Case No.

1721

Application, Transcript,
Small Exhibits, Etc.

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

1201

SYMBOLS
DL=Day Letter
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1959 JUL 6 PM 4 46

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1959 JUL 7 AM 8:10

NEW MEXICO OIL CONSERVATION COMMISSION, ATTN A L PORTER JR= STATE CAPITOL BLDG SANTA FE NMEX=

GULF OIL CORPORATION IS WORKING INTEREST OWNER IN THE NORTH CENTRAL CAPROCK QUEEN UNIT. WE CONCUR WITH THE GREATWESTERN DRILLING COMPANY IN THEIR APPLICATION IN CASE 1721 SCHEDULED FOR EXAMINER HEARING ON JULY 8, 1959, AND URGE APPROVAL BY THE COMMISSION=

GULF OIL CORP W A SHELLSHEAR.

File case
file

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

COPY

July 23, 1959

Mr. Sim Christy
Hervey, Dow & Hinkle
P. O. Box 547
Roswell, New Mexico

Dear Mr. Christy:

On behalf of your client, Great Western Drilling Company, we enclose two copies of Order No. R-1311-A issued by the Oil Conservation Commission July 23, 1959, in Case No. 1721.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ir/

Enclosures

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. 1721
Order No. R-1311-A

APPLICATION OF GREAT WESTERN
DRILLING COMPANY FOR AN AUTO-
MATIC CUSTODY TRANSFER SYSTEM,
FOR PERMISSION TO COMMINGLE THE
PRODUCTION FROM SEPARATE LEASES,
FOR PERMISSION TO PRODUCE MORE
THAN 16 WELLS INTO A COMMON TANK
BATTERY, AND FOR AN ADMINISTRA-
TIVE PROCEDURE WHEREBY WELLS
MAY BE PRODUCED IN EXCESS OF TOP
UNIT ALLOWABLE

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 o'clock a.m. on July 8, 1959, at Santa Fe, New Mexico, before Daniel S. Nutter, 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 22nd day of July, 1959, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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, Great Western Drilling Company, is the operator of the North Central Caprock Queen Unit Area which is located in Chaves and Lea Counties, New Mexico, and is more particularly described as follows:

TOWNSHIP 13 SOUTH, RANGE 31 EAST, NMPM
Section 13: All
Section 14: All
Section 15: SE/4 NE/4, E/2 SE/4
Section 24: NW/4 NW/4

TOWNSHIP 13 SOUTH, RANGE 32 EAST, NMPM
Section 17: N/2 NW/4
Section 18: W/2, NE/4
Section 19: NW/4 NW/4

(3) That the applicant is the operator of all leases within said unit which have been committed to the unit which includes all the aforementioned acreage except the SE/4 NE/4 and the E/2 SE/4 of Section 15, Township 13 South, Range 31 East, NMPM, which as of the date of this order has not been so committed.

(4) That the applicant proposes to commingle the Queen production from all committed leases included within the limits of the said North Central Caprock Queen Unit Area in a single tank battery.

(5) That the applicant seeks authorization to install a meter-type automatic custody transfer system to transfer the Queen production from all the committed leases within said unit to the purchaser.

(6) That the applicant further seeks authorization to produce more than 16 wells into said battery.

(7) That the applicant further proposes the establishment of a project allowable, which would comprise the top unit allowable for the Caprock-Queen Pool multiplied by the number of developed 40-acre units committed to the North Central Caprock Queen Unit Agreement, which allowable would be produced from any well or wells committed to the unit, in any proportion.

(8) That approval of the subject application will neither cause waste nor impair correlative rights and therefore the application should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, Great Western Drilling Company, be and the same is hereby authorized to produce more than 16 wells into a common tank battery, and further to commingle the Queen production from all leases included within the limits of the North Central Caprock Queen Unit Area which is located in Chaves and Lea Counties, New Mexico, and is more particularly described as follows:

TOWNSHIP 13 SOUTH, RANGE 31 EAST, NMPM
Section 13: All
Section 14: All
Section 15: SE/4 NE/4, E/2 SE/4
Section 24: NW/4 NW/4

TOWNSHIP 13 SOUTH, RANGE 32 EAST, NMPM
Section 17: N/2 NW/4
Section 18: W/2, NE/4
Section 19: NW/4 NW/4

(2) That the applicant be and the same is hereby authorized to pass this commingled production through a meter-type automatic custody transfer system; provided, however, that the system shall be so equipped as to prevent the undue waste of oil in the event of malfunction.

(3) That the Proration Manager of the Commission be and the same is hereby authorized to establish a project allowable for the North Central Caprock Queen Unit Area. Said project allowable shall not exceed top unit allowable for the Caprock-Queen Pool multiplied by the number of developed 40-acre units committed to the North Central Caprock Queen Unit Agreement, which allowable may be produced from any well or wells within said unit, in any proportion.

PROVIDED HOWEVER, That applicant shall maintain adequate testing, treating, and storage facilities for said North Central Caprock Queen Unit Area.

IT IS FURTHER ORDERED:

That all meters used in the above-described automatic custody transfer system shall be operated and maintained in such a manner as to ensure an accurate measurement of the liquid hydrocarbon production at all times.

That all meters shall be checked for accuracy at intervals not to exceed one month until further direction by the Secretary-Director. Meters shall be calibrated against a master meter or against a test tank of measured volume and the results of such calibration filed with the Commission on the Commission form entitled "Meter Test Report."

IT IS FURTHER ORDERED:

That the provisions of this order shall be applicable only to that portion of the North Central Caprock Queen Unit Area which has been committed to the Unit Agreement. Upon notice to the Commission from the applicant Unit Operator that additional leases within the Unit Area have been committed to the Unit Agreement, this order shall from that time forward apply with equal force to such newly committed acreage.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOHN BURROUGHS, Chairman

MURRAY E. MORGAN, Member

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

vem/

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 7-20-59

CASE NO. 1721 HEARING DATE 9am 7-8-59
DSN@SF

My recommendations for an order in the above numbered case(s) are as follows:

Enter an order authorizing the following for Great Western Drlg Co.

Authorize the commingling of production from all leases included within the limits of the North Central Caprock Queen Unit Area in a single battery (All ownership of all leases in the unit is common)

Authorize custody transfer of oil from said unit to the purchaser.

Authorize production from 1 more than 16 wells into said battery

Require adequate testing, treating, & storage facilities
Prevent undue waste of oil in event of malfunction.
Require meter tests.

Authorize the assignment of a project allowable, which shall comprise top unit allowable for Caprock Queen Pool multiplied by the number of developed 40-acre units in the N. Central Caprock Queen Unit Area. Provide that this allowable may be produced from any well or wells in the unit area in any proportion.

Sam Nutter
Staff Member

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 8, 1959

EXAMINER HEARING

IN THE MATTER OF:

Case 1721

TRANSCRIPT OF HEARING

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 8, 1959

EXAMINER HEARING

IN THE MATTER OF:

Application of Great Western Drilling Company for an automatic custody transfer system, for permission to commingle the production from separate leases, for permission to produce more than 16 wells into a common tank battery, and for an administrative procedure whereby wells may be produced excess of top unit allowable. Applicant, in the above-styled cause, seeks an order authorizing installation of an automatic custody transfer system and for permission to commingle the Caprock-Queen Pool production from more than 16 wells located on separate leases within the confines of the North Central Caprock Queen Unit Area in Township 13 South, Ranges 31 and 32 East, Lea and Chaves Counties, New Mexico. Applicant further proposes the establishment of an administrative procedure whereby wells in said Unit Area may be permitted to produce in excess of top unit allowable for said Caprock-Queen Pool.

Case 1721

BEFORE:

Mr. Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Take next Case 1721.

MR. PAYNE: Case 1721. "Application of Great Western Drilling Company for an automatic custody transfer system, for permission to commingle the production from separate leases, for permission

to produce more than 16 wells into a common tank battery, and for an administrative procedure whereby wells may be produced excess of top unit allowable."

MR. CHRISTY: Sim Christy of Hervey, Dow & Hinkle for the applicant, Great Western Drilling Company. We have one witness, Mr. Examiner, Mr. Hampton.

(Witness sworn.)

JOHN HAMPTON

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you please state your name, address and occupation?

A John Hampton, H-a-m-p-t-o-n, special project engineer, Great Western Drilling Company, 509 North Lorraine, Midland, Texas.

Q Mr. Hampton, have you previously testified before this regulatory body as a project engineer?

A Yes, I have.

Q Are you familiar with matter contained in application in the Case No. 1721 and what it seeks?

A Yes, sir, I am.

Q Are you familiar with the North Central Caprock Queen Unit Area in Lea and Chaves Counties and the wells and history

thereof?

A Yes, sir.

MR. CHRISTY: Does the Examiner have any questions concerning the qualification of the witness?

MR. NUTTER: Please proceed. No, sir.

Q Now, Mr. Hampton, will you tell us what the application seeks, and I believe there are three things sought by it?

A Yes, sir. We are seeking first, permission to produce more than 16 wells into a common tank battery; secondly, to install an automatic custody transfer system within the Unit Area; and thirdly, we are seeking administrative procedures to be set up whereby we might be allowed to produce a well in this unit at more than normal top State unit allowable for the Caprock Field.

Q By the transfer of allowables?

A Yes, sir.

Q From one well to the other within the Unit Area?

A That is correct.

Q Now, sir, I will refer you to what has been marked as Exhibit 1 and ask you if you will please identify and explain that exhibit.

A Exhibit 1 is a plat of a portion of Caprock-Queen Field. On this plat I have indicated North Central Caprock Queen Unit, the subject of this application, outlined in yellow.

Also I have shown the North Caprock Queen Unit No. 1 to the north, and the North Caprock Queen Unit No. 2 also to the north, and just for orientation purposes we have a bit of the field to the south.

Q All right now, sir. Excuse me.

A This plat also shows all of the producing wells within the three units, and outlined in red, to the best of my knowledge, are all of the injection wells in the three units, the wells that are presently on injection.

Q Yes, sir. Now, I will refer you to Exhibit 2 and ask you if you will please identify and explain that exhibit.

A Yes, sir, Exhibit 2 is a graph of the North Central Caprock Queen Unit showing oil production and water injection. The water injection is portrayed over on the left-hand side of the graph here with small circles connected by lines. That shows that we started water in the ground in March and how much water we put in the ground each month preceding, and at the bottom of the graph here is shown oil production from the Unit Area monthly by crosses which are connected with lines also.

Q Now, would you please give the Commission a brief resume of your operations in the North Central Caprock Queen Unit Area?

A Yes, sir. The North Central Caprock Queen Unit was effective the first of January, 1959. We immediately, of course,

started ordering materials and building our injection facilities. We completed the injection plant in the early part of March of 1959. We started injection of water intc six wells on March the 9th, 1959. On the 21st of March we completed a seventh injection well. I mean by completing that we ran a liner into this well and properly cemented it so as to contain the injected water to the Queen formation. And that well was put on injection the 21st of March, and on May the 18th we put an eighth well on injection.

Q Now, I believe your initial order granting the water flood was for seven wells, provided administrative procedure for subsequent wells. Speaking of that eighth well, did you obtain administrative approval for that injection eighth well?

A Yes, we did.

Q Please continue.

A The area where we started our pilot water flood is in a relatively tight portion of the field, and our initial injection we injected water against about seven to eight hundred pounds of pressure. Of course, we were trying to maintain a pressure balance in this water flood network in order to create a uniform front and produce the most efficient sweep possible.

We have been successful to date in maintaining an equal pressure in the injection wells against this more or less equal pressure. The average daily injection rate in May was 344 barrels

of water per well, or an average of about 2750 barrels of water per day.

By way of explanation, I might say that this was just over half a barrel per acre foot per day, since the pay averages approximately seven to eight feet in the pilot area. Of course, as some of the data in the units up to the north and even as our data is beginning to show, as fill up in this reservoir occurs the injection rates tend to decrease and the injection rates are down now from May in our wells, and I believe as our program proceeds, probably the injection rates will, in these eight wells, will decrease even further.

Q Have you noticed yet a response to this injection of water in the pilot area?

A Yes, sir, we have. The first response we noted to injection of water in this area was around the early part of June in Well No. 18-3.

Q Would you locate that for us, please?

A Yes, sir, it is located in the Northeast Quarter of the Northwest Quarter of Section 18.

Q All right, sir.

A We moved the portable well tester then on to this well and on June 19th our production was up to 16 barrels of oil per day. On previous tests that well had been producing about nine to ten barrels of oil per day. We were definitely sure then

that we had a response to the injection of water when the production remained at about 16 to 17 barrels of oil per day for a week or more.

Then a test on the 15th of June showed that this Well No. 18-3 was making 37 barrels of oil per day. At this time we noted an increase in gas production in Well No. 18-5, so we moved the portable well tester down to that well.

Q That is in the Southwest of the Northwest of 18?

A That is correct, sir. And a test on the 17th of June showed that 18-5 was making 4.4 barrels of oil per day, and a test on the 18th shows 6.75. And then a test on the 19th showed 6.55 barrels of oil per day. Then a test on the 20th showed that 18-5 was making 17 barrels of oil per day. Our latest test that I happened to have available to me, our Well No. 18-3 is capable of making about 70 barrels of oil a day, and Well No. 18-5 is capable of about 20 barrels of oil a day.

And I might add here, on the 2nd of July, just in one day, our Well No. 13-1 came up from former history of about 2 barrels per day per well to 39 barrels on that day.

Q That 13-1 well is in the Northeast Northeast of Section 13?

A Correct, yes, sir. So we are definitely getting a response on this well 13-1. We've also noted an increase in gas production, possibly an increase in 18-11, although we do not

have a test on it, but we possibly have a little increase in oil production.

Q And 18-11 is in the Northeast Southwest of Section 18?

A Right. Yes, sir. We achieved these increases when we accomplished about 75% of theoretical fillup in the pilot area, and since all of these wells came up about the same time we feel that we have been very successful in establishing a balanced flood condition in this area.

We also feel that we have a very successful flood in operation, and we anticipate continued success as the flood is expanded to the west.

Q Now, in your application for allowable relief, you have mentioned a proposal of administrative approval on the matter. Could you give the Examiner your thoughts as to the method you feel the Commission should adopt on administrative approval?

A We would propose that the Commission set up a procedure whereby we would be allowed to produce a stimulated well at more than that State unit allowable for the Caprock-Queen Unit by administrative approval without further notice and hearing. We propose to do this by transferring allowable from the top State unit allowable, from injection wells and from wells on the west side of the unit, which are not being stimulated at the present time. In other words, we would produce stimulated wells at a high rate in order to prevent bypassing of the oil in the

reservoir by the injected water. We think by keeping a pressure gradient into our producing wells that we will eventually recover more oil because we won't have water, not as likely to have a water break around the oil in the reservoir.

Now, we also feel that we should produce at a proper rate in order to maintain correlative rights with the two units to the north which are producing wells at capacity.

Q What procedure would you recommend to the Examiner be adopted by the Commission on this administrative approval without notice and hearing?

A Well, we feel that first we should present evidence to the Commission that a well has been stimulated by the flood, and by letter at the same time we should state the amount of our requested allowable transfer, including this, that a statement as to the new total allowable assigned to the unit. And we would also recommend that for ease in handling that this be delegated to the Commission district level.

Q Now, sir, I refer you to what has been marked Exhibit 3 and ask you if you will please identify and explain it. I might say, for the benefit of the Commission, we are not turning to the ACT portion.

A Exhibit 3 is a plat which shows only the North Central Caprock Queen Unit. The little solid blue circles on this plat represent all of the presently producing wells in the unit.

The lines running between them with small numbers on them represent the new lines as we would propose to centralize them.

As you can see from this exhibit, we propose to produce more than sixteen wells into a common tank battery. Now, we can see no problems in connection with this because the Commission is aware by their Order R-9311 this area was unitized, and consequently the ownership is common throughout.

Q That is working overriding and royalty is all common?

A Yes, sir. I would like to point out also that we have provided test facilities at several locations within the unit, we can go into more detail on that in the next exhibit. These test facilities will be at the point where you notice the flow lines all coming together into a central point. You will also notice beside each of these wells that there are a couple of numbers. The number at the top 17-3, 18-1, 18-3 and so forth are the numbers of the well within the unit boundaries. The other little number which is 2.06 and 1.96, 72.50 represent the average daily production of these wells. From our latest data that is available, I might point out there the eastern half of the unit that is from the, you see the tank battery located in the central portion. From there to the east the unit is capable of producing about 162.87 barrels of oil per day at the present time, and from the tank battery west the unit is capable of producing about 158.65 barrels of oil per day.

Since the area that we are primarily interested in where we are putting water in the ground is on the eastern side of the unit, we plan to start centralizing the flow line and start combining the facilities on the eastern side of the unit, and after we have the lines on the eastern side we will proceed at a more leisurely pace to install the facilities from the western side.

As you can also see on this exhibit, we are including all of the presently producing wells in our plan for centralizing the flow lines; part of these producers will be converted to injection wells at the proper time. The wells which have an even number such as 13-4, 14-2, 14-4 and so forth will eventually become injection wells.

The easternmost test station, that's the one further to the east where all the lines come together, will have seven producing wells going into it, and the remaining test stations will have four producing wells going into it, after we have converted all of the wells to injection wells that will be converted; so as you can see, we plan enough facilities so that each well can be tested at least once a week.

Q Now, as I understand you, on Exhibit 3, sir, you have not shown the present eight injection wells, but you have shown the other wells which some day will become injection wells?

A No, sir, we have not shown the present wells which are on production on this exhibit.

Q But you have included other wells which in the future will become injection wells?

A Yes, sir, right.

Q And they are injection wells?

A That's right.

Q I misspoke myself on the sixteen well question. Would you please identify and explain Exhibit 4 to the Commission?

A Exhibit 4 is a schematic diagram of the easternmost test station. All of the other test stations in the unit will be patterned after this one except that they will have fewer wells going into it eventually. You can follow the flow of the well on test by the red arrow which I put on this exhibit. I happened to choose Well No. 3 here. As you can see, the oil comes in from the well to this test station and flows up into the header, and by opening and closing the proper valves the oil from a particular well can be directed to and through the test separator. And after the oil goes through the test separator it goes back to the main flow line to the central tank battery. The separator will, of course, meter both oil and water and then return both to the main flow line.

Q Now, turning to that portion of your application concerning the ACT Section System, I wish you would identify and explain Exhibit 5 to the Commission.

A Yes, sir, Exhibit No. 5 is a schematic diagram of our

proposed central tank battery and our automatic custody transfer system.

As the Commission will notice, I have attempted to number or name all of the various components in this system, and attached to the back of Exhibit 5 is an explanation of the flow and the components to this system.

We might briefly run through the flow of a barrel of oil coming in. It comes in to the test separator which is numbered No. 1 on this diagram.

Q That is in your upper left-hand corner?

A Correct. Oil comes from the wells into this separator which is a two-phase separator and separates the oil and water from the gas. The gas passes through this line No. 1-A, which you will notice at the top of the separator, into the, through this line down to our steam generator, down to the, sort of the central portion of the diagram, and this steam generator is used for heating the water and heating treating water in this tank No. 3.

Of course, we are utilizing the gas that we can gather from the unit for running the steam generator. Item No. 1-B is a check valve or back pressure valve, I am sorry, 1-B, just down from the separator. This valve merely serves to hold five to ten pounds of pressure on the separator and allow enough pressure to build up in the separator to lift fluid through line 1-C and

into the upper portion of this boot at No. 2.

Now, this line 1-C merely serves as a flow line from the separator into the upper portion of the boot, No. 2, it flows into the upper portion of the boot here and the top eight feet of this boot merely serves as a gas expansion section and then allows gas to pass through out of the top and through line 2-A down to the steam generator where we are utilizing it to create steam.

2-B is a check valve which allows gas to flow out of the storage tanks and down to the steam generator and does not allow gas to flow the other way.

Down at the bottom of the boot you'll notice line No. 2-C. This is the flow line from the boot into the treating tank. Oil passes from this boot into the bottom portion of the treater tank which is labeled No. 3, below spreaders and heat exchangers, which are represented by line No. 3-A and serve to heat the water in the bottom portion of this treater tank.

The treater tank No. 3 also acts as a free water knockout, and the upper portion of the tank is available for additional storage space. Like I said, 3-A represents the heat exchangers, 3-B, which is merely the steam line and return to the steam generator, 3-D which is over to the left side of the treating tank is the interface control which controls the position of the interface between oil and water by opening and closing this valve

No. 3-H right out in front of the treater tank and allowing water to drain from this tank.

The bottom control at 3-D activates an alarm and notifies the pumper that the interface has fallen too low in the treater tank. 3-E then, it looks rather like 3-C on this diagram.

Q May I ask, you mean the number to the right of the three tank to be 3-E?

A Yes, sir.

Q It appears to be C.

A Yes, sir, it appears to be C on this diagram, but it is E and it is merely the flow line from the treating tank into our surge tank, which is No. 4. 3-F is an automatic valve which is normally opened and allows oil to flow from the treating tank into the surge tank. If this valve fails it fails open.

The line No. 3-G, which is the line up at the top of the treater tank, is a flow line to the surge tank for a high fluid level in the treating tank. 3-H is, as we covered before, an automatic valve which is activated by the interface control No. 3-D, and if this valve fails, it fails closed.

No. 4 now is our surge tank from which we normally run, will normally run oil to the pipeline. It's, the oil is run between the levels of the little nubs out to the right which represent various controls, 4-C and 4-D. We go down these emergency, or these controls that I show out to the right-hand

side of the surge tank No. 4-A. Up at the very top of the tank is an emergency shutin control. This control closes valve No. 5 which you see just ahead of the treater, and when this valve is closed, of course, pressure builds up in the flow lines and shuts in the producing wells.

MR. NUTTER: What happened to Well No. 5?

A It is just ahead of the separator.

MR. NUTTER: Oh, the separator.

Q (By Mr. Christy) I thought you said the treater.

A It is just ahead of the separator.

MR. NUTTER: I see it now.

A 4-B now, is a high level alarm control. When oil reaches the level of 4-B in this surge tank an alarm is activated and the alarm notifies the pumper that a high level has built up in the surge tank. Now, this control also closes valve No. 3-F and allows the treater tank to fill up to line 3-G and overflow through 3-G into the surge tank. This allows us to use the upper portion of the treater tank for additional storage.

4-C is the high working level control. This opens valve No. 7, which is also called the stop set valve down here in the ACT System.

Q That's the one that looks like a question mark?

A Yes, sir.

MR. NUTTER: All right, sir, that's a 7?

A That is a 7. It also, when it opens this valve No. 7, it activates the charge pump and the pipeline pump.

4-D is the low working level control. When the oil reaches this level of 4-D in the treating plant, in the surge tank, closes valve No. 7, it shuts down the charge pump and the pipeline pump and no more oil is run to the pipeline then.

Q That prevents unmarketable oil from going through to the pipeline?

A It prevents oil from going to the pipeline, yes, sir. 4-E is a low working, low level alarm which activates an alarm system and notifies the pumper that the fluid level has reached a low level in the working tank.

4-F is a low level shutin control. It shuts down the circulation pump No. 6 which is shown just behind the working tank. When the fluid reaches 4-E, then that circulating pump is shut down.

MR. NUTTER: What line is that valve No. 6 on? Where does that line go?

A It is out of the bottom of this surge tank. You see, it is shown by a dotted line, it is out of the bottom there.

MR. NUTTER: Oh, I see.

A I will explain why here just as we get to it. 4-G is merely a BS&W drawoff line. 4-H, which is up at the top and to the right of the surge tank, is a line to this overflow tank

No. 8. Now, back to this valve which shuts the lease in, No. 5. This is an automatic valve and it's closed by the high level shut-in control No. 4-A at the top of the working tank. This valve, when it is closed, builds up a pressure in the flow line, and when this pressure is built up in the lines the producing wells will be shut in by a pressure switch which cuts off on the power to the pump motor and requires manual restarting.

Now, No. 6 is a circulating pump which is activated by this monitor that you see at the bottom of surge tank. The circulating pump is activated by the monitor when a high BS&W cut is picked up by the monitor. The monitor turns it off when it detects good oil.

6-A is an automatic valve which is activiated by the BS&W monitor, both open and closed, and if this valve fails it fails closed.

No. 7 is like we discussed the stop set valve in the ACT System, which allows us to pass oil from the surge tank into our automatic custody transfer system. It is opened by the high working level No. 4-C in the surge tank. It is closed by the low working level control No. 4-D. It is also closed by the monitor if the monitor picks up bad oil, and if this valve fails it fails closed.

Now, pass then from the treating system in the storage facilities there into the automatic custody transfer system.

The system is opened by control No. 4-C which opens valve No. 7, starts the charge pump and the pipeline pump, thus starting merchantable oil through one or both of the skid mounted units. Oil passes through the charge pump then and into the deaerator.

This deaerator just serves to remove free air and gas that accidentally get into the system, and then oil passes through the deaerator and strainer and the function of the strainer is to trap any foreign objects that might accidentally get into the line, and the oil passes out of the strainer through positive displacement meters. They, by the way, I say PD meter on the ACT schematic diagram. That is positive displacement meter. These meters have counters on them which reads in "barrels", "tenths", and "hundredths" of barrels.

Each meter is equipped with a temperature compensator to correct all measurements to a base of 60 degrees fahrenheit. A lockout safety device on the meter, which requires manual reset, shuts down the ACT System in the event the counter stops functioning properly. The counter is equipped, the meter is equipped with a counter, and by inserting a ticket into the counter ticket printer at the beginning of a measurement period and printing the opening reading, the ticket is automatically locked in place and then cannot be removed without mutilation until you print the closing reading. Historical data shows that these meters are accurate to a greater degree than .1 of 1%.

I might point out that in order to prove these meters they must repeat a measurement within .05 of 1% to be acceptable. The oil passes from the positive displacement meter through the stop set valve.

This valve is closed by mechanical linkage to the meter when a predetermined amount of oil has passed the meter. The oil then passes into the vertical sample riser where a sample will be taken approximately out of every ten barrels of oil. This sampler will be driven by electrical impulses from the meter so that it takes a sample, a small sample for each ten barrels of oil which pass through the meter, and then the sample is stopped in a sealed sample container represented by a little circle with three little legs on it.

The oil then passes into the pipeline pump. You'll notice here that a pipeline pump is required to deliver oil to service pipeline company, but one is not required to deliver on it to Texas,- New Mexico Pipeline Company. Oil then passes through this back pressure valve.

This valve merely serves to hold a back pressure on the system in order to keep the lines full to accurately gauge the oil. The oil then passes from the flow-rate control valve and into the pipeline.

The flow-rate control valve purpose is to regulate the flow at a predetermined rate to either or both pipeline companies.

You'll note out in the middle between these two skids we have permanently placed a prover tank. Now, the meters are proved by filling this prover tank behind the flow-rate control valve in order to prove under the same conditions under which we normally run oil.

I think about the only other part of the system that I have not explained is the monitor. This BS&W cut monitor operates on a dielectric constant principle and permits only merchantable oil to pass through the meter. If the set value of 1% BS&W is exceeded, the monitor closes valve No. 7 and shuts down the charge pump and the pipeline pump. It also opens valve No. 6-A and starts the recirculating pump No. 6 and diverts the non-merchantable oil back through the treating system. Now, as soon as the oil then in the surge tank becomes acceptable to the monitor, the bypass closes and shipping resumes to the pipeline.

Q Now, are there any other ACT Systems similar to this one operating in New Mexico?

A Yes, sir. It is essentially the same system as operated by Shell in the Pearl-Queen Pool, by Continental in the Hobbs Pool, and also it is essentially the same as Graridge is operating in the North Caprock-Queen Unit No. 1 to the north, and Ambassador is operating a like system in Unit No. 2 to the north. It is also quite similar to the original ACT in New Mexico to Shell in the Bisti Field area.

Q Now, have the two pipelines in question, the Service Pipeline Company and the Texas-New Mexico Pipeline Company, have they seen this proposed installation and approved it?

A Yes, sir, they have. We correlated very closely with both pipeline companies on our design, and they have both accepted this design as acceptable to them, and we'll run oil through them.

Q Now, what benefits will accrue from the granting of this application with respect to the ACT System, and why do you feel the Commission should grant it?

A Well, there are several reasons. First, there is increased safety to personnel because the hazards of cleaning tanks and gauging the tanks and so forth will be eliminated. We feel a very important reason is that crude oil will be conserved because metering eliminates exposure of the oil to air through the system, this means the light petroleum fractions in the crude, thus retaining it's volume, gravity and price.

There would be a great savings to the producer in storage and treating facilities that we would have to have on the unit without this system. In other words, we wouldn't have to have the large volume of storage in the various tanks and we wouldn't have to have a treater for each tank battery that we had. In event of a natural disaster such as lightning there would not be as great a loss of oil because we'll not have as much

oil in storage under this system as we would if we had tank batteries on each and every tank.

Also the tanks will not have to be cleaned as often and we will circulate the tank bottoms back to the treating system so that some oil that would normally be lost in cleaning tanks and so forth would be conserved by this system, and also in any opinion, the positive displacement meters are probably more accurate than hand gauging.

Q Now, referring to all three of the requests you have made in this application, do you feel that these three requests are in the interest of conservation?

A Yes, sir.

Q Do you feel that they violate the correlative rights of the interested parties?

A No, sir.

Q Were Exhibits 1 through 5 inclusive prepared by you or under your direct supervision?

A Yes, sir.

MR. NUTTER: Any questions of Mr. Hampton?

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr. Hampton, do you intend to try and live with what is actually a project allowable during the life of this water flood?

A Mr. Payne, as we see the development of this unit, we believe we can, yes, sir.

Q You are aware that Cities Service was apparently unable to do that?

A I was, yes, sir.

MR. PAYNE: That's all, thank you.

BY MR. NUTTER:

Q How many forty acre tracts do you have in that unit, Mr. Hampton?

A 51.

Q What is the total allowable, 51 times 34, what is the present allowable, 35?

A I believe it is 35.

Q Assuming that the allowable is 35 at the present time, and you have 51 forty acre tracts in the unit, would you have approximately 1785 barrels of allowable?

A That sounds right, yes.

Q Do you think that as far as you can tell at the present time that the rate of production for the North Central Caprock Queen Unit water flood will ever exceed 1785 barrels a day?

A Well, of course that is extremely difficult to predict, but as we see the development now, I do not think so.

Q At least this 1785 number will be sufficient to last

for quite a bit of time?

A Yes, sir.

Q I note from your Exhibit No. 3, Mr. Hampton, that in quite a number of instances, particularly to the western portion of that exhibit, we have more than one well flowing through a three inch line into the main trunk line. Now, when you put these other wells on water injection, will each well have its own flow line into the trunk line?

A Yes, sir, I believe so.

Q And how will the wells be tested, by portable tester or with a separator?

A No, Mr. Nutter, all of our test stations at the points where you see these lines come together.

Q There is a test station at the juncture line?

A Yes, sir, at the junction of each of those lines.

Q Now, I have made some circles on this Exhibit No. 3 and mark them "T" in red. Are those the test stations, Mr. Hampton?

A Yes, they are.

Q So you will be able to produce a well into a test station, get a test on this well without having to shut in any other wells?

A When the system is fully developed we will. At the present time, as you can see, some of the wells would have to be

shut in to test an individual well, but that is not in the critical portion of the field at the present time and we can still stay well within the Commission rules on testing wells.

Q I see. Now, on your Exhibit No. 5 you have a working level, or a storage level in tank No. 3, from the top of the tank down to the first circle that you have drawn on that.

A That first circle, Mr. Nutter, is a mistake. I don't know how it got on there, it does not represent anything.

Q Well, now, the working level is from the line 3-E down to the level 3, is that correct?

A That is correct, yes, sir.

Q And you, under normal conditions you could have as much oil in that tank as would reach the line 3-E?

A Yes, sir.

Q And, in the event of a failure of the system, you would have storage then from 3-E to the top of the tank?

A Actually from 3-D to the top of the tank. That would be additional from 3-E to the tank.

Q You could have an operating level at 3-E when the thing would fail?

A Yes, that is the operating level normally.

Q So your storage level would be from 3-E to the top if the failure occurred when you happened to have a full working level?

A But the additional storage would be there.

Q Now, you have storage in tank No. 4, you would have storage from 4-C up to 4-A, in the event of a failure?

A The tank will store from the bottom of the tank to 4-A.

Q But the working level is from 4-C to 4-D, isn't it?

A Yes.

Q If the failure occurred when you had a full working level, it would be storage from 4-C to 4-A?

A Yes.

Q Now, this other tank over here to the right, does that contain storage capacity?

A Yes, sir, a full tank full.

Q I thought that a failure would close valve 4-A to prevent the flow of oil.

A No, that is not a valve, Mr. Nutter, No. 4-A is an emergency shutin control. There is no valve on this line.

Q Which operates valve 5 over here?

A Yes.

Q So you have an overflow then from the top of tank No. 4 into this other tank over to the right?

A Yes.

Q Now, what is the capacity of the tank to the right?

A Five hundred barrels.

Q And what would be the approximate capacity of tank

No. 4 from 4-C to 4-A?

A That is a 500 barrel tank, and let's say it is half of it, 250 barrels.

Q Now, how about from line 3-E on tank No. 3 to the top of the tank?

A Well, that is a 750 barrel tank, and let's say it is a third of the way.

Q So you have approximately 1,000 barrels of open storage which could be utilized, is that correct?

A That is correct.

Q At all times? A Yes.

Q Essentially? A Yes.

Q Probably a thousand barrels. And in the event of a failure, however, and the storage was full, valve No. 5 will be closed and the wells will be shut in at the wellhead?

A Yes, sir.

Q The pump units? A Yes.

MR. NUTTER: Any further questions of Mr. Hampton?

RE-DIRECT EXAMINATION

BY MR. CHRISTY:

Q Mr. Hampton, these are all pumping wells, are they not?

A They are except the injection wells.

MR. CHRISTY: That's all we have of this witness. At this time we would like to offer in eviden e Applicant's

Exhibits 1 through 5 inclusive as amended by the testimony in Exhibit 5 to delete the top line on tank 3 to show the figure 3-E to the right of tank 3 and to make the stop set valve No. 7 instead of a question mark. Those three amendments we would like to offer in evidence, the five exhibits.

MR. NUTTER: Without objection, Great Western Exhibits 1 through 5 will be admitted.

MR. CHRISTY: That is all we have for the applicant.

MR. NUTTER: If there is nothing further in Case 1721 we will take the --

MR. PAYNE: I have a statement I received from Gulf Oil Corporation concurring in the application.

MR. NUTTER: The witness may be excused. We will take the case under advisement and the hearing is recessed.

(Witness excused.)

STATE OF NEW MEXICO)
: SS
COUNTY OF BERNALILLO)

I, JOSEPH A. TRUJILLO, 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 24th day of July, 1959.

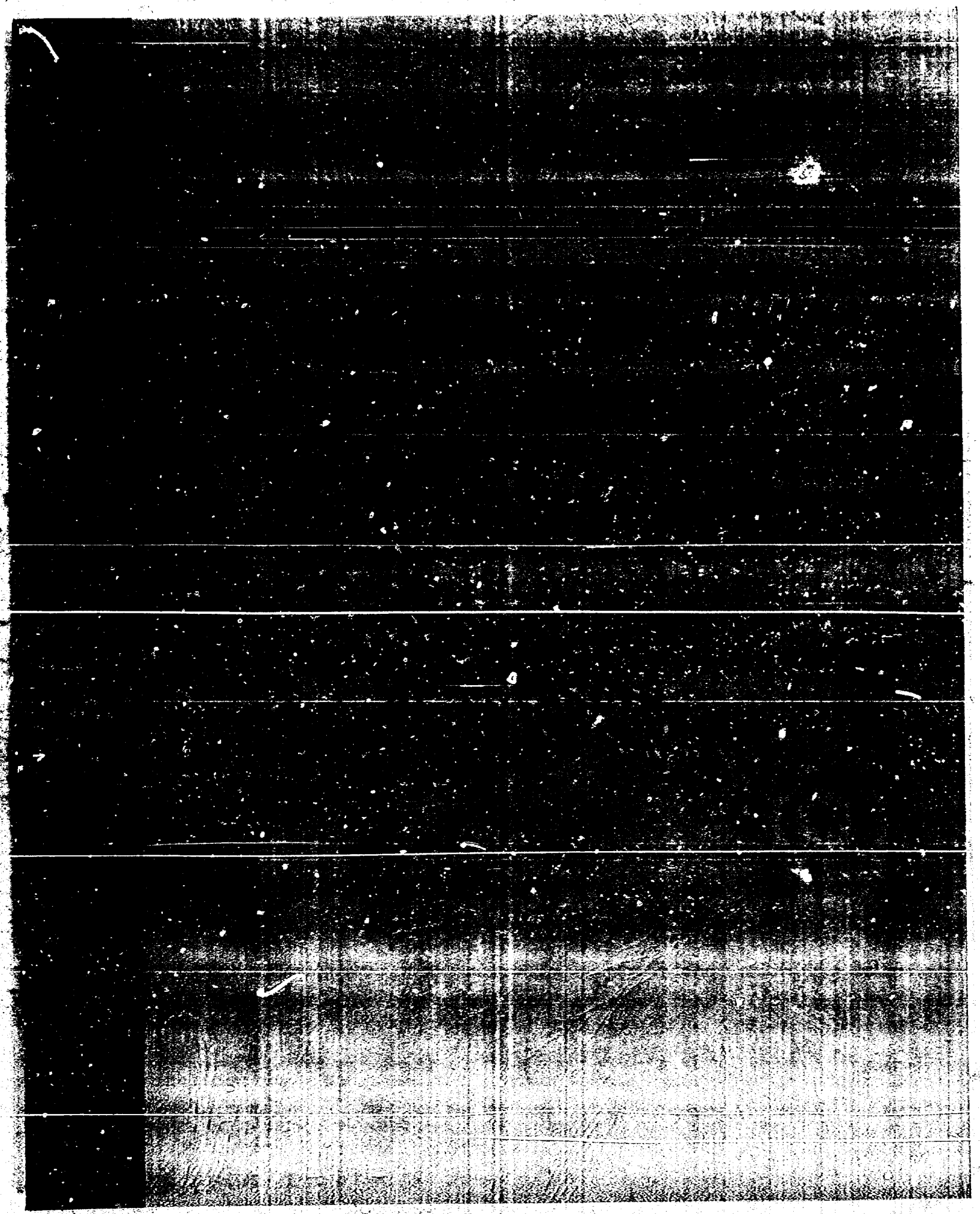
Joseph A. Trujillo
Notary Public-Court Reporter

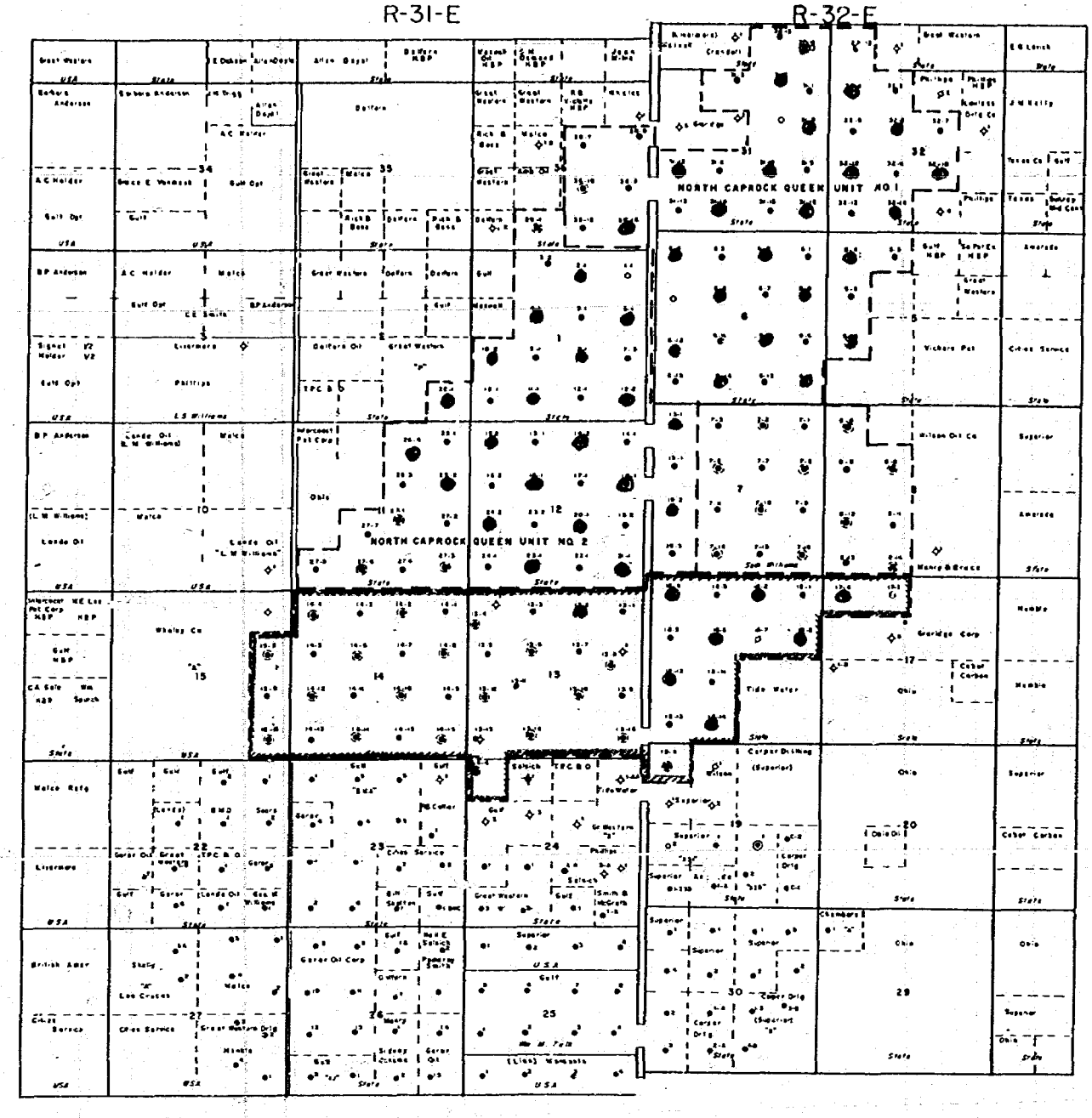
My commission expires:
Oct 5, 1960

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1731, heard by me on 7-8, 1959.

[signature], Examiner
New Mexico Oil Conservation Commission

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691





NORTH CENTRAL CAPROCK QUEEN UNIT

OPERATED BY

GREAT WESTERN DRILLING COMPANY

CAPROCK QUEEN POOL

LEA AND CHAVES COUNTIES, NEW MEXICO

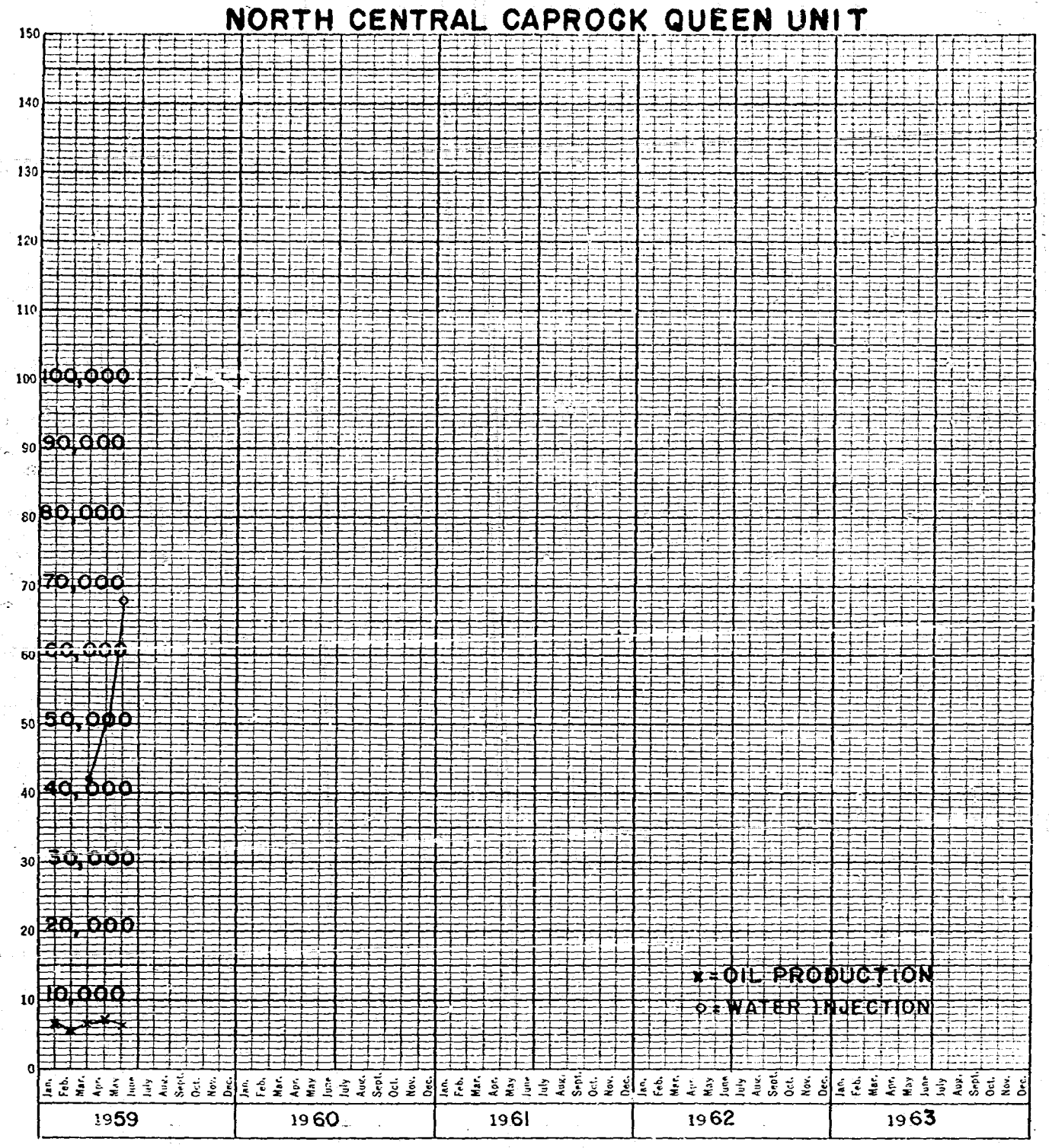
SCALE

LEGEND

- Producer
- Injection well
- Proposed injection well
- Dry hole

#1

51
35
255
153
178


NORTH CENTRAL CAPROCK QUEEN UNIT
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
x = OIL PRODUCTION
o = WATER INJECTION
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1959
1960
1961
1962
1963

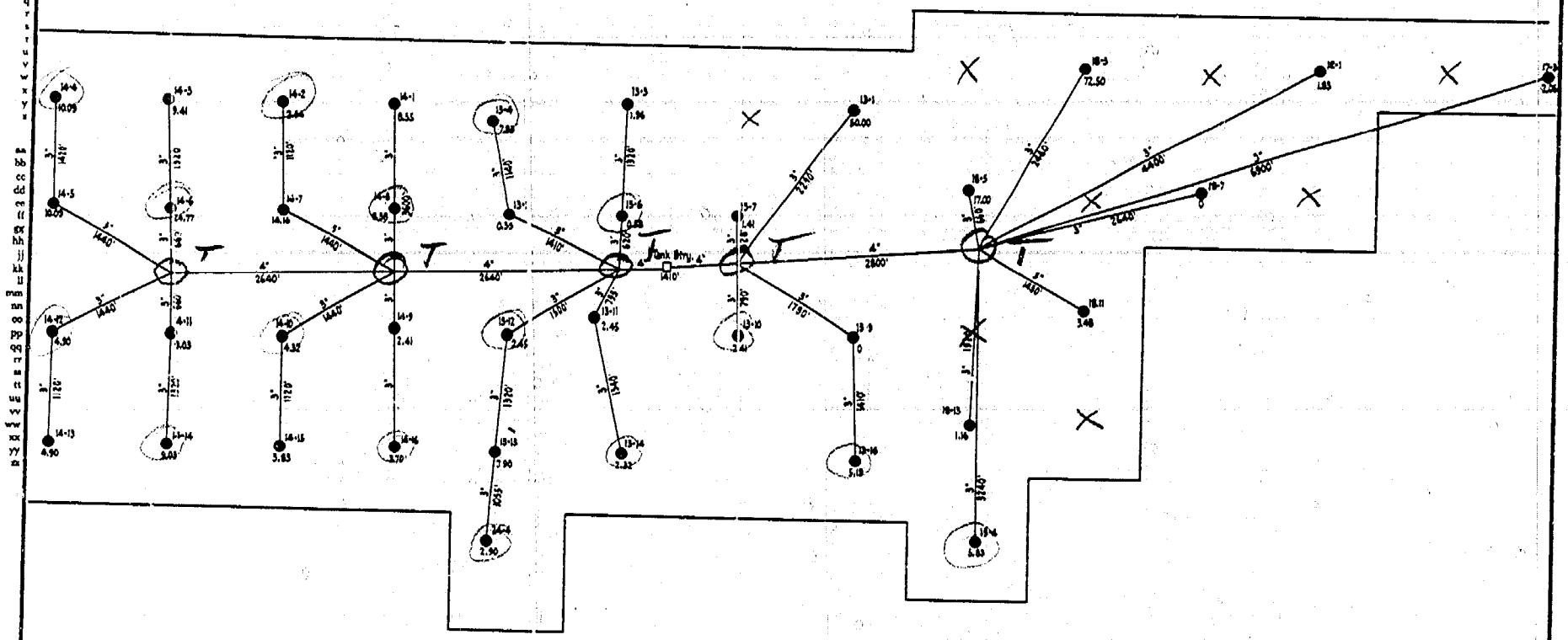
#2

[redacted] B C D [redacted] H J K [redacted] O P Q [redacted] U V W [redacted]

SCHEMATIC DIAGRAM

CENTRALIZED FLOW LINES
NORTH CENTRAL CAPROCK QUEEN UNIT

GREAT WESTERN DRILLING COMPANY, OPERATOR



GREAT WESTERN DRILLING COMPANY MIDLAND, TEXAS	
DRAWN BY:	SCALE:
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AUTHORIZED BY:	DRAWING NO.
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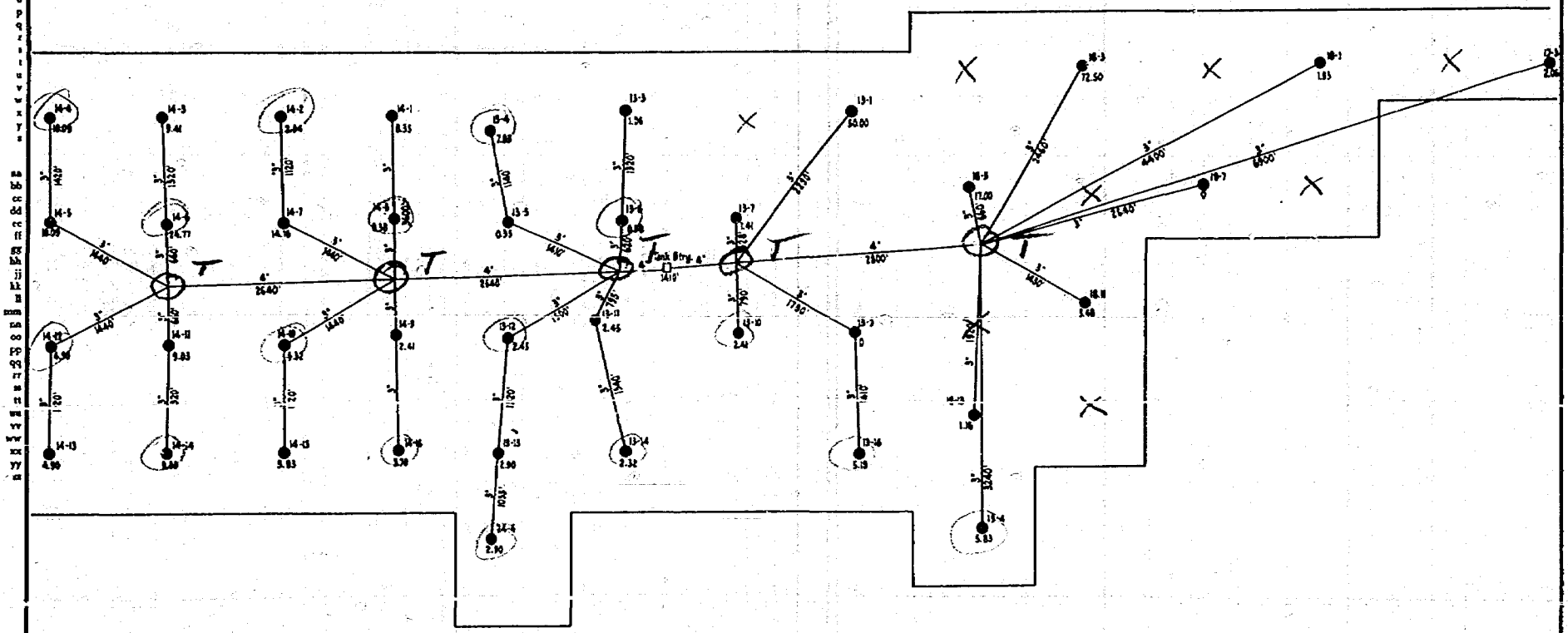
#3

SCHEMATIC DIAGRAM

CENTRALIZED FLOW LINES
NORTH CENTRAL CAPROCK QUEEN UNIT

GREAT WESTERN DRILLING COMPANY, OPERATOR



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#3

SCHEMATIC DIAGRAM

CENTRAL TEST STATION
NORTH CENTRAL CAPROCK QUEEN UNIT

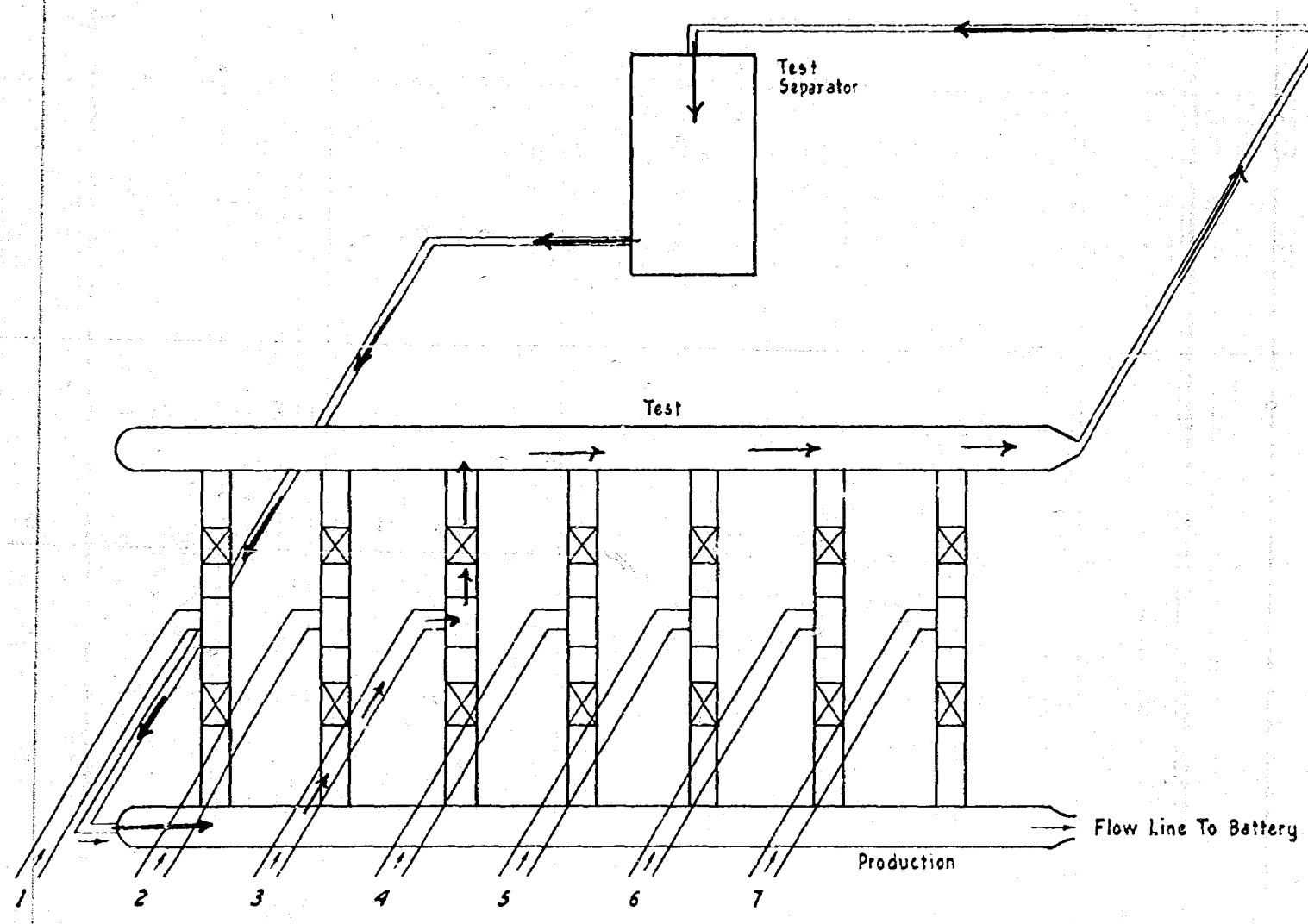
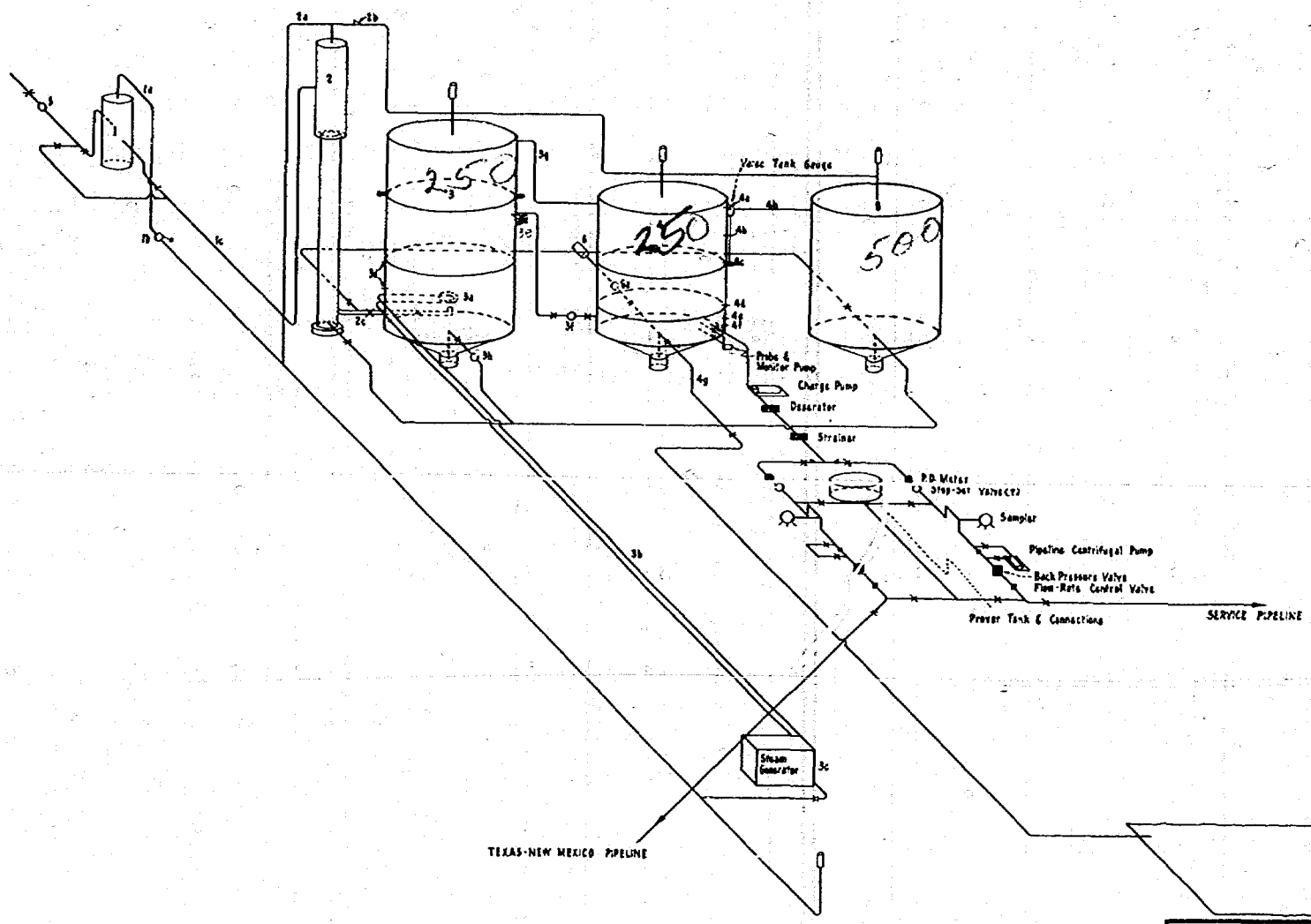


Exhibit No. 4

SCHEMATIC "ACT"

NORTH CENTRAL CAPROCK QUEEN UNIT

GREAT WESTERN DRILLING COMPANY, OPERATOR
TO SERVICE & TEXAS-NEW MEXICO PIPELINES



GREAT WESTERN DRILLING COMPANY
MIDLAND, TEXAS

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	DEPT.

Exhibit No. 5

EXPLANATION OF FLOW AND COMPONENTS
PROPOSED TREATING AND AUTOMATIC CUSTODY TRANSFER SYSTEM

NORTH CENTRAL CAPROCK QUEEN UNIT
LEA AND CHAVES COUNTIES, NEW MEXICO

EXPLANATION OF FLOW AND COMPONENTS
PROPOSED TREATING AND AUTOMATIC CUSTODY TRANSFER SYSTEM
NORTH CENTRAL CAPROCK QUEEN UNIT
LEA AND CHAVES COUNTIES, NEW MEXICO

1. SEPARATOR: Oil comes from the wells to this separator. This separator is a two phase separator which separates the oil and water from the gas. The gas passes through line 1-A to the steam generator which is used for heating treating water.

   (A) Flow line to steam generator.

   (B) Back pressure valve: This valve holds five to ten pounds of pressure on the separator and allows the separator to build up enough pressure to lift fluid into the boot.

   (C) Fluid line from separator to boot: Oil and water from the separator pass through this line to the upper portion of the boot.

2. BOOT: The top eight feet of this boot serves as a gas expansion section and allows gas to pass through a line to the steam generator.

   (A) Gas line to steam generator.

   (B) Check valve: Allows gas to flow from storage tanks to steam generator.

   (C) Flow line from boot to treating tank: Passes oil and water from boot into bottom of treating tank below spreader and heat exchangers.

3. TREATING TANK: The lower section of this tank contains hot water which is heated by coils from the steam generator. It also acts as a free water knockout. The upper portion of the tank is available for additional storage space.

   (A) Heat exchanger.

   (B) Steam line and return.

   (C) Steam generator.

   (D) Interface control: Controls the position of the interface between oil and water by opening and closing valve No. 3-H and allowing water to drain from the tank. The bottom control at 3-D activates an alarm which notifies the pumper that the interface has fallen too low in the tank.

EXPLANATION OF FLOW AND COMPONENTS
PROPOSED TREATING AND AUTOMATIC CUSTODY TRANSFER SYSTEM
NORTH CENTRAL CAPROCK QUEEN UNIT
LEA AND CHAVES COUNTIES, NEW MEXICO

1. SEPARATOR: Oil comes from the wells to this separator. This separator is a two phase separator which separates the oil and water from the gas. The gas passes through line 1-A to the steam generator which is used for heating treating water.

   (A) Flow line to steam generator.

   (B) Back pressure valve: This valve holds five to ten pounds of pressure on the separator and allows the separator to build up enough pressure to lift fluid into the boot.

   (C) Fluid line from separator to boot: Oil and water from the separator pass through this line to the upper portion of the boot.

2. BOOT: The top eight feet of this boot serves as a gas expansion section and allows gas to pass through a line to the steam generator.

   (A) Gas line to steam generator.

   (B) Check valve: Allows gas to flow from storage tanks to steam generator.

   (C) Flow line from boot to treating tank: Passes oil and water from boot into bottom of treating tank below spreader and heat exchangers.

3. TREATING TANK: The lower section of this tank contains hot water which is heated by coils from the steam generator. It also acts as a free water knockout. The upper portion of the tank is available for additional storage space.

   (A) Heat exchanger.

   (B) Steam line and return.

   (C) Steam generator.

   (D) Interface control: Controls the position of the interface between oil and water by opening and closing valve No. 3-H and allowing water to drain from the tank. The bottom control at 3-D activates an alarm which notifies the pumper that the interface has fallen too low in the tank.

(E) Flow line to surge tank.

(F) Automatic valve: Normally open. Allows oil to flow from treating tank to surge tank. Fails open.

(G) Flow line to surge tank for high fluid level in treating tank.

(H) Automatic valve: Activated by interface control 3-D. Fails closed.

4. SURGE TANK: Oil is run to the pipeline from this tank, normally between the levels of 4-D and 4-C.

(A) Emergency shutin control: This control closes valve No. 5, which builds up pressure in the flow lines and shuts in producing wells.

(B) High level alarm control: When oil reaches the level of control No. 4-B in the surge tank, an alarm is activated which notifies the pumper that a high level has built up in the surge tank. This control also closes valve No. 3-F which allows the treater tank to fill to line 3-G and overflow through 3-G into the surge tank, thus allowing the top portion of the treater tank to be utilized for storage.

(C) High working level control: Opens valve No. 7, activates charge pump and pipeline pump.

(D) Low working level control: Closes valve No. 7, shuts down charge pump and pipeline pump.

(E) Low level alarm: Activates an alarm system which notifies pumper that the fluid level in surge tank is dangerously low.

(F) Low level shutin control: Shuts down circulation pump No. 6 when fluid reaches this level.

(G) BS&W drawoff line.

(H) Flow line to overflow tank No. 8.

5. AUTOMATIC VALVE: This valve is closed by high level shutin control No. 4-A and builds up a pressure in the flow lines. When this pressure is built up in the lines, the producing wells will be shut in by a pressure switch which cuts off power to the pump motor and requires manual restarting.

6. CIRCULATING PUMP: Activated by monitor when a high BS&W cut is picked up by the monitor. The monitor turns the pump off when it detects good oil in the surge tank.

   (A) Automatic Valve: Activated by BS&W monitor. Fails closed.

7. AUTOMATIC VALVE: Allows oil to pass from the surge tank into Automatic Custody Transfer System. Opened by high working level control No. 4-C. Closed by low working level control No. 4-D. Also closed by monitor, if monitor picks up bad oil. Fails closed.

AUTOMATIC CUSTODY TRANSFER SYSTEM

The Automatic Custody Transfer System is activated by high working level control No. 4-C in the surge tank. 4-C opens valve No. 7, starts the charge pump and the pipeline pump, thus starting merchantable oil through one or both of the skid mounted units. Oil passes through the charge pump and into the deaerator.

DEAERATOR: Removes free air or gas, should it accidentally get into the system. Oil passes from the deaerator into the strainer.

STRAINER: The function of the strainer is to trap any foreign objects which might accidentally get into the line. The oil is then metered by positive displacement meters.

POSITIVE DISPLACEMENT METERS: These meters are positive displacement type with counters reading in "barrels", "tenths", and "hundredths". Each meter is equipped with a temperature compensator to correct all measurements to a base of 60 degrees fahrenheit. A lockout safety device on the meter, which requires manual reset, shuts down the ACT System in the event the counter stops functioning properly. The counter is equipped with a ticket printer. By inserting a ticket in the printer at the beginning of a measurement period and printing the opening reading, the ticket is automatically locked in place and cannot be removed without mutilation until the closing reading is printed. Historical data shows that these meters are accurate to a greater degree than .1 of 1%. In order to prove these meters, they must repeat a measurement within .05 of 1% to be acceptable. The oil passes from the positive displacement meters through the stop set valve.

STOP SET VALVE: This valve is closed by mechanical linkage when a predetermined amount of oil has passed through the meter. The oil then passes into a vertical sample riser where a sample will be taken of approximately every 10 barrels of oil.

SAMPLER: The sampler will be driven by electric impulses from the meter, so that a small sample for each 10 barrels of oil which pass through the meter is drawn into a hermetically sealed sample container. The oil then passes into the pipeline pump.

PIPELINE PUMP: A pump is required to deliver oil to Service Pipeline Company. A pump is not required to deliver oil to Texas-New Mexico Pipeline Company. The oil then passes through a back pressure valve.

BACK PRESSURE VALVE: This valve merely holds back pressure on the system in order to keep the lines full at all times to accurately guage the oil. The oil is then passed through flow-rate control valve and into the pipeline. The purpose of the flow-rate control valve is to regulate the flow at a predetermined rate to either or both pipelines.

PROVER TANK: The prover tank is mounted between the two ACT skids. The meters are proved by filling this prover tank behind the flow-rate control valves in order to prove under the same conditions under which oil is normally run.

MONITOR: The BS&W cut monitor operates on a dielectric constant principle and permits only merchantable oil to pass through the meter. If the set value of 1% BS&W is exceeded, the monitor closes valve No. 7 and shuts down the charge pump and the pipeline pump. It also opens valve No. 6-A and starts the recirculating pump No. 6 and diverts the non-merchantable oil back through the treating system. As soon as the oil becomes acceptable to the monitor, the bypass closes and shipping resumes.

No. 24-59

DOCKET: EXAMINER HEARING JULY 8, 1959

OIL CONSERVATION COMMISSION, 9 a.m., MABRY HALL, STATE CAPITOL, SANTA FE

The following cases will be heard before Daniel S. Nutter, Examiner, or A. L. Porter, Jr., Secretary-Director.

CASE 1707: Application of Continental Oil Company for two non-standard oil proration units. Applicant, in the above-styled cause, seeks the establishment of two non-standard oil proration units for Delaware production, one 49.8-acre unit to consist of lots 1 and 2 of partial Section 35, Township 26 South, Range 32 East, Lea County, New Mexico, the other 49.9-acre unit to consist of lots 3 and 4 of said partial Section 35. Said units are to be dedicated respectively to a well to be located 330 feet from the North and East lines of lot 1 and to a well to be located 330 feet from the North and East lines of lot 3, all in said Section 35.

CASE 1708: Application of Continental Oil Company for permission to commingle the production from three separate leases. Applicant, in the above-styled cause, seeks permission to commingle the production from an undesignated Delaware pool from three separate leases in Sections 25, 26, and 35, Township 26 South, Range 32 East, Lea County, New Mexico, after separately metering the production from each lease.

CASE 1709: Application of Continental Oil Company for a 160-acre non-standard gas proration unit. Applicant, in the above-styled cause, seeks the establishment of a 160-acre non-standard gas proration unit in an undesignated Tubb gas pool consisting of the E/2 SW/4 and the W/2 SE/4 of Section 15, Township 20 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to applicant's Britt B-15 Well No. 9 located 1980 feet from the South and East lines of said Section 15.

CASE 1710: Application of The Atlantic Refining Company for the establishment of three non-standard oil proration units and for approval of an unorthodox oil well location. Applicant, in the above-styled cause, seeks the establishment of three 44.56-acre non-standard oil proration units in the Horseshoe-Gallup Oil Pool, the three units together to comprise all of lots 1, 2, 3, and 4 of Section 33, Township 31 North, Range 16 West, San Juan County, New Mexico, one unit to be dedicated to a well in said lot 1, another to a well in said lot 2, the other to a well in said lot 4. Applicant further seeks approval of an unorthodox location for the well in said lot 2.

CASE 1711: Application of The Atlantic Refining Company for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its State "Y" Well No. 8, located in the SE/4 NE/4 of Section 25, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to produce oil from the Justis Blinebry Pool and from the Justis Fusselman Pool through parallel strings of tubing.

CASE 1712: Application of Angels Peak Oil Company for a non-standard gas proration unit or in the alternative for a force pooling order. Applicant, in the above-styled cause, seeks the establishment of a 98.87-acre non-standard gas proration unit in the Fulcher Kutz-Pictured Cliffs Pool consisting of lots 1 and 2 of Section 10 and lots 3 and 4 of Section 11, both in Township 28 North, Range 11 West, San Juan County, New Mexico said unit to be

CASE 1712 (continued) dedicated to applicant's Angels Peak Well No. 5, located 285 feet from the North line and 1520 feet from the West line of said Section 11. Applicant proposes, in the alternative, to force pool all interests in the above-described acreage in said Fulcher Kutz-Pictured Cliffs Pool.

CASE 1713: Application of El Paso Natural Gas Company for a gas-gas dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Hancock Well No. 3, located in the SW/4 SW/4 of Section 22, Township 28 North, Range 9 West, San Juan County, New Mexico, in such a manner as to produce gas from the Aztec-Pictured Cliffs Pool and to produce gas from the Blanco-Mesaverde Pool through the casing-tubing annulus and tubing respectively. Applicant proposes to utilize a retrievable-type packer in said well.

CASE 1714: Application of John H. Trigg for an order authorizing a pilot water flood project, for capacity allowables for seven wells in said project area, and for establishment of an administrative procedure for expansion of said project and for granting capacity allowables. Applicant, in the above-styled cause, seeks an order authorizing it to institute a pilot water flood project in the Caprock-Queen Pool in Chaves County, New Mexico. Applicant proposes to inject water into the Queen formation through 4 wells located in Sections 4 and 5, Township 14 South, Range 31 East. Applicant also seeks capacity allowables for seven wells in said project. Applicant further seeks the establishment of a procedure whereby the project area may be expanded and capacity allowables granted without notice and hearing.

CASE 1715: Application of Gulf Oil Corporation for permission to install a lease automatic custody transfer system. Applicant, in the above-styled cause, seeks an order authorizing it to install automatic custody transfer equipment to receive and measure the oil produced from its B. V. Culp Lease consisting of the SW/4 NW/4, E/2 NW/4, and the NE/4 of Section 19, Township 19 South, Range 37 East, Lea County, New Mexico.

CASE 1716: Application of Northwest Production Corporation for an oil-gas dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its "S" Lease Well No. 15-11, located in the NE/4 NE/4 of Section 11, Township 24 North, Range 4 West, Rio Arriba County, New Mexico, in such a manner as to produce oil from an undesignated Gallup oil pool and the production of gas from an undesignated Dakota gas pool through parallel strings of tubing.

CASE 1717: Application of Pan American Petroleum Corporation for an exception to the "No-Flare" provisions of Order No. R-1237. Applicant, in the above-styled cause, seeks an exception to the requirement in Order No. R-1237 that no casinghead gas be flared or vented from any well within the defined limits of the Otero-Gallup Oil Pool or within one mile therefrom for its Jicarilla Tribal 35 Well No. 1, located in the NW/4 SW/4 of Section 35, Township 25 North, Range 5 West, Rio Arriba County, New Mexico.

CASE 1718: Application of Samedan Oil Corporation for an unorthodox oil well location. Applicant, in the above-styled cause, seeks an order authorizing an unorthodox oil well location in the Kemnitz-Wolfcamp Pool for a well to be located 660 feet from the South and East lines of Section 20, Township 16 South, Range 34 East, Lea County, New Mexico, in exception to the spacing requirements for said pool as promulgated by Order No. R-1011.

CASE 1719: Application of Sinclair Oil & Gas Company to commingle the production from several separate pools. Applicant, in the above-styled cause, seeks authority to commingle the production from the Penrose-Skelly Pool and the Paddock Pool from all wells on its Brunson lease comprising the NW/4 SW/4 of Section 3 and the W/2 SE/4 of Section 4, Township 22 South, Range 37 East, Lea County, New Mexico. Applicant further seeks permission to commingle the production from the Hare Pool, Drinkard Pool and Tubb Gas Pool from all wells on said lease.

CASE 1720: Application of Skelly Oil Company for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its W. P. Saunders Well No. 1, located in the SW/4 SE/4 of Section 11, Township 26 North, Range 11 West, San Juan County, New Mexico, in such a manner as to produce oil from the Gallegos-Gallup Oil Pool and to produce oil from an undesignated Dakota pool through parallel strings of tubing.

CASE 1721: Application of Great Western Drilling Company for an automatic custody transfer system, for permission to commingle the production from separate leases, for permission to produce more than 16 wells into a common tank battery, and for an administrative procedure whereby wells may be produced excess of top unit allowable. Applicant, in the above-styled cause, seeks an order authorizing installation of an automatic custody transfer system and for permission to commingle the Caprock-Queen Pool production from more than 16 wells located on separate leases within the confines of the North Central Caprock Queen Unit Area in Township 13 South, Ranges 31 and 32 East, Lea and Chaves Counties, New Mexico. Applicant further proposes the establishment of an administrative procedure whereby wells in said Unit Area may be permitted to produce in excess of top unit allowable for said Caprock-Queen Pool.

ig/

GREAT WESTERN drilling co.
Midland Texas

1959 JUN 19 AM 8:31

R. C. TUCKER, PRES.

June 17, 1959

PHONE MU 2-5241
ADDRESS REPLY TO:
BOX 1659
MIDLAND, TEXAS

Re: North Central Caprock Queen Unit
Lea & Chaves Counties, New Mexico

Oil Conservation Commission
Santa Fe, New Mexico

Gentlemen:

We enclose three (3) plats covering the North Central Caprock Queen Unit.

It is requested that these plats be placed with the Application for Commingling and Automatic Custody Transfer Application made by S. E. Christy with Hervey, Dow & Hinkle for Great Western Drilling Company.

Yours very truly,

GREAT WESTERN DRILLING COMPANY

S. H. Snoddy
Land Manager

SHS:mc
Encl.

Send order to Sim Christy + to John Hampton Box 1659 Midland

MEMBER OF ODC

Order mailed 6-25-59

July 8th

MAIN OFFICE OCC

1959 JUN 17 AM 8:43

BEFORE THE OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

APPLICATION OF GREAT WESTERN DRILLING COMPANY FOR AUTHORITY TO COMMINGLE THE PRODUCTION FROM SEPARATE LEASES AND TO PRODUCE MORE THAN SIXTEEN WELLS INTO A COMMON TANK BATTERY, AND TO INSTALL AUTOMATIC CUSTODY TRANSFER INSTALLATIONS IN CONNECTION WITH SUCH COMMINGLING AND PRODUCTION, ALL WITHIN THE EXTERIOR BOUNDARIES OF THE NORTH CENTRAL CAPROCK QUEEN UNIT AREA IN THE CAPROCK QUEEN FIELD IN CHAVES AND LEA COUNTIES, NEW MEXICO

CASE NO. 1721

Comes now the Applicant, Great Western Drilling Company, whose address is P. O. Box 1659, Midland, Texas, and states:

1. That Applicant is the operator of the North Central Caprock Queen Unit Agreement, which has heretofore been approved by the Commission in Case No. 1564, Order No. R-1311, dated December 17, 1958.

2. That the area embraced in said Unit Agreement is located in Chaves and Lea Counties, New Mexico, and is more particularly described as follows:

Township 13 South, Range 31 East, N.M.P.M.
Section 13 - All;
Section 14 - All;
Section 15 - $SE\frac{1}{4}NE\frac{1}{4}$, $E\frac{1}{2}SE\frac{1}{4}$;*
Section 24 - $NW\frac{1}{4}NW\frac{1}{4}$;

Township 13 South, Range 32 East, N.M.P.M.
Section 17 - $N\frac{1}{2}NW\frac{1}{4}$;
Section 18 - $W\frac{1}{2}$, $NE\frac{1}{4}$;
Section 19 - $NW\frac{1}{4}NW\frac{1}{4}$;

containing 2,040 acres, more or less.

That there are large number of leases embracing said lands which are owned by numerous working interest owners; that subject only to the comments herein contained, all of such working interest owners have effectively committed their leases to said Unit Agreement.

That all of said lands, except the $SE\frac{1}{4}NE\frac{1}{4}$, $E\frac{1}{2}SE\frac{1}{4}$, Section 15, T. 13 S., R. 31 E., N.M.P.M., are owned by the State of New Mexico; that

*to be committed effective approx. July 1, 1959.

See Attached Amendment to the application

the SE¼NE¼, E½SE¼, of said Section 15 is owned by the United States of America. That as a result of the aforementioned Unit Agreement the ownership of all royalty, overriding royalty and working interest is common throughout the entire above described premises.

3. Applicant requests permission to commingle the production from all leases within the exterior boundaries of the above described Unit Area and in support of this request states that it is the belief of the Applicant that such commingling will neither cause waste nor impair correlative rights. All production so proposed to be commingled is produced from the Queen Sand, defined in said Unit Agreement as a member of the Queen formation of the Guadalupe Series, a part of the Permian System, which is found at 3,050 feet to 3,066 feet in the Gulf Oil Corporation, State of New Mexico, "BMC" No. 1 Well, located in the SE¼SE¼ of Section 23, T. 13 S., R. 31 E., N.M.P.M.; that all such production is uniform and similar in composition, gravity, and component parts.

4. As an exception to Rule 309(a) of the Commission Rules, applicant further requests authority to transport oil from the unitized formations from the various leases within the exterior boundaries of the Unit Agreement prior to such oil having been received and measured in tanks located on the individual leases. Applicant believes and states that adequate tankage and other equipment can be installed so that production from the aforedescribed Unit Area can be accurately determined at reasonable intervals without separately measuring such oil in tanks located on the individual leases. In this connection it is proposed to transport such unitized oil from as many as 51 wells within the Unit Area to one central location within the Unit Area for the purpose of receiving and measuring such production. Appropriate lines will be

laid from each well into the central gathering system, and a plat thereof will be submitted at the hearing upon this application.

5. Applicant further requests the approval of the installation of an automatic custody transfer system to be installed within the Unit Area for the purpose of receiving, treating, measuring, and marketing of unitized oil produced within the area embraced in said Unit Agreement. Applicant states that similar automatic custody transfer systems have heretofore been approved by the Commission, and a diagrammatic sketch of the proposed system will be presented at the hearing on this application. Applicant believes and states that the granting of permission to install such automatic custody transfer system will neither cause waste nor impair correlative rights, that such system contains adequate testing and measuring equipment, including positive displacement meters which can be calibrated against a test tank of measured volume, and will in all things be in the interest of conservation.

6. Applicant offers to comply with all reasonable rules of the Commission relative to the testing, storage and metering of the facilities requested to be approved in this application, and to file all required reports in connection therewith.

Applicant, therefore, respectfully requests that this Application be set before and Examiner Hearing at Santa Fe, New Mexico, and that upon such a hearing, that Applicant as Unit Operator of the North Central Caprock Queen Unit Agreement be granted authority to:

1. Commingle the production from separate leases in the North Central Caprock Queen Unit Agreement Area situated in the Caprock Queen Field in Chaves and Lea Counties, New Mexico; and,

2. Produce all unitized oil within the North Central Caprock Queen Unit Area into a common tank battery; and,

3. Install an automatic custody transfer system for the receipt treatment, measurement, and marketing of all unitized oil produced within the North Central Caprock Queen Unit Agreement Area.

DATED this 17th day of June, 1959.

GREAT WESTERN DRILLING COMPANY

By S. B. Christy, IV., ~~individually~~
for Hervey, Dow & Hinkle, as a
member of the firm
P. O. Box 547
Roswell, New Mexico

Attorneys for the Applicant

MAIN OFFICE OCC

1959 JUN 22 AM 8:36

BEFORE THE OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

APPLICATION OF GREAT WESTERN DRILLING COMPANY FOR AUTHORITY TO COMMINGLE THE PRODUCTION FROM SEPARATE LEASES AND TO PRODUCE MORE THAN SIXTEEN WELLS INTO A COMMON TANK BATTERY, AND TO INSTALL AUTOMATIC CUSTODY TRANSFER INSTALLATIONS IN CONNECTION WITH SUCH COMMINGLING AND PRODUCTION, ALL WITHIN THE EXTERIOR BOUNDARIES OF THE NORTH CENTRAL CAPROCK QUEEN UNIT AREA IN THE CAPROCK QUEEN FIELD IN CHAVES AND LEA COUNTIES, NEW MEXICO

CASE NO. 1721

SUPPLEMENTAL REQUEST

Comes now the Applicant, Great Western Drilling Company, whose address is P. O. Box 1659, Midland Texas, and states:

1. That previously, on the 18th day of June, 1959, Applicant filed a request for authority to commingle the production from separate leases and to produce more than sixteen wells into a common tank battery, and to install automatic custody transfer installations in connection with such commingling and production, all within the exterior boundaries of the North Central Caprock Queen Unit Area in the Caprock Queen Field in Chaves and Lea Counties, New Mexico.

2. Applicant now desires to supplement the above application to add the following:

APPLICANT FURTHER PROPOSES THE ESTABLISHMENT OF AN ADMINISTRATIVE PROCEDURE WHEREBY WELLS IN THE UNITIZED AREA MAY BE PERMITTED TO PRODUCE IN EXCESS OF TOP UNIT ALLOWABLE FOR SAID CAPROCK QUEEN POOL

Dated this 19th day of June, 1959.

GREAT WESTERN DRILLING COMPANY

By _____
S. B. Christy, IV., individually
for Hervey, Dow & Hinkle, as a
member of the firm
P. O. Box 547
Roswell, New Mexico

Attorneys for the Applicant