CASE 2518: Application of HUMBLE for the dual completion of its D. H. CROCKETT WELL NO. 1 in Unit C.

Case No.

2-518

Petition, Transcript,

Bill Exhibits, etc.

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

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

P. O. BOX 871
SANTA FE

April 4, 1962

Re: CASE NO. 2518
ORDER NO. R-2208
APPLICANT:
Humble Oil & Refining Co.

Mr. Howard Bratton
Hervey, Dow & Hinkle
~~Box~~ 10
Roswell, New Mexico

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

ir/

Carbon 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. 2518
Order No. R-2208

APPLICATION OF HUMBLE OIL & REFINING
COMPANY FOR A DUAL COMPLETION, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on March 28, 1962, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 4th day of April, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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, Humble Oil & Refining Company, is the owner and operator of the D. H. Crockett Well No. 1 located in Unit C of Section 21, Township 15 South, Range 36 East, NMPM, Lea County, New Mexico.

(3) That the applicant seeks permission to complete said D. H. Crockett Well No. 1 as a dual completion (conventional) in such a manner as to permit the production of oil from the Caudill-Devonian Pool through a string of 2 3/8-inch tubing and the production of oil from the Caudill Permo-Pennsylvanian Pool through a parallel string of 1 1/4-inch tubing, separation of zones to be by packer.

(4) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.

(5) That approval of the subject application will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Humble Oil & Refining Company, is hereby authorized to complete its D. H. Crockett Well No. 1 located in Unit C of Section 21, Township 15 South, Range 36 East, NMPM, Lea County, New Mexico, as a dual completion (conventional) in such a manner as to permit the production of oil from the Caudill-Devonian Pool through a string of 2 3/8-inch tubing and the production of oil from the Caudill Permo-Pennsylvanian Pool through a parallel string of 1 1/4-inch tubing, separation of zones to be by packer.

PROVIDED HOWEVER, That the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations.

PROVIDED FURTHER, That the operator shall conduct packer-leakage tests upon completion, annually thereafter during the Annual Gas-Oil Ratio Test Period for the Devonian zone and at such other times as the Secretary-Director of the Commission may prescribe.

(2) 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

EDWIN L. MECHEM, Chairman

E. S. WALKER, Member

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

esr/

No. 9-62

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 28, 1962

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

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, as alternate examiner:

Cases 2515 through 2519 will not be heard before 1:00 P.M.

CASE 2507: Application of Union Oil Company of California for an order creating a new oil pool, establishing special rules and regulations for said pool, and contracting the Anderson Ranch-Wolfcamp Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order creating a new oil pool to be designated the North Anderson Ranch-Wolfcamp Pool and comprising portions of Sections 28, 32 and 33, Township 15 South, Range 32 East, and Lots 1, 2, 7 and 8 of Section 2, Township 16 South, Range 32 East, Lea County, New Mexico. Applicant proposes the promulgation of special rules and regulations to govern said pool, including a provision for 80-acre proration units; it is further proposed that the Anderson Ranch-Wolfcamp Pool be contracted by the deletion of the SE/4 and S/2 SW/4 of Section 28, E/2 SE/4 of Section 32 and W/2 and NE/4 of Section 33, Township 15 South, Range 32 East, and Lots 1, 2, 7 and 8 of Section 2, Township 16 South, Range 32 East.

CASE 2508: Application of Westates Petroleum Company for assignment of special allowables to four wells, Lea County, New Mexico. Applicant, in the above-styled cause, pursuant to Order No. R-1776, seeks an order extending the period within which its Carlson-Federal "B" Wells Nos. 2, 3, 4 and 5, located in Section 25, Township 25 South, Range 37 East, Lea County, New Mexico, are assigned a special allowable not to exceed top unit allowable for the Justis Tubb-Drinkard Pool.

CASE 2509: Application of Amerada Petroleum Corporation for approval of the Langlie Mattix Woolworth Unit Agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Langlie Mattix Woolworth Unit Agreement embracing 2559.48 acres of Federal and fee lands within Sections 27, 28, 33 and 34, Township 24 South, Range 37 East, Lea County, New Mexico.

CASE 2510: Application of Texaco, Inc. for an exception to Rule 107 (e), Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 107 (e) authorizing the completion of its K. F. Quail-Federal Well No. 1, located 2086 feet from the South line and 556 feet from the West line of Section 1, Township 20 South, Range 34 East, Lea County, New Mexico, as a 2 7/8-inch tubingless completion below the depth of 5,000 feet.

CASE 2511: Application of Texaco, Inc. for an order pooling all mineral interests in the Basin-Dakota and Blanco-Mesaverde Pools in the W/2 of Section 12, Township 30 North, Range 12 West, San Juan County, New Mexico. Interested parties include Pan American Petroleum Corporation, Southwest Production Company and Tidewater Oil Company.

CASE 2512: Application of Skelly Oil Company for approval of the Gallegos-Gallup Sand Unit Agreement, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Gallegos-Gallup Sand Unit Agreement embracing 22,997.51 acres, more or less, of Federal, State, Indian and fee lands in portions of Townships 26 and 27 North, Ranges 11, 12 and 13 West, San Juan County, New Mexico.

CASE 2513: Application of Skelly Oil Company for a secondary recovery project, Gallegos-Gallup Oil Pool, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks permission to institute a secondary recovery project in the Gallegos-Gallup Oil Pool in an area underlying its proposed Gallegos-Gallup Sand Unit Area, comprising 22,997.51 acres, more or less, in portions of Townships 26 and 27 North, Ranges 11, 12 and 13 West, San Juan County, New Mexico, the injection of water initially to be through six wells located in Sections 1, 2, 11 and 12, Township 26 North, Range 12 West and the project to be governed by the provisions of Rule 701.

CASE 2514: Application of Skelly Oil Company for approval of the West Dollarhide Queen Sand Unit Agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Dollarhide Queen Sand Unit Agreement embracing 2562.52 acres, more or less, of Federal, State and fee lands in Sections 19, 29, 30, 31, 32 and 33, Township 24 South, Range 38 East, and Sections 4, 5, and 6, Township 25 South, Range 38 East, Lea County, New Mexico.

The following cases will not be heard before 1:00 P.M.

CASE 2515: Application of D. W. Falls, Inc. for the assignment of a special temporary deliverability for allowable purposes to its Federal Well No. 2-11, located 1190 feet from the South line and 2210 feet from the East line of Section 11, Township 28 North, Range 13 West, San Juan County, New Mexico, which well is completed in the Basin-Dakota Gas Pool. Applicant proposes that the deliverability to be assigned to said well be the average deliverability of all gas wells in the Basin-Dakota Gas Pool.

CASE 2516: Application of Pan American Petroleum Corporation for a pressure maintenance project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks permission to institute a pressure maintenance project on its Gallegos Canyon Unit Area, San Juan County, New Mexico, in the Cha Cha-Gallup Oil Pool, with the injection of water initially to be through two wells located in Section 25, Township 28 North, Range 13 West, and requests adoption of special rules to govern the operation of said project.

CASE 2517: Application of Pan American Petroleum Corporation for a unit agreement and a pressure maintenance project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Southeast Cha Cha Unit Agreement embracing Federal, State and fee lands in portions of Sections 7, 8, 9, 10, 15, 16, 17, 18, 20, 21, 22 and 27, Township 28 North, Range 13 West, and Sections 30, 31, 32 and 33, Township 29 North, Range 13 West, San Juan County, New Mexico. Applicant further seeks authority to institute a unit-wide pressure maintenance project by the injection of water into the Gallup formation through 10 wells located within said unit and requests adoption of special rules to govern the operation of said project.

CASE 2518: Application of Humble Oil & Refining Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its D. H. Crockett Well No. 1, located in Unit C of Section 21, Township 16 South, Range 36 East, Lea County, New Mexico, as a dual completion (conventional) in the Caudill Permo-Pennsylvanian and Caudill-Devonian Pools with the production of oil from

the Devonian zone to be through a string of 2 3/8-inch tubing and the production of oil from the Permo-Pennsylvanian zone to be through a parallel string of 1 1/4-inch tubing.

CASE 2519: Application of The Atlantic Refining Company for a unit agreement, a pressure maintenance project and the reclassification of two wells, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Horseshoe-Gallup Unit Agreement embracing 20,925.58 acres, more or less, of Federal, State, Indian and fee lands in Townships 30 and 31 North, Ranges 16 and 17 West, San Juan County, New Mexico. Applicant further seeks permission to institute a pressure maintenance project in the proposed Horseshoe-Gallup Unit Area with water to be injected into the Gallup formation through 112 wells located in said unit, and requests adoption of special rules to govern the operation of said project. Applicant further seeks the reclassification of two wells located in the proposed unit area from Verde-Gallup Oil Pool wells to Horseshoe-Gallup Oil Pool wells, the Verde-Gallup Oil Pool to be contracted by the deletion of the NE/4 NE/4 of Section 2, Township 30 North, Range 16 West, and the SW/4 SW/4 of Section 36, Township 31 North, Range 16 West, said acreage to be included in the Horseshoe-Gallup Oil Pool.

iqg/

MAIN OFFICE OCC

1962 MAR 9 PM 1 : 33

OIL CONSERVATION COMMISSION

BOX 2045

HOBBS, NEW MEXICO

DATE March 7, 1962

OIL CONSERVATION COMMISSION
BOX 871
SANTA FE, NEW MEXICO

Re: Proposed NSP _____

Proposed NSL _____

Proposed NFO _____

Proposed DC X

Gentlemen:

I have examined the application dated 3/5/62

for the Humble Oil & Rfg. Co. D. H. Crockett #1-C 21-15-36
Operator Lease and Well No. S-T-R

and my recommendations are as follows:

No reference Order --- ~~L.F.L.~~ We concur

Geologically O.K. (The Caudill Wolf. Pool is now the Permo-Penn)----J.W.R.

Yours very truly,

OIL CONSERVATION COMMISSION

FORM A-201

MAIN OFFICE HOBBS
1962 MAR 5 AM 6:27

HUMBLE OIL & REFINING COMPANY
HUMBLE DIVISION

Hobbs, New Mexico
March 2, 1962

Re: Application to Dual Complete
D. H. Crockett Well No. 1
in the ~~Caudill-Wolf~~camp and
Caudill-Devonian Pool,
Lea County, New Mexico

New Mexico Oil Conservation Commission
Box 871
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr., Secretary-Director

Dear Sir:

Attached herewith is Humble's application for dual completion of our D. H. Crockett No. 1 in the Caudill-Wolfcamp and Caudill-Devonian Pools. The well, located in Unit C, Section 21; T-15-S; R-26-E; Lea County, New Mexico is presently producing from the Devonian. By the attached diagrammatic sketch, we propose to pump the Devonian through 2-3/8-inch non-upset tubing and flow the Wolfcamp through 1-1/4-inch non-upset tubing.

Since these conditions do not meet requirements for administrative approval, we respectfully request that this application be placed on the earliest possible docket for hearing.

Yours very truly,

HUMBLE OIL & REFINING COMPANY

R. R. Alworth

R. R. Alworth

BKB/mcb

cc: N. M. O. C. C., Hobbs (2)
Mr. W. H. Dick, Houston, Texas
Mr. R. R. McCarty, Midland, Texas
File

Mailed 3/9/62

Cities 2.5-18

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

5-1-61

APPLICATION FOR MULTIPLE COMPLETION

MAIN OFFICE OCC

1962 MAR 8 AM 8:27

Operator: Humble Oil & Refining Company			County: Lea	Date: March 2, 1962
Address: Box 2347, Hobbs, New Mexico			Lease: D. H. Crockett	Well No.: 1
Location of Well	Unit: C	Section: 21	Township: 15-S	Range: 36-E

1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in the same zones within one mile of the subject well? YES_____ NO X
2. If answer is yes, identify one such instance: Order No. _____ ; Operator, Lease, and Well No.:

3. The following facts are submitted:	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	Wolfcamp		Devonian
b. Top and Bottom of Pay Section (Perforations)	10542-46) 10553-68) Proposed 10576-80)		13592-13648
c. Type of production (Oil or Gas)	Oil		Oil
d. Method of Production (Flowing or Artificial Lift)	Flow		Pump

4. The following are attached. (Please mark YES or NO)

X a. Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and /or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.

X b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.

X c. Waivers consenting to such multiple completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.*

_____ d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed, it shall be submitted as provided by Rule 112-A.)

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

Columbian Carbon Company	1266 Butternut St.,	Abilene, Texas
Shell Oil Company	Box 845,	Roswell, New Mexico
Cities Service Oil Company	Box 97,	Hobbs, New Mexico

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES X NO ____. If answer is yes, give date of such notification _____.

CERTIFICATE: I, the undersigned, state that I am the Agent of the Humble Oil and Refining Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

R. R. Alworth

Signature

* Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard proration unit in either or both of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

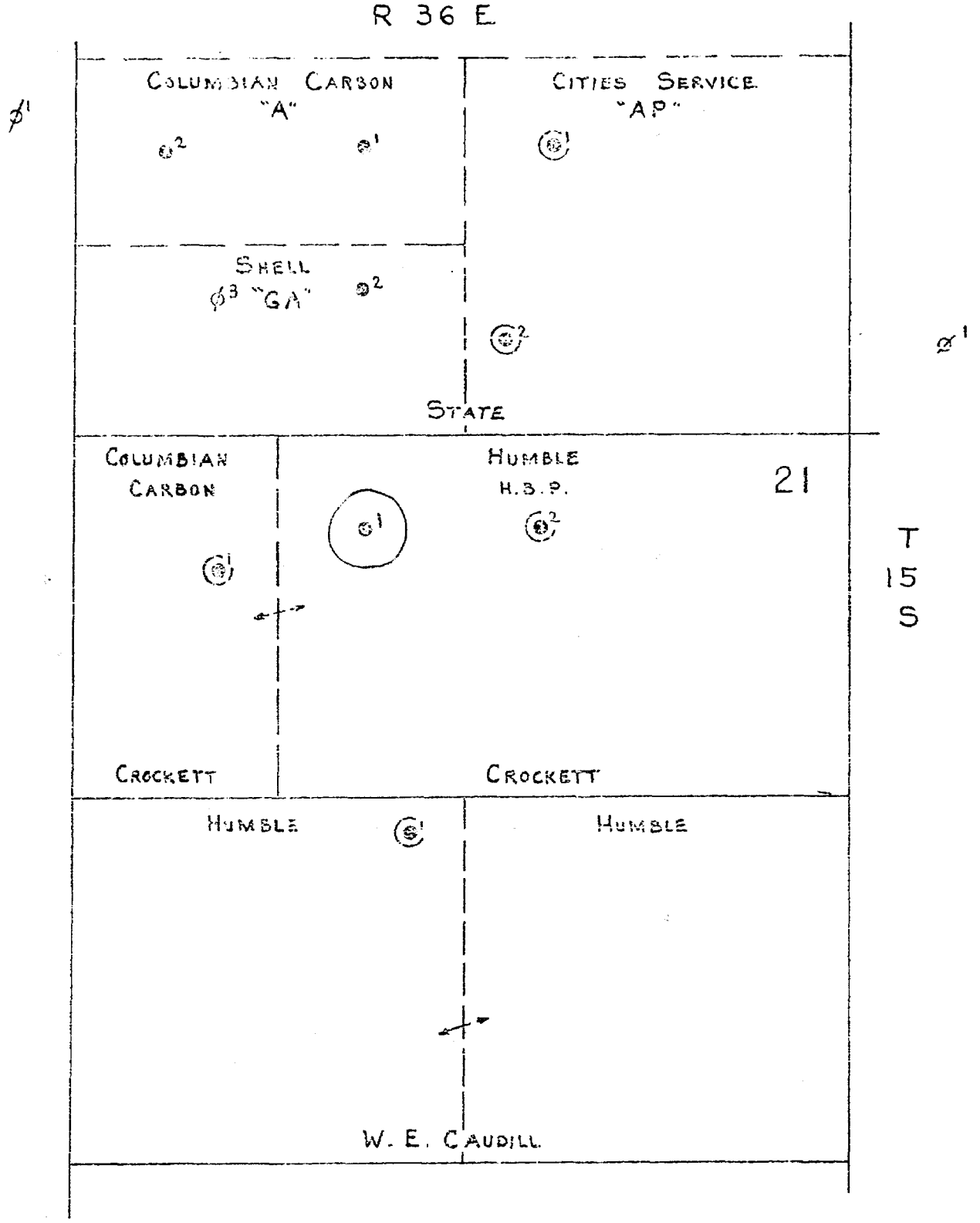
BKB/mcb

Case 2518

CAUDILL

DEVONIAN AND WOLFCAMP

LEA COUNTY, NEW MEXICO



LEGEND:

- ⊙ - WOLFCAMP
- ⊙ - DEVONIAN

Case 2578

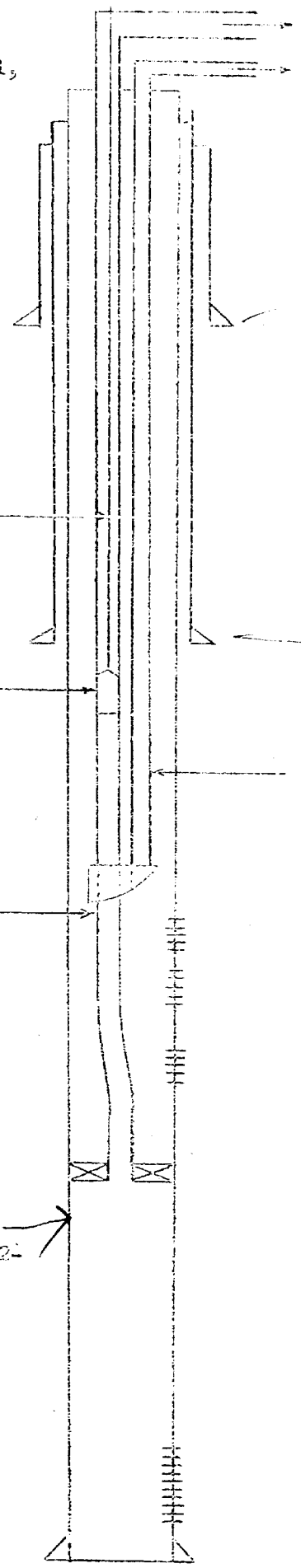
HUMBLE OIL & REFINING COMPANY

D. H. CROCKETT)

Schematic diagram of proposed dual Devonian-oil, Wolfcamp-oil completion.

Devonian: To be pumped through 2-3/8-inch non-upset tubing.

Wolfcamp: To be flowed through 1-1/4-inch non-upset tubing.



Devonian

Wolfcamp

13-3/8-inch at 303 Feet
Cemented to Surface

Sucker Rods

9-5/8-inch at 4746 Feet
Cemented to 720 Feet

Subsurface Pump

1-1/4-inch non-upset tubing

2-3/8-inch non-upset tubing

10542'

Proposed Wolfcamp Interval

10580'

Note: Both strings of tubing to be of special clearance to go through 5-1/2-inch, 23# casing

Non-retrievable Packer

13592'

Devonian

13648'

5-1/2-inch Casing at 13650'
Cemented to 3700'

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 29, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Humble Oil & Refining Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its D. H. Crockett Well No. 1, located in Unit C of Section 21, Township 15 South, Range 26 East, Lea County, New Mexico, as a dual completion (conventional) in the Caudill Permo-Pennsylvanian and Caudill-Devonian Pools with the production of oil from the Devonian zone to be through a string of 2 3/8-inch tubing and the production of oil from the Permo-Pennsylvanian zone to be through a parallel string of 1 1/4-inch tubing.

CASS 2518

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 2518.

MR. WHITFIELD: Application of Humble Oil & Refining Company for a dual completion, Lea County, New Mexico.

MR. BRATTON: Mr. Examiner, Howard Bratton of Roswell appearing on behalf of the applicant. I have two witnesses.

MR. UTZ: Any other appearances? You may proceed.

(Witnesses sworn.)

FORREST S. SPRY

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

DIRECT EXAMINATION

BY MR. BRATTON:

Q Mr. Spry, would you state your full name, address and occupation?

A I'm Forrest S. Spry, reside at 2606 North Acres in Hobbs. I'm the district geologist for Humble Oil & Refining Company in Hobbs.

Q Have you previously testified before the Oil Conservation Commission?

A I have not.

Q Would you state very briefly your professional and educational background?

A I graduated from Texas Christian University in February, 1951 and I worked for Humble in March, 1951, did subsurface exploration work for Humble in Midland, was transferred to Roswell for seven months and then to Hobbs where I did production geological work, was transferred back to Midland doing production geologic work, and then transferred to Hobbs, a total of eleven years.

Q Are you familiar with the Caudill Field in Lea County and the well in question in this application?

A Yes, sir.

MR. BRATTON: Are the witness's qualifications acceptable?

MR. UTZ: Yes, he's qualified.

(Whereupon, Applicant's Exhibit No. 1 was marked for identification.)

Q Refer to Exhibit No. 1, Mr. Spry, and explain what that reflects.

A Exhibit No. 1 is an area at the South end of the Caudill Field showing both Wolfcamp and Devonian wells. The Wolfcamp wells are encircled dots, the Devonian wells are only dots. The well in Section 21 with the red encirclement is the subject well.

Q Now that is shown to be a Devonian producer at this time?

A Yes, sir.

Q And there are Wolfcamp producers to the east and west?

A Yes, sir.

Q And that is the well that Humble proposes to dually complete in the Devonian and in the Wolfcamp?

A Yes, sir.

(Whereupon, Exhibit No. 2 was marked for identification.)

Q Refer then to your Exhibit No. 2, Mr. Spry. That's a structure map of the Wolfcamp?

A Yes, sir, this is a structure map of the south end of the Caudill Field contoured on top of the Townsend-Wolfcamp pay. This exhibit also shows north-south line, the brown line of cross section, this cross section will be shown on another exhibit. The east-west line in red is also a line of cross section.

Q Now, the wells on those two lines of cross section are not all completed in the same formations, are they?

A No, sir.

Q What does it reflect with relation to the Wolfcamp?

A This shows, this plat is showing the south dip on the south end of the field on top of the Wolfcamp and on top of the Townsend zone in the Wolfcamp.

Q Let's go to your cross sections then, Mr. Spry.

(Whereupon, Applicant's Exhibit No. 3 was marked for identification.)

Q Your first one is your north-south cross section, that's Exhibit No. 3?

A Yes, sir. On this cross section, coming down to the -- that is the fourth line on this cross section, the dashed line is the top of the Townsend zone, and in wells which the Townsend is completed in this is indicated on these particular wells on the

cross section. To the south below the break in the upper part of the cross section, below the upper part, is the Devonian cross section showing the south dip on top of the Devonian.

Q Now, this shows, as to Devonian, Mr. Spry, as to the No. 1 D. H. Crockett well, that's the one we're concerned with?

A Yes, sir.

Q That shows it's down at the south dip of the Devonian formation?

A Yes, sir. This is the south limit of production.

Q It's dipping to the north?

A Yes, sir. Dipping to the south.

Q Yes, excuse me, going up to the north?

A Yes, sir.

Q And the Crockett well is completed in the Devonian?

A Yes, sir.

Q It is not now completed in the Wolfcamp, is that correct?

A That's right, it is not.

Q Does this show the presence of the Wolfcamp in this well?

A Yes. This cross section shows correlation on top of the Townsend zone between all of these wells on the section. This correlation is apparent and the three wells on the right-hand side of the cross section, the southernmost wells were tested in the Townsend zone and, of course, two of these wells, the

farthest to the right, are dry holes.

(Whereupon, Applicant's Exhibit No. 4 was marked for identification.)

Q Refer to your Exhibit No. 4, Mr. Spry, that is your east-west cross section through the Columbian Carbon No. 1, the D. H. Crockett No. 1 and No. 2 wells, is that correct?

A Yes. The Columbian Carbon No. 1 Crockett is a Wolfcamp producer. The Humble No. 2 Crockett is a Wolfcamp producer. The No. 1 Crockett lying in between, as we have said, is producing only from the Devonian.

Q This cross section also indicates the presence of the Wolfcamp, the Townsend in this well?

A Yes, sir.

Q But it's continuous between these three wells?

A Yes.

Q Is there anything of significance about the Devonian cross section on this well?

A It shows the west and east dip on the Devonian and that our well, in relationship to these two wells, of course, is the high well of these two. It also points out that there should be production in the No. 1 Crockett since the two wells on the section offsetting to the west and east are productive in the Wolfcamp-Townsend zone.

Q So that if dual completion is permitted, from a geological standpoint, this well should produce from the Wolfcamp formation?

A That's right.

Q Were Exhibits 1 through 4 prepared by you or under your supervision?

A Yes, sir.

Q Is there anything else you care to comment on with relation to the testimony as to geological aspect of this?

A No, sir, I don't believe there is.

MR. BRATTON: We have no further questions of this witness at this time.

MR. UTZ: You want to wait and introduce all your exhibits at one time?

MR. BRATTON: Yes, I believe so.

MR. UTZ: Are there questions of the witness?

CROSS EXAMINATION

BY MR. UTZ:

Q This cross section on Exhibit No. 3, does it show the wells to be non-productive in the Townsend?

A No, sir, these wells shown on this cross section were not tried in the Townsend zone. There are wells immediately east of them on the City Service lease which are producing from

the Townsend zone.

Q These wells are productive, they just are not perforated?

A Yes, sir, they have not been tried.

MR. UTZ: Any other questions? The witness may be excused.

(Witness excused.)

B. K. BEVILL

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

DIRECT EXAMINATION

BY MR. BRATTON:

Q Mr. Bevill, will you state your full name and occupation?

A B. K. Bevill, Humble Oil & Refining Company, district production engineer, Hobbs, New Mexico.

Q Have you previously testified before this Commission?

A Yes, sir.

Q Are you familiar with the Caudill Field and the subject application, Mr. Bevill?

A Yes, sir.

Q Now, Mr. Bevill, refer back to what has been marked as Exhibit No. 1, if you would, please. First of all as to the Devonian Field, the Caudill-Devonian Field, what kind of a drive

is that?

A It has a good water drive.

Q What is the drive mechanism in the Wolfcamp?

A Dissolved gas.

Q What size casing do we have in the Crockett No. 1 well?

A It's 5½" twenty-three pound.

Q What are we proposing in this application, Mr. Bevill?

A We are proposing to dual Crockett No. 1 with dual strings of tubing in the conventional manner. One string to be 2 3/8-inch O.D. to produce the Devonian and one string of inch and a quarter to produce the Wolfcamp.

Q Now, the Devonian is pumping, is that correct?

A The Devonian is pumping at the present.

Q The Wolfcamp would flow through the inch and a quarter?

A That's correct.

Q Now, as to the reasons why we're making an application for this dual completion, Mr. Bevill, let's examine the alternatives that we have here. First of all, we could continue to produce the Devonian and after it is exhausted come back up and complete and produce the Wolfcamp, is that correct?

A That's correct, we could.

Q Why is that not desirable?

A Due to the nature of the Devonian reservoir being a strong water drive and our position on the structure, if we'd abandon the Devonian temporarily we would continue to be drained up structure.

Q In other words, if we abandon the Devonian and produce the Wolfcamp now, due to the fact that we're down dip on the Devonian, our Devonian oil would be gone before we could ever get back to it?

A That is correct.

Q Now, if we were to continue to produce the Devonian until it is exhausted and then complete in the Wolfcamp, what is the difficulty with that?

A We're suffering drainage too west of Cabot Carbon Company's Crockett No. 1.

Q That is completed in the Wolfcamp and now producing from the Wolfcamp?

A That is correct.

Q Now, third, we could drill a Wolfcamp well, what is the difficulty with that?

A The difficulty with that is it's uneconomical.

Q What terms, are we talking in terms of cost of drilling, completing and operating a separate Wolfcamp well here?

A Well, a Wolfcamp well in this pay is estimated to cost

$180,000.00, and that would be without troubles, and our reservoir people tell us that the most that we can expect from a new Wolfcamp completion here would be a maximum of approximately 100,000 barrels, which is an optimistic estimate.

Q Now, your $180,000.00, is that without surface equipment?

A That's to drill and complete only.

Q That's without surface equipment, that's without operating costs?

A That is correct.

Q That's without your salt water disposal costs?

A That's correct.

Q Or would you get into that?

A That's correct.

Q So that actually a Wolfcamp well would not be economic under most optimistic circumstances?

A According to our estimates, it wouldn't even pay out.

Q So we come to the proposal which we're making here today and that is a dual completion?

A That's correct.

Q In this connection, Mr. Bevill, we previously made an application to dually complete this well in another matter, did we not?

A That is correct.

Q And that was to continue to produce the Devonian through the present tubing or through larger tubing and to flow the Wolfcamp through the tubing casing annulus?

A That's correct.

Q And that suggestion was turned down by the Commission?

A Yes, sir.

Q So we're now suggesting two strings of tubing to pump the Devonian and flow the Wolfcamp through two sets of tubing?

A Yes, sir.

(Whereupon, Applicant's Exhibit No. 5 was marked for identification.)

Q Refer then to your Exhibit No. 5, Mr. Bevill. Explain what that is and what it shows.

A Exhibit No. 5 is just some general information that has a bearing to this particular case. The present status of D. H. Crockett No. 1 is producing from the Devonian through 2 7/8-inch O.D. tubing, actually it's 2 1/2-inch nominal. Its present rate is about 450 barrels of fluid per day, 90% water. It has a conventional 320 D pumping unit with the pump set at about 5,000 feet, it is pumping twelve 108-inch strokes per minute with a two-inch plunger.

The proposed dual completion, the Devonian-Wolfcamp, it is proposed to replace the 2 7/8-inch string, run 2 3/8 N-80

tubing with Hardy Griffin D. S. joint, using present surface equipment and a double displacement type subsurface pump which would have a capacity, using the present unit, of about 350 barrels per day.

The tubing is to be anchored in a non-retrievable packer set at 10,650 feet. The Wolfcamp string is an inch and a quarter N-80 tubing with Hardy Griffin D. S. joint landed in a dual string anchor at approximately 10,580 feet. The Wolfcamp saturation pressure is 3498 pounds. The Wolfcamp oil gravity is 42 degrees API. Subsurface pressure in the D. H. Crockett No. 2, which is an east offset to the subject well, its initial pressure was 3743 pounds, and the most recent pressure was 2882 pounds.

The gas-oil ratio history of Crockett No. 2, Wolfcamp, the initial was 1480 cubic feet per barrel and the present 1800 cubic feet per barrel.

Q In connection with this type of completion, Mr. Bevill, and particularly relating to this type of joint that you are proposing to use, is that something newly approved for use in your company?

A Yes, sir, that is a new joint, a high strength joint, with a minimum of outside diameter at the joint which makes it possible for this particular setup.

Q So, using this type of equipment now makes it possible

for you to go to these two strings of tubing in this size of casing?

A That is correct.

Q Is your inch and a quarter tubing in your Wolfcamp, is the capacity of that sufficient for your Wolfcamp production to flow your Wolfcamp production?

A Yes, sir, it would produce the top allowable limit without trouble.

(Whereupon, Applicant's Exhibit No. 6 was marked for identification.)

Q Let's go on over to the proposed schematic diagram, which is Exhibit No. 6, and explain it, Mr. Bevill.

A Exhibit No. 6 is a simple schematic diagram of how we propose to seat our down hole equipment. The string on the left-hand side is the 2 3/8-inch string which will be anchored in a non-retrievable packer at approximately 10,600 feet. We will have to pump this string using a double displacement type subsurface pump set at approximately 5,000 feet. The string on the right is the inch and a quarter non-upset tubing anchored in a dual string anchor through which we propose to produce the Wolfcamp.

Q Let's examine, Mr. Bevill, some of the possible problems or questions in connection with this type of equipment. Now, first of all as to the Wolfcamp, as I understand it, it is

adequate in size to produce the allowable, is that correct?

A Yes, sir.

Q Can you work in this size of tubing as far as workovers?

A Yes, sir, I've checked with the well servicing people at Hobbs and they have tools such as swabbing tools and paraffin tools to work inside this tubing.

Q How about the utilization of your reservoir energy, is there any question about efficient utilization of your reservoir energy in the Wolfcamp?

A We don't think so. Certainly the smaller tubing will have higher friction. However, this particular type of reservoir, which it's typical of the Townsend Field and the Kemnitz Field, has already shown indications of going in that direction as to high gas-oil ratios, we don't feel like that there will be any waste in energy.

Q You think you would have less slippage and therefore you'd have a full utilization of the reservoir energy?

A That's right.

Q Of course, you don't have the corrosion problem present that you had in your previous application because you are using tubing?

A Well, it's set up in a conventional manner. You can treat for corrosion or paraffin just as you do in any conventional

dual completion.

Q So the only remaining problem is the question of artificial lift of the Wolfcamp?

A That is correct.

Q And it is a flowing formation at the moment?

A We expect it to be. We have no doubt that it will be a flowing well.

Q In connection with that, would you anticipate that the Devonian production would be through before you might need to artificially lift the Wolfcamp?

A Yes, sir. Exhibit No. 7 pretty well brings that out.

(Whereupon, Applicant's Exhibit No. 7 was marked for identification.)

Q Let's go to Exhibit No. 7, then, with relation to that problem, Mr. Bevill.

A These are curves plotted on production with the function of time. You will note the curve on the left is Humble's D. H. Crockett No. 1 in the Devonian. The trend of that curve has been pretty well established and we have extrapolated down to the economic limit which is 13 barrels of oil per day.

We think at the outside the remaining Devonian life is two and a quarter years under present conditions. The two curves on the right refer to the Wolfcamp Humble's D. H. Crockett No. 2,

which at present has not started on decline. Therefore, it has no trend and the lower curve is Columbian Carbon's D. H. Crockett No. 1 which has started on the decline, and we've extrapolated those curves down to a bottom hole pressure of 550 pounds, or a daily rate of approximately 30 barrels per day. That is the pressure at which we expect artificial lift will probably have to take place.

Q First of all, where do you get that 550 pounds?

A Well, that's based on our experience in the Townsend and Kemnitz Pools. We have, practically all of our wells that are on artificial lift at Townsend did go on the pump at approximately 550 pounds bottom hole pressure. We have had several to go below that. We have had two wells at Townsend to deplete themselves flowing; actually after they stopped flowing we went to the expense of putting in artificial lift and we haven't gotten anything out of them.

Q So all indications are that the Devonian will be depleted before the Wolfcamp is down to a point where you need artificial lift?

A Yes, sir, that's what we are trying to explain in these particular curves.

Q And even if that were not the situation, if the Devonian should last six months beyond the time the Wolfcamp were to cease

flowing, all it would mean would be that you couldn't produce the Wolfcamp during the six months, then you would come in and put in new, plug off the Devonian and put in new tubing and pump the Wolfcamp?

A As a single zone completion, yes, sir.

Q So that from the standpoint of artificial lift there's no problem about the inch and a quarter tubing?

A We don't think so at this time.

Q I might ask you, Mr. Bevill, what contributes to that 13 barrels of oil per day economic limit on the Devonian?

A Well, admittedly that's high. However, you have to take into consideration there's a large amount of water lifted from this well and it actually costs more money to lift water than it does oil, then after we get it on top of the ground we have to pay to get rid of it. Our salt water disposal expense alone for the past two years has been in excess of $2,000.00.

Q Is that on this well alone?

A That's correct.

Q Is that installation of the equipment or just operating costs?

A That's just operating cost.

Q So, with these factors you have a higher barrel economic limit than you might in other circumstances?

A That is right. Actually this is based on 1960 and '61 cost experiences. Last year it was actually higher.

Q Mr. Bevill, from your analysis of this pool and this well, is the granting of this application necessary to protect Humble's correlative rights?

A As we see it, it's our only alternative at this particular time.

Q In your engineering estimate would the granting of this application result in waste?

A No, sir, over all we would certainly gain by being able to produce the two zones together at this time.

Q You mean over all in the protection of your correlative rights?

A That is correct.

Q There would be no waste of oil?

A No, sir. We would lose oil from the Devonian due to upstructure drainage due to not being able to lift as much fluid under the setup as we are now.

Q That oil would be recovered, it's not lost oil?

A It wouldn't be left in the reservoir, it would be recovered.

Q Do you have anything further to state in connection with this application, Mr. Bevill?

A No, sir.

Q Were Exhibits 5 through 7 prepared by you or under your supervision?

A Yes, sir.

MR. BRATTON: We would offer in evidence Humble's Exhibits 1 through 7 inclusive and we have nothing further at this time.

MR. UTZ: Without objection, Humble's Exhibits 1 through 7 will be entered into the record.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Bevill, was the 10,450 feet of inch and a quarter tubing amply long for that size tubing?

A Yes, it is.

Q You don't anticipate any problem?

A There will be problems, but I don't think there will be any that we can't cope with. This new joint is the only thing that makes it possible that we can go even this large as inch and a quarter with a two and three-eighths inch string to produce the Devonian through.

MR. UTZ: Are there other questions? The witness may be excused.

(Witness excused.)

MR. UTZ: Any statements in this case? The case will be taken under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 3rd day of April, 1962.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2568, heard by me on May 28, 1962.

....., Examiner
New Mexico Oil Conservation Commission

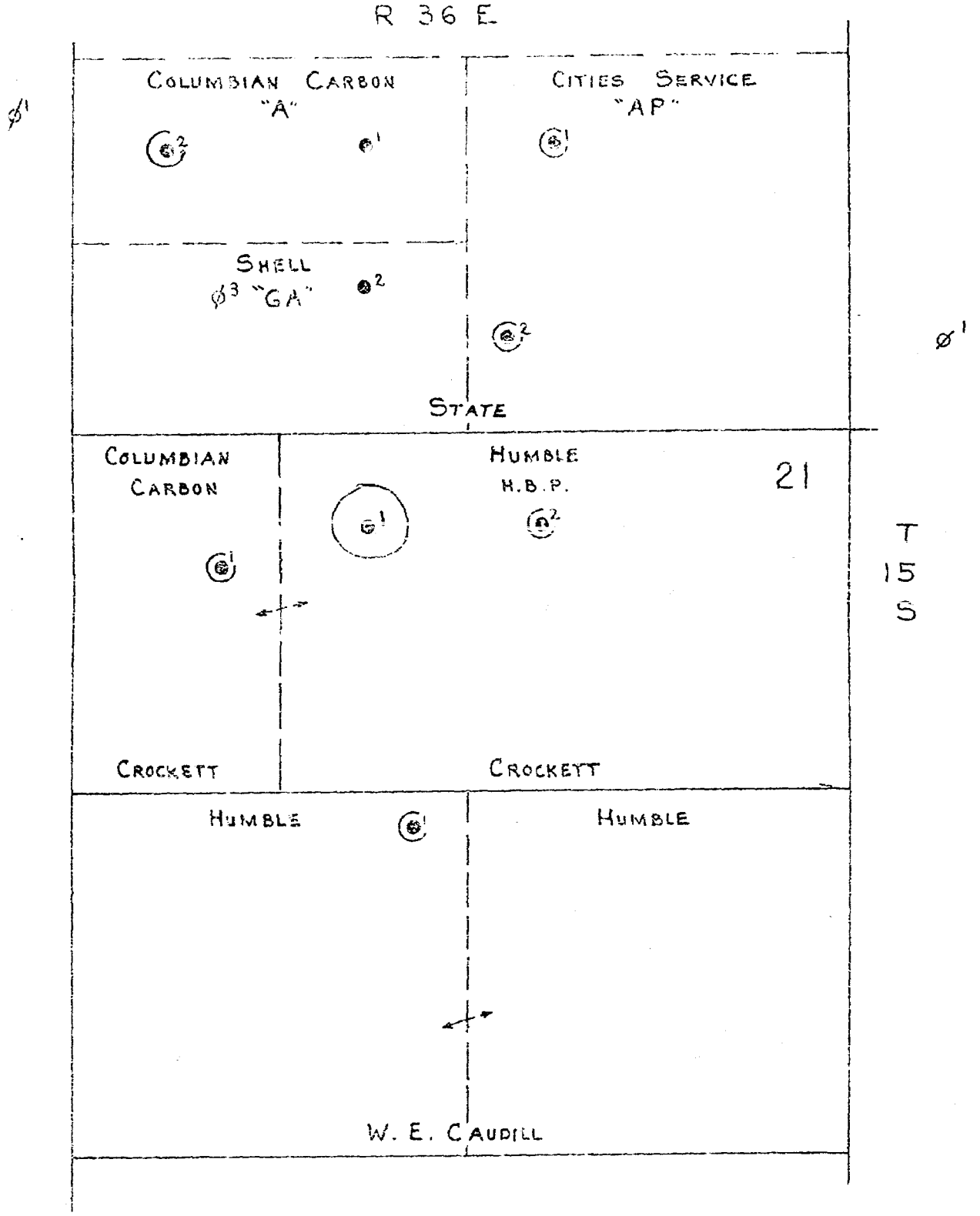
COMPLETION DATA
C. J. HOLDER JAVER WELL NO. 1

Location	910' FNL & 1850' FEL, Section 16, T-28-N, R-13-W, San Juan County, New Mexico
Elevation	6055' DF
Total Depth	7150'
Top Morrison	6467'
Surface Casing	13-3/8" CSA 206'
Oil String Casing	1191' of 9-5/8" and 5949' of 8-5/8" CSA 7,140'
Perforations	158' of perforations between 6573'-7122'
Stimulation	Sand-water frac with 93,500 gals. water and 55,000 lbs. 20-40 mesh sand.
Test Rates	Pump 1500 barrels water per day with pump set at 1000' and static fluid level at 500'. Estimated capacity of 10,000 barrels water per day with pump set at 4000'.

CAUDILL

DEVONIAN AND WOLFCAMP

LEA COUNTY, NEW MEXICO

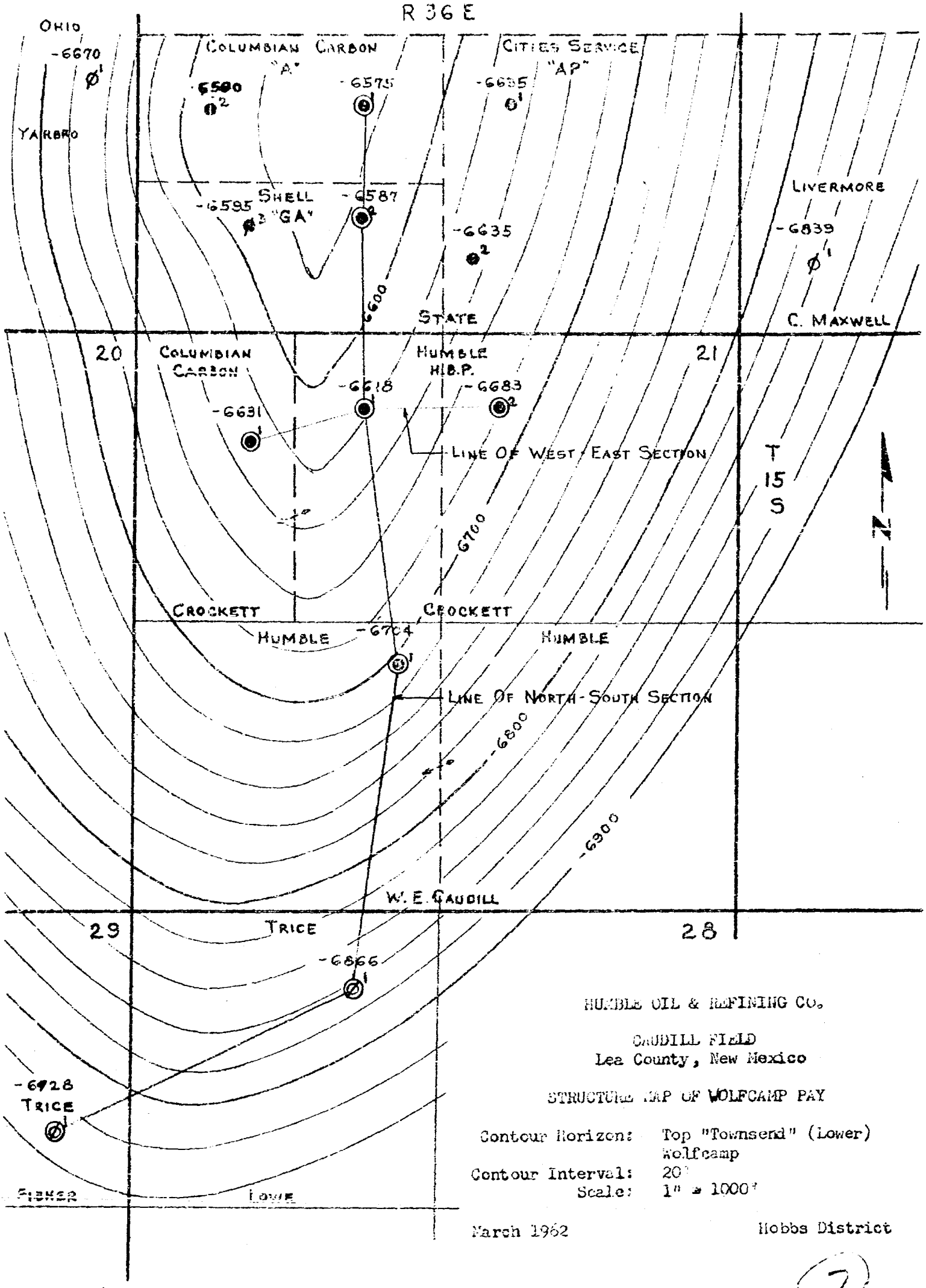


LEGEND:

◉ - WOLFCAMP

● - DEVONIAN

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Humble EXHIBIT NO. 17
CASE NO. 2518



HUMBLE OIL & REFINING CO.

CAUDILL FIELD
Lea County, New Mexico

STRUCTURE MAP OF WOLFCAMP PAY

Contour Horizon: Top "Townsend" (Lower) Wolfcamp
Contour Interval: 20'
Scale: 1" = 1000'

March 1962

Hobbs District

(2)

GENERAL INFORMATION

HUMBLE OIL AND REFINING COMPANY

Present Status: D. H. Crockett #1
Producing zone - Devonian
Pumping through 2-1/2-inch tubing - 450 barrels fluid/day, 90% water
Conventional 320D Pumping Unit with pump set at 5000'
12 - 108" S.P.M. - 2" Plunger.

Proposed Dual Completion: Devonian-Wolfcamp

Devonian String - 2-3/8-inch N-80 Tubing with Hardy-Griffin "DS" joint using present surface equipment and a "double displacement" type subsurface pump. Capacity - 350 barrels fluid per day.
Tubing to be anchored in non-retrievable packer set at approximately 10,650'.

Wolfcamp String - 1-1/4-inch N-80 Tubing with Hardy-Griffin "DS" joint landed in dual string anchor at approximately 10,580'.

Wolfcamp saturation pressure - 3498#
Wolfcamp oil gravity - 42° API

Subsurface Pressure History: D. H. Crockett #2 (Offset Wolfcamp Well)
Initial Pressure - 3743# Dated - 8-4-60
Last Pressure - 2882# Dated - 7-24-61

Gas-Oil Ratio: D. H. Crockett #2
Initial - 1,480 C.F./B.
Present - 1,800 C.F./B.

BKB/mcb
3-26-62

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