.00		2.80	15,24	
3773.	3772.80	Ü	30	N 1) W-	.03	-19,25		1.99	15.09	
3867.	3866.79	0.	30	N	б ж	. 04	-9,53	V.	1.17	15,01	
3961.	3960,78	Q.	45	N 2	5 W	.34	-8,32		.06	14,49	r galter
4055.	4054.78	0	45	N 2		.03	-7.10	1.04		13,93	**

TOM L INGRAM

NEW MEXICO STATE WELL NO 1

VACUUM ABO 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 EASTNAGNETIC CORRECTION APPLIED

SU=1.75=6040 MS=6041

SPERRY-SUN WELL SURVEYING COMPANY RECORD OF SURVEY

								-					. 1
	EASURED	TRUE VERTICAL	INCLIN	ATION	DII	RECT	I NN.	DUG-LEG SEVERITY	VERTICAL	RE	CTANGULAR	CÓURDINA	TES
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	4149.	4148,76	1	0	N	28	hi	.27	-5.47	2,49		13,16	Anna Sella
	4243.	4242,75	Ô	45		40		. 33	-4.25	3.43	•	12.37	
	4337.	4336.73	1	15		47		.55	-2,24	4,83		10.87	
	4431.	4450.70	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	n in province Serve in
	4713.	4712,63	1	15	N	58	W	.05	5,57	9,88		4,46	j.
•	4807.	4806.62	1	0	VI	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	My a		.66
	5089,	5088.55	1	15		69		.14	12.32	13.22			2.58
	5183		1	· 15	N	48	W	.48	14,32	14.59		grade System Grade	4.10
	5277.	5276.49		30	, N	.46	iv	.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	M	.06	21.64	20,07			9,04
	5559.	5558.39	1	30	N	42	Н	.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	M	49	₩ -	,11	28,80	24,99	· ·		14.50
	5841.	5840,29	1	30	. N	44	VI	.14	31,23	26,76		. * .	16,21
	5935.	5934,25	1	45	N	53	₩	. 38	33,96	28.49			18.51
	6029,	6028,21	1	30	N	43	W	,40	36,39	30.29	No.	1	20,18

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

PAGE A

DATE OF SURVEY JULY 20,1971

VERTICAL SECTION COMPUTED ALONG CLOSURE

11 DEG EASTMAGNETIC CORRECTION APPLIED

SU-1,75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY RECORD OF SURVEY

	TRUP	INCLI	NUTTAL	οI	RECTION	DUG-LEG		- RE(CTÁNGULÁR	~Cānkb1a	ATES
MEASURED DEPTH	VERTICAL DEPTH	DEG	MIN		DEG	SEVERITY DEG/100	VERTICAL SECTION	MURTH	SOUTH	EASI	wE81
6123,	6122.18	1	30	N	44 W	.03	38,82	32.06		e,	21.89
6217.	6216,13	. 1	45		51 W	34	41.58	33.87			24.12
6311.	6310,09	i	45		42 N	,29	44,43	36,00		•	725.04
6405.	6404.04	1	45	Ň	35 W	.23	47.30	38.35		the second of th	27.69
6499.	6498.00	ì	45		39 W	.13	50.16	40,58		Ş	29.50
6593.	6591.94	2 .	0		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	5	0.	N	31 W	.07	63.25	51.80	A	• .	36.30
6969.	6967,69	2	15	Ŋ	38 W	.38	65,93	54.70			38,57
7063.	7061.62	-33	15	N	31 W	,29	70,62	57.87	•		40,47
7157,	7155.54	5	15		33 ₩	.08	74,51	60.96			42,48
7251.	7249,47	5	15	Ŋ	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 HURIZUNTAL DISPLACEMENT = 79.04 FEET AT NORTH 34 DEG. 49 MIN. WEST (TRUE)

TOM L INGRAM
NEW MEXICO STATE WELL OF 1
VACUUM AND REEF FIELD,
LEA COUNTY NEW MEXICO
GYRUSCOPIC AND MAGNETIC MULTISHOT SURVEY

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

SPERRY-SUN WELL SURVEYING COMPANY RECORD OF SURVEY

MEASURED	1RUE VERTICAL	INCLI	июттан	DU	₹EU	ION	ONG-LEG SEVERITY	VERTIGAL	A R	ECTANGULAR	CONKUIN	ATES
DEPTH	DEPTH ,	DEG	W [W		DE	3 ,	DEG/100	SECTION	июкти	SwuTh	EAST	MEST
2006	3036 46	. نخس	44 45 . 9	pë pa aa	 C				e a lista			*
7281.	7279,45						175-6040		64.89			45.13
7305.	7303.39	(4)	O		34		8.63	60.77	66.28	•	÷ •-	46.07
7400.	7397,58	7	30	М	55	М	4.24	72,35	73.39			50.22
7494.	7490.15	-10	0	N	64	W	3.02	88,3)	80.55			70.89
7588.	7582.09	12	0	·N	68	W	2.28	107.57	37.87	•		89.02
7683.	7673.96	1.4	45	-	71		2.98	131.77	95.74			111.85
		29		. * . * * * * * * * * * * * * * * * * *			•	St.				
7778.	7764,69	17	15	M	76	×	3.00	159,94	102.56			139,22
7873.	7853.67	, 20 ·	30	N	82	Υį	3,98	193.02	107.19			1/2.17
7967,	7940.20	23,	~ 0	N	82	W	2,66	229.55	112,30			208.54
8061.	8024.68	24	e j	i *.•	84	iel	3,31	270,35	116.61		1	249.52
		26	. 0							٠.		
8156	8109.14	2h '	15		84.		1 - 32	313,42	121-15			292.78
8250.	8193,26	20	30	-	84	W.	, 80	354,95	125.54	0		334.49
8344.	8277,20	26 [′]	45	· N	84	W	.27	396.84	129,96			3/6.57
8439	8364,48	23	15	N	85	vi	3.71	433.88	133,23			413.93
8533.	8451.94	21	30	e	83	W	2.03	468.07	137,43	ě	·	448.12
8628.	8540,62	. 21	0	٠.	: 91.7	w c	.65	501.78	140.98	€.		481,98
f		21			85							
8723.	8629.16	21	15				•46	535.79	143.99			510.28
8818,	8717.55	21	30	N	84	γ.	.47	570,26	147.63			550.91
8913.	8805,78	21	45	SI,	83	W	.47	605.20	151,92			585.85
9007.	8892,94	22	0		83		.27		156,21	•		620,80
9037,	8920.85	21	30		81		2,98	651,10	157.93			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 CIRUL)

	DM L. INGRAM EW MEXICO STATE WELL NO. I ACUUM ABO REEF FIELD EA COUNTY, NEW MEXICO PROSCOPIC DIRECTIONAL SURVEY NO. 1.75-6040 AGNETIC MULTISHOT DIRECTIONAL SURVEY NO. 6041 & 6048
And the first terms of the contract of the con	UGUST 5 , 1971 CALE 1" : 50
VIAL DISE	OGI!
TAL DISPLACEMENT & 65,10 FEET AT	NORTH 750 57 WES
YING COMPANY	6029' © 5089' W — 6055 E 0
TION	ORIGIN AT SURFACE
300 2	200 150 160 50

MD= 9037' TVD= 8920.85' @____9007' SPERRY-SUN WELL SURY HORIZONTAL PROJ

SPERRY-SUN WELL SURVEYING COMPANY

CHARLES E. HAWK

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

Jary N. 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: Gyro.	scopic & Magnetic ctional Survey
	FT. TO 7281 FT.
LEASE: State N	WELL NO
FIELD: Vacuum Abo	
COUNTY/PORTE Les	STATE New Mexico
DATE OF SURVEY7-20-71	SU1.75-6040 JOB NO. 15-6041
OFFICE: Cdessa, Texas	

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

DATE OF SORVEY

DATE OF SORVEY

VERTICAL SECTION COMPUTED ALONG

11 DEG EASTMAGNETIC CORRECTION APPLIED

SU-1.75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY RECORD OF SURVEY

	C TRUE	INCLI	NATION	DIRECTION	DOG-LEG	<i>6</i>	Ric	C ANGULAR	COURDINA	TES
MEASURED DEPTH	VERTICAL DEPTH	υEG	MIN	DEG	SEVERITY DEG/100	VERTICAL SECTION	NORTH	SMUTH	EAST	WEST
, 0	.00	ØR	IGIN AT	SURFACE			, 60		.00	
100.	99,99	0	45	S 71 E	.75	-1,06		, 43	1.24	
200.	199,98	0	45	\$ 70 E	,01	-2,13		,87	2.47	•
300.	299.98	0	30	8 25 E	•53	-2,99		1.06	2.84	
400.	399,97	0 0.5	30	S 14 E	.10	-3,80		2,51	3,05	
500.	499,97	Ú	45	S 42 E	,39	-5.10		3.48	3.92	
600,	599,96	0	30	\$ 85 E	•51	-5.66		3,56	4.79	
700.	699.95	0	45	S 74 E	.28	-6.67		S 5.92	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		500	8.37	
1100,	1099.94	0	30	S 44 E	•52	-9.75		5.63	8,98	1 × 1
1200.	1199.93	· · · · · · · · · · · · · · · · · · ·	30	S 43 E A	.01	-10.61		6.27	9,58	
1300.	1299.83	Antanio (Ge	15	S 56 E	.26	-11,02		0.51	9.94	
1400.	1399,93	0	30	5 29 E	,30	-11.89		7,28	10.36	
1500.	1499,93	Û	30	S 29 E	•00	-12.76		8,04	10.78	
1600.	1599,92	0	45	\$ 29 E	,25	-14,06		9.18	11.42	
1700.	1699,91	0	30	8 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 E INGRAM

NEW MEXICO STATE WELL NO 1

VACUUM ABO REEF FIELD

LEA COUNTY NEW MEXICO

GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

DATE DE SURVEY JULY 20,1971
VERTICAL SECTION COMPOTED ALONG CLUSURE
11 DEG EASTMAGNETIC CORRECTION APPLIED
SU-1,75-6040 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY RECORD OF SURVEY

MEASURED	TRUE VERTICAL	INCLI	NOTTAL	DIRECTION	DOG-LEG SEVERITY	VERTICAL	REC	CTANGULAR	CNORDINA	TES
DEPTH	DEPTH	DEG	ији	930	DEG/100	SECTION	NORTH	SØUTH	ÉÁST	WEST
2100.	2099,90	0	15	S 24 E	.05	-17.31		12,31	12,60	•.
2200,	2199.90	O ·	0	SOE	. 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	12,00	
2500.	2499,89	0		SOL	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 O E	.25	-16.73		13,03	10,56	e a ser qual established
2800.	2799.89		30	N 8 E &		-16.09	•	12.17	10,50	
2900.	2899.87	0	0	N 27 E	•55	-15,27		10,01	11,48	
3000.	2999,85		15	N 45 E	.43	-14,88		9.57	13.02	
3100	3099,83	1	0	N 36 E	.31	-14.31		7.66	14,05	
3200.	3199,82	ů	45	N 57 E	.4u	-14,35		6,95°	15,14	
3300.	3299,82	Ü	30	6) E6 E	O.E.	1.4.25		6 AC .		
3400.	3399.82	0	30	N 56 E N 10 W	.25	-14,36 -13,57		· ·	3 15.87 T	
3491.	3490,81	0	30	N 9 W	,54 ,01	-12.86		5,60 4,81	15,72 15,59	
		i	1 4 T		7				• - •	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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	Û	30	N 10 W	.03	-10.25		1.99	15.09	
3867.	3866.79	O	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	() -	45	N 27 W	.03	-7.10	1.04	*	13.95	

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

PAGE 3

UATE DE SURVEY JULY 20,1971

VERTICAL SECTION COMPUTED ALUNG CLUSURE

11 DEG EASTHAGNETIC CORRECTION APPLIED

SU-1.75-6046 MS-6041

SPERRY-SUN WELL SURVEYING COMPANY RECORD OF SURVEY

MEASURED	TRUÉ VERTICAL	INCLI	NATIUN ,	DI	REC.	TION	DØG-LEG SEVERITY	VERTICAL	REC) TANGULAR	COURDIN	ATES
DEPTH	DEPTH	DEG	MIN		DE	6	DEG/100	SECTION	MORTH	Seu1H	EASI	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	ħ	,47	W i-	± 55	-2.24	4.83		. 10.87	
4431.	4430,70	t	15	14	47	iN	.00	-,24	6,23		9.37	
4525.	4524.68	1 ,	15	N	46	W	,02	1.77	7.65		7.89	24
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	
4307,	4806.62	1	0	N	62	W	, 28	7,03	10.65		3.01	
4901.	4900,59	1	15	N	64	y:	.27	8,82	11.55		1.16	* *
4995.	4994.57	1	15	N	63	vi	•02	10.63	12.48		. · · · · · · · · · · · · · · · · · · ·	,66
5089.	5088.55	1	1.5		69		- 14	12.32	13.22			2,58
5183.	5182,52	1	15		48		.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		41		.14	19.18	18.16			7.49
5465,	5464,42	1	30		39		,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	iv.	.31	26.41	23,38			12.65
5747	5746.32	t	30		49		,11	28,80	24.99			14.50
5841.	5840,29	1	30	N	44	W	.14	31,23	20.76	• 54		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 ABO REEF FIELD
LEA COUNTY NEW MEXICO
GYROSCOPIC AND MAGNETIC MULTISHOT SURVEY

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

SPERRY-SUN WELL STRVEYING COMPANY RECORD OF SURVEY

MEASURED	TRUE VERTICAL	INCLI	NOTTAL	DI	REC.	Γ10N	DØG-LEG SEVERIT		VERTTCÂL	REC	TANGULAR	e Caorola s	ALES
DEPTH	DEPTH	DEG	MIN		DEC	•	0E6/100	Č.	SECTION.	MARTH	SOUTH	EAST	NEST
6123.	6122,18	1	30	. N.	44	W	.03		38,82	32.06	·		21.89
6217.	6216,13	1	. 45		51		.34		41.58	33.87			24.12
6311.	6310.09	1	45		42		.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	- 1	39		.13		50.16	40.58			29.50
6593,	6591.94	2, 2, 2, 2,	0		31		. 38	£	53.43	43,40			31.19
6687.	6685.88	2	0	N	34	W	. 11		56.71	40.11		r.	33.02
6781.	6779.82		Ô		29		. (9		59,98	48,98			34.61
6875	6873,77	5 \$	0		31		.07		63.25	51.80		•	30.30
6969.	6967.69	~ 2	15	N	38	W	.38		66,93	54.70	*		38.57
7063.	7061,62	2	15		31		.29		70.62	57.87			40,47
7157,	7155,54	5	15	and the second	33		,08		74,31	60.96			42,48
7251.	7249,47	2	15	И	34	W	,04		78,00	64.02	••		44,55
7281,	7279,45	5	0	N	34	hi	.83		79,04	64.89			45.13

THE CALCULATION PROCEDURES ARE BASED ON THE USE OF THE TANGFRITAL OR CHORO METHOD
HORIZONTAL DISPLACEMENT = 79.04 FEET AT NORTH 34 DEG. 49 MIN. WEST (TRUE)

	27	Samuel Samuel	25 Ashmung.	THE CASE	gog var var	Marie Everyones	رت ا
·	5 3 3	Hittard 06-3	Ashmun 6. Hilliard 7. 20-75	(BATE 15 30 (See 3 H) [Union] Oer Dist Or (See 3 H)	III A III W U S Smell	Pampling RB HSU, etc.	Fesiners!
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NE .EXICO OIL CONSERVATION COMMISSII WELL LOCATION AND ACREAGE DEDICATION PLAT

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

Operator Well No. TOM L. INGRAM STATE "M" Unit Letter Section Township 0 18 17 South 36 EAST LEA Actual Footage Los Well 330 SOUTH feet from the itr.e Ground Level Elev. Producing Formation Dédicatés Acresses 3885.6 Abo Reef Vacuum-Abo Reef 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 con-**EASE 4565** Tom L. Ingram Tom L. Ingram Position EXHIBIT 6 <u>Operator</u> Company TOM L. INGRAM July 9, 1971 Date Surveye 5-5-1971 2074 Registered Professional Engineer 1320 1650 2000 1000

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

District Manager

GSC/mmt

cc: 14-N-97-B

BEFORE EXAMINER NUTTER

OIL CONSERVATION CONTRACTOR

higran EXHIBIT NO. ____

CASE 4565

Tom L. Ingram

EXHIBIT 7

Gulf Oil Company-U.S.

EXPLORATION AND PRODUCTION DEPARTMENT MIDLAND DISTRICT

W. B. Hopkins

J. A. Hord
DISTRICT EXPLORATION
MANAGER

July 9, 1971

P. O. Drawer 1150 Midland, Texas 79701

J. E. PIKO DISTRICT PRODUCTION MANAGER

H. E. Braunig, Jr.
DISTRICT PRODUCTION
HANAGER
H. B. Moseley
DISTRICT SERVICES MANAGER

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-B, 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 proration 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

ب و

W. C. PALMER District Engineer

bcc:

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

C. D. Borland - Hobbs Bill Kastler - Midland

CASE 4565

Tom L. Ingram

EXHIBIT 8



A DIVISION OF GULF OIL CORPORATION

MEADOW PARK BUILDING, POST OFFICE BOX 2880, DALLAS, TEXAS 7522



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

BEFORE EXAMINER NUTTER

OIL CONSERVATION MANAGESION

haram EXHIBIT NO. _ 9

CASE NO. 4565

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

Dear Mr. Alcony;

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, T175, R36E, Lea County, New Mexico, for the purpose 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,

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

POST OFFICE BOX IO

ROSWELL, NEW MEXICO 68201

July 8, 1971

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

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Que 45-65

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. Kerkle

CEH: cs Enc. BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

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 1.650 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 45-65

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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 encoutered 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

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Tom &. Jugram for decessional drilling 5dace M Wree no 1 surface location 330 ESL 1650 FEC 18 T175 R361 Vacuum Celo Keef Pool plug back to 7200 derechounty arel WWhy Octoming well us nearer than 330 feet to boundary of the provation unt will him dereation during

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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:

CASE No. 4565

Order No R-

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 , 19 71, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter

NOW, on this _____day of __July ____, 19_71, 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.
- operator of the 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, NMPM, Vacuum-Abo

Reef Pool, Lea County, New Mexico.

(3) that the subject well was originally helded to total depth of approximately 9000 feel with the abortof formation a non-permeable section of the abor Reef formation.

-2-CASE NO. 4565 Order No. R-

of said well back to approximately 7200 feet, setting a whipstock at said depth and directionally drilling the true worked depth well to better hele leveling to the line of approximately feet to better hid well in the leveling approximately feet to better hid well in the leveling approximately feet to better hid well in the leveling approximately feet to better hid well in the leveling approximately feet to better hid well in the leveling approximately feet to better hid well in the leveling approximately feet to be to be the boundary of the dedicated provation unit.

That the applicant proposes to determine the present exact Kick-off point in bottom-hore location of the subject well by means of a continuous multi-shot directional survey conducted prior to said directional drilling.

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) Thatthe applicant, Tom L. Ingram, is hereby authorized in Vail O, to plug back his State M Well No. 1, located 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 in the formation direction to justice and well in the formation of the Section of Justice County and well in the formation of the Section of Se

-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 the example of the line of 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.

- 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 Costion 18 shall be dedicated to the subject well if the well bettoms in Unit_____
- 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.