

CASE 4555: Application of BTA OIL
PRODUCERS FOR EXPANSION OF A
PRESSURE MAINTENANCE PROJECT.

Case Number
4555

Application

Transcripts

Small Exhibits

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 16, 1971

EXAMINER HEARING

IN THE MATTER OF:)
)
)

Application of BTA Oil Producers)
for expansion of a pressure)
maintenance project, Lea County,)
New Mexico.)

Case No. 4555

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING

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1 MR. NUTTER: Call next Case Number 4555.

2 MR. HATCH: Case 4555. Application of BTA Oil
3 Producers for expansion of a pressure maintenance project,
4 Lea County, New Mexico.

5 MR. KELLAHIN: If the examiner please, Jason Kellahin
6 Kellahin & Fox, appearing for the applicants. We have one
7 witness I would like to have sworn, please.

8 (Witness sworn)

9 MR. KELLAHIN: If the examiner please, the docket
10 on this case, and I presume the advertising was listed to
11 these wells, conversion of water injection, it is Bond Wells
12 Number 2 and 3, and that should have been the Bond Well Number
13 2 and the Northcut Number 3.

14 The location of the wells, however, are correct, and
15 I don't think it would require readvertising.

16 MR. NUTTER: I think as long as we have the location
17 that solves the problem.

18 MR. KELLAHIN: It would change nothing in the matter
19 of the application.

20 JERRY I. MORITZ
21 having been first duly sworn, testified upon his oath as
22 follows:

23 DIRECT EXAMINATION

24 BY MR. KELLAHIN:

25 Q Would you state your name please?

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1 A My name is Jerry Moritz.

2 Q M-o-r-i-t-z; is that correct?

3 A Right.

4 Q By whom are you employed and in what position, Mr. Moritz?

5 A I am employed by BTA Oil Producers as secondary recovery
6 engineer.

7 Q Have you testified before the Oil Conservation Commission
8 as an engineer and made your qualifications a matter
9 of record?

10 A Yes, I have.

11 MR. KELLAHIN: Are the witness' qualifications
12 acceptable?

13 MR. NUTTER: Yes, they are.

14 Q (Mr. Kellahin continuing) Mr. Moritz, are you familiar
15 with the application of BTA Oil Producers in Case 4555?

16 A Yes.

17 Q What is proposed by the application in this case?

18 A BTA is proposing and asking that they be allowed to expand
19 their project known as the Vada Bond Pressure Maintenance
20 Project.

21 We propose to expand it by the addition of three
22 more injection wells into the Bough "C".

23 This project was approved by the Commission on
24 February 8, 1971, under Order Number R-4098. BTA made
25 the application at that time as a one well Bough "C"

1 project, and after continuous injection from that time
2 to the present, we believe we have about accomplished all
3 we can with one injection well.

4 And likewise, in the original order we proposed to
5 use produced Bough "C" water. However, it is becoming
6 apparent that we will not be able to continue use of this,
7 so we are proposing in this application to use what is
8 called the Bough "D", which we believe contains water.

9 Q Now, are you running out of produced water? Is that
10 your problem?

11 A Yes. We are running out of water.

12 Q And you need a new water source?

13 A Yes.

14 Q Now, insofar as the order entered by the Commission is
15 concerned, it had a provision for the addition of injection
16 wells by administrative procedure.

17 Is it because of this change of the water supply that
18 you need to have a hearing in this case?

19 A Yes. Essentially, the application or the approval in
20 February did grant us permission to add additional
21 injection wells by administrative approval, and like I
22 pointed out before, we had planned to use surface water.

23 However, our investigations show that this amount
24 of water available through produced water is not going
25 to be sufficient to add three more additional injection

1 wells.

2 Q Is there any other reasonable available source of water in
3 this area?

4 A There is other water available. It is in the form of
5 produced water. There is on this Bough "C" water that is
6 produced.

7 However, the quantity is very low, and would require
8 considerable expenditure to get it, and as we have seen
9 in this one well piloted, it declined so rapidly that we
10 do not feel we can go after more.

11 There is Devonian water available, some, oh, ten
12 miles to the southeast, but we are not quite prepared to
13 make that big of an expenditure to go after that water
14 at this time.

15 Q Now, referring to what has been marked as the applicant's
16 Exhibit Number 1, would you identify that exhibit?

17 A Exhibit Number 1 is a land plat. Actually, this is just
18 another copy of the exhibit presented in February.

19 It shows our approved project area in the dashes.
20 The original injection well, which is BTA's 685 limited
21 Bond Number 5, the original injection well is shown as
22 a red triangle.

23 The three proposed additional injection wells are
24 shown as yellow triangles.

25 Q Now, referring to what has been marked as Exhibit Number 2,

1 would you identify that exhibit?

2 A Exhibit Number 2 is a plot of injection volume in barrels
3 of water per day versus time.

4 Likewise, on the curve is a plot of the cumulative
5 water injected versus time.

6 The cumulative is the red circles. As you can see,
7 we started injecting about February 9th, and we maintained
8 the injection rate at about 1500 barrels of water a day
9 for approximately two weeks there.

10 During this time we checked our equipment to make
11 sure it was working, and the well was in a condition to
12 where it can take the water.

13 After this two week period we pushed the injection
14 rate on up to about 7000 barrels. You can see it held
15 there for some two weeks, and then we had a rather drastic
16 drop in the rate, and at this time we found that our
17 system would not sustain a 7000 barrels, so we had
18 reduced our salt water disposal system such that we could
19 get on up to a higher rate, and you can see we
20 subsequently went up to about 9000 barrels.

21 And sporadically we held that til about the 27th of
22 April, at which time the rate dropped to slightly over
23 7000 barrels, and we have been able to maintain the rate
24 there ever since.

25 Cumulative wise, we have injected 745,000 barrels of

1 water to June 4, 1971.

2 Q Now, what about your pressure, injection pressure, Mr.
3 Moritz?

4 A I did not show injection pressures on here.

5 However, our injection pressures have been ranging
6 from approximately eighteen to twenty inches of mercury
7 vacuum.

8 Q In other words, you have no pressure taking on a vacuum,
9 and it has continued to do so in spite of the high volume
10 of water you are using.

11 A Yes. Periodically we do have a little pressure of ten
12 pounds, but we have found this to be normally just scale
13 and parafin plugging up perforations, and is easily removed
14 with acid.

15 Q Now, referring to what has been marked as Exhibit Number
16 3, would you discuss that exhibit?

17 A Exhibit Number 3 is a plot of cumulative net reservoir
18 voidage in thousands of barrels versus time.

19 As the first point here is shown, as the 1st of
20 February, this is the amount of oil, water, and reservoir
21 equivalents of gas that we had produced out of this area
22 directly offsetting the Bond Number 5.

23 I might just point out the area that it does cover.
24 It covers all of section four, the east half of section
25 five, and the north half of section nine.

1 The reason I point this out, I have another curve
2 that is very similar that covers a different area, but
3 we felt that this was the area that Bond Number 5 might
4 ultimately affect, so we present this plot as only a
5 review of what we have done.

6 As you can see, our withdrawal rates, net reservoir
7 withdrawal rates are greater or have been greater than our
8 injection up to the month of April.

9 In April we did show a slight decrease in the net
10 cumulative, and have shown it in May, and we are
11 predicting that our injection will exceed our production
12 in the month of June.

13 MR. NUTTER: Now, I don't understand this exhibit,
14 Jerry.

15 THE WITNESS: Okay.

16 MR. NUTTER: Now, this is net voidage. In other
17 words, what you are depicting here is the difference between
18 the amount that is withdrawn and the amount that you are
19 injecting?

20 THE WITNESS: Right.

21 MR. NUTTER: Each month?

22 THE WITNESS: Right, right.

23 MR. NUTTER: And the area that you are withdrawing
24 from and figures into the net voidage would be the wells in
25 the east half of five, all of four and the north half of nine?

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1 THE WITNESS: Yes.

2 MR. NUTTER: So you are taking the total volume of

3 withdrawals in that area?

4 THE WITNESS: Yes.

5 MR. NUTTER: And then subtracting from that the

6 amount of injection --

7 THE WITNESS: Yes.

8 MR. NUTTER: -- into this well?

9 THE WITNESS: Yes.

10 MR. NUTTER: And then you are depicting your net

11 voidage?

12 THE WITNESS: Right. Now, we did start at

13 approximately 6,000,000 barrels. The point that we started

14 at was 6,000,000 barrels. In other words --

15 MR. NUTTER: And as long as this is going up, you

16 are not making any headway?

17 THE WITNESS: Right.

18 MR. NUTTER: But as soon as that curve starts coming

19 down, you are getting ahead of withdrawal?

20 THE WITNESS: Yes. And of course, this is one point

21 I would like to make with this curve here is the difficulty

22 of a one well project attempting to overcome this tremendous

23 withdrawal rate. It is almost impossible to do, even though

24 we have maintained probably overall a 7000 barrel a day

25 injection rate.

1 We have still not been able to do it.

2 MR. NUTTER: Have you ever determined what the
3 maximum on this well would take as far as injection is concerned?

4 THE WITNESS: Yes.

5 MR. NUTTER: What the total --

6 THE WITNESS: It is approximately 11,000 barrels of
7 water a day. This is on vacuum.

8 MR. NUTTER: But you never have put that much in it
9 yet, have you?

10 THE WITNESS: No. We have not been able to do it.

11 MR. NUTTER: Haven't had the water?

12 THE WITNESS: Just haven't been able to get the
13 water together long enough to sustain it, and now I would say
14 it would be impossible on our part to tie in enough system
15 to be able to do it.

16 MR. NUTTER: I see.

17 Q (Mr. Kellahin continuing) Now, does that indicate -- at
18 the original hearing I believe there was some discussion
19 of the possibility of channeling and other problems that
20 might arise from the injection.

21 Does that indicate you have had that situation?

22 A No, it doesn't. We have not had any indication of
23 channeling, direct communications or anything of this
24 type.

25 Q And you have no indications of a directional permeability

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1 in this reservoir, either, do you?

2 A No. We do not. We thought there was a possibility, and
3 we, of course, at the original hearing discussed this
4 possibility, but we have had no indication that there is.

5 I would like to make a comment that we had thought
6 there was a possibility, a good possibility, that the
7 Vug System fuel thing of it that way in this reservoir
8 might fill up with water, and you would have an
9 immediate breakthrough of water then.

10 This point in our predictions should have been
11 reached at about 393,000 barrels. We, as you can see,
12 were on up above this almost twice.

13 Now, we still have not seen water breakthrough, so
14 we believe that we are filling something other than the
15 Vug System.

16 Q Now, this exhibit does indicate, though, that it is
17 necessary to inject additional amounts of water?

18 A Yes. Yes, very definitely.

19 Q Now, referring to what has been marked as Exhibit Number
20 4, would you identify that exhibit?

21 A Exhibit Number 4 is a continuation of an exhibit presented
22 in the February hearing, an update.

23 We have had three additional pressures shown here.
24 They are actually shown as only two points, because we
25 averaged them on a month's basis, but again, you can see

1 that the pressure has continued to go down, and we think
2 this is a further indication that we are not effectively
3 affecting the reservoir.

4 MR. NUTTER: Not getting enough injection?

5 THE WITNESS: Not enough fluids.

6 Q (Mr. Kellahin continuing) Now, referring to Exhibit
7 Number 5, would you discuss that one?

8 A Exhibit Number 5, which is in two pages, is another plot
9 from the February hearing. It is just barely brought up
10 to date. This is the total project area performance
11 curve.

12 Again, you can see that the production, oil
13 production has continued to decline at a fairly rapid
14 rate, and likewise, the water, now, it is somewhat
15 curious that the gas is somewhat stabilized.

16 It is down from its peak, but it is stabilizing
17 there on this point.

18 Q Now, referring to the group of exhibits numbered 6 through
19 18, would you discuss those, please?

20 A Exhibits 6 through 18 are individual lease plots that
21 were developed. Exhibit Number 5 is a total of all of
22 these exhibits, but these are individual lease plots, and
23 they are just updated to show mainly that we have not
24 affected the reservoir and not stimulated the production
25 in any apparent way.

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1 The first two, 7, 6, 7 and 8 -- excuse me, and 9,
2 are the direct offset leases, and again, not any of them
3 show any response to this injection.
4 The others are just of the other leases contained
5 within the project area.
6 Q Maybe I am not looking at it right, but where is the lease
7 identified on these exhibits?
8 A The leases are identified at the top.
9 Q I see.
10 A The BTA producers.
11 Q I see.
12 A The number of wells on the leases are also shown there.
13 Q Now, the exhibits numbered 2 through 10 in summary, then,
14 are indicating that there is really no noticeable effect
15 from this injection program; is that correct?
16 A Yes. That is correct.
17 Q And again, indicate that you need to increase your order
18 injection if you are going to determine whether this is
19 a practical program?
20 A Yes.
21 Q So you are still in a pilot stage; is that correct?
22 A Yes.
23 Q Now, referring to what has been marked as Exhibit 19,
24 would you identify that exhibit?
25 A Exhibit 19 is another cumulative net reservoir voidage

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1 plot versus time.

2 However, this is for what we are calling the expanded
3 area. We have made this plot to show what we think would
4 happen if we were granted the additional three injection
5 wells.

6 Now, I might point out what areas this would include.
7 This one includes all of the wells in section four, five,
8 the north half of section nine, and you can see from here
9 that this curve at its beginning is approximately
10 2,000,000 barrels greater than the previous curve that I
11 presented, which I believe, is the Exhibit Number 3.

12 Likewise, you can see that the injection from Bond
13 Number 5 only has not affected it until about May, and
14 again, we are predicting that June will slightly exceed
15 the withdrawal rates.

16 I have shown here as of July 1 the addition of the
17 three new injection wells. We believe that if this hearing
18 is granted relatively quick, that we can have this work
19 done by July 1st. We are predicting that we will be able
20 to inject 25,000 barrels of water per day for the four
21 wells, and that is what this dashed curve represents, a
22 decrease of the net voidage by 25,000 barrels.

23 Q Now, Mr. Moritz, you have proposed in this application
24 to use water from the Bough "D" formation to inject into
25 the Bough "C"? Is there any evidence in the area of this

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1 project that the "BD" formation is productive in water?

2 A Yes. I made a study in approximately six-mile radius
3 around our project area here to determine if the Bough "D"
4 did have water, and if its permeability would be great
5 enough to give us the kind of water we want.

6 Exhibit Number 20 is a tabulation of most of the
7 DST's that I found in this six-mile radius.

8 As you can see, most of these wells on DST recover
9 about 1600 to 7000 barrels of feed of water of a drill
10 stem test.

11 Now, the Bough "D" kind of lost its identity in this
12 area, so I included only tests that were at least fifty
13 feet below, below the "B", "C", and not greater than 150
14 feet below the Bough "C", which we believe will cover the
15 major portion of the Bough "D".

16 Q Now, your Exhibit 20 shows the tests on all these wells;
17 is that correct?

18 A Yes. I might point out that most of the tests show that
19 the reservoir pressure in the Bough "D" was 3500 to 3800.
20 We confirmed this on one of our wells, the Bond Number 4,
21 which we drilled in October of 1969 had 468.

22 We inadvertently drilled into the "BD" and tested it.
23 It is shown as the second test, and we recovered 7510 feet
24 of salt water.

25 We had no shows. We had a sixty-minute final shut-in

1 of 3547 pounds.

2 Q Is there any oil production or gas production from the
3 Bough "D" in this area?

4 A I have examined the area, and I know of no well that has
5 produced or is producing from the Bough "D".

6 Every indication we have is that it contains nothing
7 but water.

8 MR. NUTTER: You have never seen a drill stem test,
9 either, that shows any hydro-carbon?

10 THE WITNESS: No. No tests.

11 Q (Mr. Kellahin continuing) Now, referring to what has been
12 marked as Exhibit Number 21, would you identify that
13 exhibit?

14 A Exhibit number 21 is a schematic drawing of BTA Oil
15 Producers 685 Limited Bond Number 4.

16 There is one of the wells that we propose to convert
17 to injection.

18 Q And does that show the completion date you will use?

19 A Yes. It shows the completion that we are proposing to use,
20 as I pointed out on this sketch on Exhibit 20 of the
21 Bough "D" that we had tested the Bough "D" in this well,
22 and we set pipe below the Bough "D".

23 We are proposing to go do this well first, since it
24 would require only drilling out a cement plug, and
25 perforating the Bough "D" interval and hooking up our

1 equipment as shown here, essentially, the equipment
2 consists of just tubing on a Packer with some special
3 equipment in the tubing perforations in the tubing to
4 allow the water to flow free Bough "D" up through this
5 special equipment into the perfs and out into the Bough "C".

6 Q The water won't come to the surface, then?

7 A No, it will not.

8 Q You have a later exhibit which shows this?

9 A Yes. I have a later exhibit which shows in detail this.

10 Q Now, referring to Exhibits 22 and 23, are those similar
11 exhibits to 21?

12 A Yes. Exhibits 22 and 23 are again, the other two injection
13 wells that we propose.

14 They differ slightly in that we will have to drill
15 these two wells deeper to the Bough "D". We propose to
16 run a four inch plus joint liner with a packoff-type
17 hanger, and then set our Packer permanent Packer on
18 tubing inside of this liner.

19 We'll have to perforate this Bough "D", but otherwise,
20 it is essentially the same as Exhibit 21.

21 Q Now, does Exhibit Number 24 show the equipment that will
22 be used for controlling the injection rate in these wells?

23 A Yes. Exhibit Number 24 is a blown up schematic of the
24 down hole equipment to be run in all three wells with the
25 exception of Bond Number 4.

1 Bond Number 4 will not have a liner set in it since
2 its casing is already through the Bough "D", so I showed
3 this well since it will be the most complicated one.

4 Again, it shows that we will be setting a four-inch
5 plus joint liner through the Bough "D". We will tie into
6 the five and a half inch production casing that we
7 previously ran, and this liner will be packed off at the
8 top where there will be no flow behind the liner.

9 We propose then to perforate the Bough "D" through
10 its productive interval, and set a Model F permanent-type
11 Packer inside this four-inch liner.

12 This Packer will have what is called a lock set seal
13 assembly, which will lock in place.

14 However, it can be removed with special tools. On
15 top of this seal assembly we plan to run what is called
16 an on and off tool.

17 This tool will allow us to remove what is colored
18 green on this. With the tubing, the other portion will
19 remain in the hole.

20 We propose to set a wire-lined check back in the top
21 of this on and off tool. This will prevent fluids
22 flowing free, Bough "C" into the tubing, and back down
23 into the Bough "D".

24 Q Now, will that control the flow of water? Can you
25 regulate the flow of water from the one zone to the other?

1 A We could regulate it, yes. We are not proposing to
2 regulate it.

3 Q Do you think it would be necessary?

4 A No. We do not think so. We have made an attempt to
5 calculate what the rate of flow between the Bough "D" and
6 the Bough "C" would be.

7 We have, of course, a very good information from
8 drill stem tests in this area, and we believe that the
9 flow rate between the Bough "D" and the Bough "C" will be
10 about 6000 barrels of water a day.

11 Q Is there any method whereby you could calculate that flow?

12 A Yes. We have two methods that we would like to try. One,
13 we are sure will work. That would be a means of going in
14 there and making a spinner survey tool just below the
15 perforated nipple shown here. There is a short space there.

16 Actually, it would probably be twenty or thirty feet
17 long, and we can actually measure the volume of water
18 going out into the Bough "C" at that time.

19 We believe that we have one other method that we can
20 use. We feel that by knowing the size of the perforations
21 in the nipple, perforated nipple there that we will be
22 able to by running sonic logs down the casing annulus
23 and determining how high this water is standing that we
24 will be able to determine how much water is going into
25 this zone.

1 Likewise, it will give us a virtually conscious
2 record of what the bottom hole pressure is in the Bough "C",
3 which we believe is going to get important.

4 Q Now, referring to Exhibits 25, 26 and 27, would you discuss
5 those exhibits?

6 A I do not have much to say about these exhibits. These
7 are exhibits of the three well locations only three
8 proposed injection wells.

9 They merely show the tops of the various formations
10 encountered, and where we set pipe, and where we
11 perforated each one of the wells.

12 Q Now, Mr. Moritz, you have had no positive results from
13 your program up to date; is that correct?

14 A No. We have not.

15 Q But in spite of that, you still feel that the project is
16 worthwhile, and you want to continue your project on an
17 expanded basis?

18 A Yes. We feel that there is still unrecovered reserves
19 down there. We still believe in our original prediction
20 of how much oil we think the flood will recover, and are
21 perfectly willing to go with this expansion and evaluate
22 an attempt to evaluate this reservoir for floods.

23 Q Now, to summarize your testimony here, is it to the effect
24 that the production in this area is continuing to decline,
25 in your opinion, will decline to an uneconomic rate or

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1 status unless additional water is injected in this
2 formation?

3 A Yes.

4 Q And you feel that the injection will restore or at least
5 hold the production at a steady rate for some period of
6 time?

7 A Yes.

8 Q In your opinion, will correlative rights of the owners
9 in this area be protected?

10 A Yes.

11 Q Including the overriding royalty owners?

12 A Yes.

13 Q Were Exhibits 1 through 27 prepared by you or under your
14 supervision?

15 A Yes.

16 MR. KELLAHIN: At this time I would like to offer in
17 evidence Exhibits 1 through 27 inclusive.

18 MR. NUTTER: Applicant's Exhibits 1 through 27 will
19 be admitted in evidence.

20 Q (Mr. Kellahin continuing) Do you have anything else, Mr.
21 Moritz?

22 A No.

23 MR. KELLAHIN: That completes the presentation of
24 the case, Mr. Nutter.

25 MR. NUTTER: Off the record a minute.

(Whereupon, a discussion was held off the record)

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Moritz, I think you have got a lot of exhibits here, and well-prepared case and everything.

However, I thought that you were going to come up with some kind of an instrument that down hole here that you could measure the flow from one reservoir into the other.

A Mr. Nutter, we have --

Q How are you going to be able to maintain records and determine your cumulative net voidage and so forth in the absence of accurate measurement?

A Well, Mr. Nutter, we have talked to several people, Sperry Son, one, in particular, that does manufacture a down hole meter, but to be able to measure these type of volumes, they have to have at least seven-inch casing, so these are the only people that we have been able to determine that measure a down hole -- that have a down hole meter.

Q Well, what about that Baker jewel flow thing that we have for injection into two zones?

A They can control the volume that goes through that, yes. We have taken a look at this, but the thing that seems to be on this type of application, those devices require only,

1 as I understand it, about 125 pounds to open them up, and
2 you can only get so much through them.

3 In this case we would not know since we have a pretty
4 good differential. We have predicted 3500 pounds in the
5 Bough "D", and probably 900 pounds in the Bough "C".

6 We would most certainly have that much pressure, but
7 we would not know whether we were putting in 6000 barrels
8 through it or maybe 1000.

9 We would only know that we were not getting over
10 6000 barrels.

11 Q I thought that pool could be set so that you could control
12 the amount that goes there.

13 A No. Only a maximum, as I understand it, and in this
14 application, it would only be set for a maximum volume,
15 and we would not know whether we were going at the -- like
16 I say, 1000, 2000 or somewhere up to 6000.

17 This is why we plan to try using these spinner
18 surveys to get a handle on what volume we are injecting,
19 and I think they are very accurate.

20 Q Well, now, will water also be coming down the tubing here?

21 A No, no.

22 Q Total footing would be from down below?

23 A Yes. That's right.

24 Q Now, the tubing will be present, though?

25 A Yes. The tubing will be present, yes.

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- 1 Q Now, isn't it feasible, then, to run a continuous spinner
- 2 deal down through here?
- 3 A Yes. Except for they won't survey for eight hours, run
- 4 about four or five hundred dollars.
- 5 Q You can't play the spinner tool and install it permanently
- 6 in the tubing? In other words, to use it as a meter?
- 7 A I'm sure you could, but, see, this is what you would call
- 8 a logging system. It is a hole service provided, and they
- 9 come out, you know, with a big logging truck and a
- 10 multi-conductor cable.
- 11 Q There is no simple spinner survey tool that can be run on
- 12 a wire line down in here and left in place?
- 13 A No, there sure isn't. We thought of that, and, of course,
- 14 our first desire would have been to have a meter. What
- 15 they call knocking meters. They send out a pulse, and
- 16 the time between the pulse determines how much you are
- 17 injecting, but they can't get them in these wells.
- 18 Q Now, that is the one that you mentioned first?
- 19 A Yes, right.
- 20 Q The down hole meter?
- 21 A They can't get them in this casing. They have to --
- 22 Q Seven --
- 23 A Seven minimum, seven mininum for 6000 barrels of water
- 24 per day, but we believe that through correlation of these
- 25 spinner surveys with our pressure sonics down the casing,

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1 that we will be able to determine what rates were
2 reasonably accurate.

3 As you may not know, we drill stem tested every one
4 of our wells, so we have a very good handle on what kind
5 of permeability we have in all of our wells, and we
6 believe that with this data we are going to be able to do
7 it.

8 Q Well, it should be theoretically possible to calculate it?

9 A Yes.

10 Q But if it is not accurate, it would turn out, it would be
11 questionable?

12 A Well, this is what we plan to use, the spinner survey for
13 periodically to check our calculations.

14 Q How much did you say it cost to run a spinner survey?

15 A Right at five hundred dollars four, I think, they allow
16 you eight hours on their time is what they say.

17 So continuous basis would be rather expensive.

18 Q If the Commission should require a spinner survey to be
19 taken at some interval, what would be a reasonable
20 interval to confirm your calculations or to get a new
21 factor to base your calculations on?

22 A I would say that it would depend on two things. There is
23 only two things going to affect this.

24 One is going to be how rapidly the Bough "C" pressure
25 builds up.

1 Q Right.

2 A And the other will be how rapidly the Bough "D's"
3 pressure declines. From our study so far we don't see
4 that the Bough "D" is going to decline much because of
5 aerial extents of it.

6 We have had cases that the BC is not going to build
7 up very much. Obviously, we haven't seen it yet, but so
8 I would say possibly quarterly would be appropriate.

9 Q Would that impose any kind of an undue hardship or
10 quarterly test on this?

11 A I don't think so, because I think we would probably do it
12 anyway.

13 Q I see.

14 A We are sufficiently concerned or worried about the
15 floodability of this that we have been making almost all
16 efforts that we can to determine what is going on.

17 MR. NUTTER: Are there any further questions of the
18 witness?

19 MR. LE MAY: Mr. Examiner, may I ask a question as
20 an individual? William J. Le May, consulting geologist in the
21 area, project area, as well as representative of Charles B.
22 Reed and Norman L. Stevens, likewise royalty owners in this
23 area as individuals.

24 MR. NUTTER: But you are representing yourself?

25 MR. LE MAY: Myself and also Mr. Stevens and Mr. Reed.

1 They asked me to attend.

2 CROSS EXAMINATION

3 BY MR. LE MAY:

4 Q Two questions, Jerry. One is you mentioned the 6000
5 barrels a day. Is that referring to one project well?

6 A Yes.

7 Q The flow between the "D" and the "C"?

8 A Yes. Our calculations show 6000 barrels on each
9 individual well. Now, this varies a little, depending on
10 what the permeability is.

11 Q I see.

12 A Between the permeability ratio, between the two zones is
13 what it depends on.

14 Q Also your cumulative net voidage, you started out with a
15 figure -- figuring everything that was produced from that
16 well to that point, and then you carried that figure of
17 voidage, whether injection increased is over production?

18 A Oh, which exhibit are you referring to?

19 Q Well, on both of them, Jerry, on Exhibits Number --

20 MR. NUTTER: 3 and 19.

21 Q (Mr. Le May continuing) -- 3 and your projected one.

22 MR. NUTTER: 19.

23 MR. LE MAY: 19, yes.

24 Q (Mr. Le May continuing) You started out with a figure of
25 8000 or 8,000,000 barrels of voidage, so that figure, what

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1 you are starting at is really the amount of fluids that
2 were taken out of the indicated area at that point, right?

3 A Right. At February 1st.

4 Q At February 1st? So you have some cumulative production
5 that starts your chart, and then the variations from the
6 horizontal indicate either injection over production or
7 production over injection?

8 A Right. Right. Yes. We have calculated this calculation
9 or this chart --

10 Q Yes.

11 A -- is conducted and calculated on a monthly basis. We
12 know how much water we injected, naturally, on the Bond
13 Number 5.

14 We have an individual service meter, so we know how
15 much we inject each day, and at the end of the month we
16 know how much oil, water and gas we produced out of that
17 appropriate area.

18 Q Yes.

19 A And by converting this back to reservoir barrels and
20 converting the injected water back to reservoir barrels,
21 we merely subtract them, and either add or subtract off.

22 Q The horizontal would mean you are keeping even with
23 production?

24 A Right.

25 Q And what you want to do is repressure the formation?

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- 1 A Right.
- 2 Q But since the project began and you have this horizontal
- 3 roughly on Exhibit Number 3, you are just keeping base
- 4 with production, just about?
- 5 A Yes. Essentially it works out during this period here
- 6 at about 40,000 barrels a month was all we was adding.
- 7 Q Right.
- 8 A Net was all we were adding.
- 9 Q Net over the whole test period day?
- 10 A Right.
- 11 Q And yet your decline curve kept indicating that nothing
- 12 is being put in the reservoir. Where is it going?
- 13 A Right.
- 14 Q Any ideas on that or --
- 15 A Not really. The thing that we think is significant from
- 16 this is that we did not communicate through the Vug
- 17 System.
- 18 Q To this subsidy?
- 19 A Yes. Right.
- 20 Q Because I talked with Buddy on the thing, and he figures
- 21 you are going to inject the water and never see it again
- 22 and never see the response, so his theory was discussed
- 23 at some length, and if his theory was correct, you would
- 24 be injecting and never see the water, then, never see
- 25 your response, and, of course, I admire --

1 A We don't believe this.

2 Q Well, I hope you are right, naturally.

3 A We believe that we will see it. We hope -- fully hope
4 that we will see a big bank of oil, but it is not
5 uncommon or out of the realm of possibility that we will
6 have nothing but water.

7 Q Yes.

8 A Now, this is the reason I mentioned that this sonic
9 shooting down the casing is so important. We do not
10 believe that we want to get back above the original
11 bubble points. We believe --

12 Q What is the bubble point on it again?

13 A About 1800 is what we think, and we believe that if we
14 get back past this point we definitely will have an
15 unsuccessful flood, so --

16 Q Well, then, you actually agree with some Tenneco engineers
17 which you have talked to which indicate that anything
18 over 1800 points you are going to produce may be all water
19 and that 18,000 pounds you will start to feel the effect
20 of oil and gas begin to go down breaking through to the
21 well bore?

22 A Yes.

23 Q So you intend to maintain your pressure somewhere between
24 1300 and 1800 when your pilot is far enough along and
25 then your projects are far enough along to maintain this

1 equilibrium?

2 A Yes. I wish we had more encouraging results, but our
3 results -- the only encouraging results we have had is
4 that we have not had some of the things that people told
5 us was going to happen.

6 Q Just one other outside possibility. Just -- not even a
7 possibility, but there were some cases when a liaison
8 was drilled where they thought there may be some BD oil.
9 Now, this is outside of your project area? In the event
10 the Bough "D" reservoir acted similar to the Bough "C"
11 where you might be producing a hundred percent water for
12 four or five months and then you started to get some oil,
13 do you have any monitoring way of monitoring the fluid,
14 going into the "C" to see if it might change? You know,
15 the "C" has had that characteristic where you produce
16 a hundred percent water and all of a sudden you start
17 getting some oil.

18 A Well, to answer your question, I don't think we would have
19 any direct way to monitor.

20 Now, we could, since we have got tubing in this well
21 swab, at any time we wanted to, but what you are talking
22 about an I in my study here went into the completions
23 and the Bough "C", and in the liaison, and I did not find
24 cases where the Bough "D" gave up any shows.

25 Q So you coupled their minor --

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1 A I was unable to find them, and I was interested in this
2 part of it, because I wanted to know, but I didn't find
3 them.

4 Q Well, it is mainly water reservoir, but I just thought
5 it is a freak possibility, but, you know, it is an
6 outside one.

7 MR. LE MAY: That's all the questions I have.

8 MR. NUTTER: Are there any further questions of
9 Mr. Moritz? You may be excused.

10 (Witness excused)

11 MR. NUTTER: Have you already offered these?

12 MR. KELLAHIN: Yes.

13 MR. NUTTER: Did you have anything further, Mr.
14 Kellahin?

15 MR. KELLAHIN: That's all, Mr. Nutter.

16 MR. NUTTER: Does anyone have anything they wish
17 to offer in Case Number 4555?

18 MR. HATCH: The Commission has received letters from
19 Tenneco Oil Company and from Roger C. Hanks supporting the
20 applicants in this case.

21 MR. NUTTER: Did they arrive in time?

22 MR. HATCH: We will pretend they did.

23 MR. LE MAY: I have a statement. William J. Le May,
24 Le May Stevens & Reed, again, as royalty owners support the
25 applicant's request in this case.

MR. KELLAHIN: Thank you.

MR. NUTTER: If there is nothing further, we will
take Case Number 4555 under advisement.

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1 STATE OF NEW MEXICO)
 2 COUNTY OF BERNALILLO)

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

8 *Linda Malone*
 9 Court Reporter

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22 I do hereby certify that the foregoing
 23 is a complete record of the proceedings
 24 the Examiner hearing of Case No. 4555
 25 heard by me on 6/16, 1971.
[Signature] Examiner
 New Mexico Oil Conservation Commission

Blackrock Oil Company

1000 V & J TOWER - MIDLAND, TEXAS 79701 - 915 683-5691

O. DOYLE BUTLER
President

PEGGY L. HOLDEN
Office Manager

June 17, 1971

New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501
Attention: Mr. Pete Porter


71 JUN 18 PM 1 37

RE: BTA Oil Producers,
Application for Expansion of Vada
Bond Pressure Maintenance
Project Lea & Roosevelt
Counties, New Mexico.
Case #4555

Dear Sir,

Blackrock Oil Company fully supports BTA in the above styled Case.

Yours very truly,


O.D. Butler
BLACKROCK OIL COMPANY

cc: Jerry I. Mortiz
BTA Oil Producers

Petroleum Engineering, Land and Management Consultants



OIL CONSERVATION COMMISSION

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

July 7, 1971

GOVERNOR
BRUCE KING
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMijo
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 4555

Order No. R-4098-A

Applicant:

BTA Oil Producers

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

Other Mr. Bill LeMay

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. 4555
Order No. R-4098-A

APPLICATION OF BTA OIL PRODUCERS
FOR EXPANSION OF A PRESSURE
MAINTENANCE PROJECT, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 10:30 a.m. on June 16, 1971, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 7th day of July, 1971, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, BTA Oil Producers, was authorized by Order No. R-4098, dated February 8, 1971, to institute the BTA Vada Bond Pressure Maintenance Project in the Vada Pennsylvanian Pool, Lea County, New Mexico, by the injection of water into the Bough "C" formation.

(3) That the applicant seeks authority to expand said project by converting to water injection the following three wells in Township 9 South, Range 36 East:

BTA 685 Ltd. Bond Well No. 2, Unit L of Section 5,
BTA 685 Ltd. Bond Well No. 4, Unit J of Section 4,
BTA 685 Ltd. Northcott Well No. 3, Unit A of
Section 5.

-2-

CASE NO. 4555

Order No. R-4098-A

(4) That the applicant proposes to complete the above-described wells in such a manner as to cause, by means of down-hole equipment, water from the Bough "D" zone to flood the Bough "C" zone in each of said wells.

(5) That the proposed expansion of the pressure maintenance project is in the interest of conservation and may result in greater ultimate recovery of oil from the subject pool, thereby preventing waste, and will not violate correlative rights.

(6) That the proposed method of completion of the above-described three wells is feasible and in accord with sound conservation practices.

(7) That the subject application should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, BTA Oil Producers, is hereby authorized to expand its Vada Bond Pressure Maintenance Project in the Vada Pennsylvanian Pool, Lea County, New Mexico by converting to water injection the following three wells in Township 9 South, Range 36 East, NMPM:

BTA 685 Ltd. Bond Well No. 2 - Unit L of Section 5

BTA 685 Ltd. Bond Well No. 4 - Unit J of Section 4

BTA 685 Ltd. Northcott Well No. 3 - Unit A of Section 5

(2) That the applicant is hereby authorized, as to each of the above-described wells, to perforate the Bough "D" and "C" zones and complete the wells in such a manner as to cause, by means of down-hole equipment, water from the Bough "D" zone to flood the Bough "C" zone;

PROVIDED HOWEVER, that for the purposes of filing Form C-120 as required by Rule 704 of the Commission Rules and Regulations, the operator shall calculate the volumes of fluid injected monthly and shall confirm the monthly calculation by actual measurement of the volume of flow on a quarterly basis.

(3) That the subject expanded pressure maintenance project shall be governed by the provision of Rules 701, 702, 703 and 704 of the Commission Rules and Regulations insofar as said rules are not inconsistent with this order.

-3-
CASE NO. 4555
Order No. R-4098-A

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

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

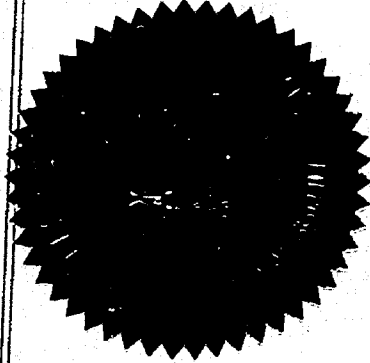
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

B. McKinnis
BRUCE KING, Chairman

Alex J. Armiijo
ALEX J. ARMIJO, Member

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

SEAL



dr/

DOCKET: REGULAR HEARING - WEDNESDAY - JUNE 16, 1971

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

- ALLOWABLE: (1) Consideration of the oil allowable for July and August, 1971;
- (2) Consideration of the allowable production of gas for July, 1971, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico for July, 1971; also presentation of purchaser's nominations for the six-month period beginning August 1, 1971, for that area.

CASE 4487: (De Novo) This case will be continued to the August 18, 1971, Regular Hearing.

- ✓ Application of Pennzoil United, Inc., for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn formation underlying the W/2 of Section 6, Township 23 South, Range 27 East, South Carlsbad-Strawn Gas Pool, Eddy County, New Mexico, said acreage to be dedicated to the Morris R. Antweil Joell Well No. 1 located 660 feet from the North line and 1980 feet from the West line of said Section 6. Also to be considered will be the cost of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

Upon application of Pennzoil United, Inc., this case will be heard De Novo under the provisions of Rule 1220.

CASE 4503: (De Novo) In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Penroc Oil Corporation and all other interested persons to appear and show cause why the intentional deviation of Penroc Oil Corporation State Well No. 2, having a surface location 360 feet from the South line and 330 feet from the East line of Section 28, Township 17 South, Range 28 East, Empire-Abo Pool, Eddy County, New Mexico, to a bottom hole location 123 feet from the South line and 149 feet from the East line of said Section 28 should be approved and why the allowable assigned to said well should not be reduced to offset any advantage gained by said bottom hole location over other producers.

Regular Hearing

Wednesday - June 16, 1971

Docket No. 12-71

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Upon application of Amoco Production Company, this case will be heard De Novo under the provisions of Rule 1220.

THE FOLLOWING CASES WILL BE HEARD BEFORE DANIEL S. NUTTER, EXAMINER, OR ELVIS A. UTZ, ALTERNATE EXAMINER, IN THE OIL CONSERVATION COMMISSION CONFERENCE ROOM ON THE SECOND FLOOR OF THE LAND OFFICE BUILDING AT 10:30 a.m.:

CASE 4547: Application of Hanson Oil Corporation for salt water

~~(Case 4537 - R-4747)~~ disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers formation in the perforated interval from 4009 feet to 4036 feet in its Mescalero Ridge Unit "35" Well No. 17 located in Unit G of Section 35, Township 19 South, Range 34 East, Pearl-Seven Rivers Pool, Lea County, New Mexico.

CASE 4548:

~~(Case 4434 - R-4058)~~ Application of Hanagan Petroleum Corporation for creation of a new gas pool and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Morrow gas pool for its Catclaw Draw Unit Well No. 1-Y located in Unit F of Section 26, Township 21 South, Range 25 East, Eddy County, New Mexico. Applicant further seeks the promulgation of special rules therefor, including a provision for 640-acre spacing units.

CASE 4549:

~~(Case 4358 - R-3985)~~ Application of Tom L. Ingram for unorthodox gas well location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location for his Light Well No. 1 located 1980 feet from the South line and 660 feet from the East line of Section 15, Township 8 South, Range 37 East, Bluit-San Andres Associated Pool, Roosevelt County, New Mexico, the S/2 of said Section 15 to be dedicated to the well.

CASE 4550:

~~(Case 4507 - R-4114)~~ Application of Roger C. Hanks for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation at approximately 10,500 feet in a well located 660 feet from the North and West lines of Section 5, Township 20 South, Range 25 East, Eddy County, New Mexico.

CASE 4551:

~~(Case 4445 - R-4045)~~ Application of Roger C. Hanks for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 of the Commission Rules and Regulations to drill a well at an unorthodox gas well location 1900 feet from the South line

Regular Hearing
Wednesday - June 16, 1971
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Docket No. 12-71

(Case 4551 continued)

and 850 feet from the West line of Section 35, Township 20 South, Range 24 East, undesignated Pennsylvanian gas pool, Eddy County, New Mexico, the S/2 of said Section 35 to be dedicated to the well.

CASE 4552: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider the amendment of Rule 506 of the Commission Rules and Regulations by deleting therefrom the provision that all gas produced with the current oil allowable determined in accordance with Rule 506 shall be deemed to have been lawfully produced.

CASE 4554: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Henry S. Birdseye and all other interested persons to appear and show cause why the following-described wells in the Chaco Wash-Mesaverde Pool in Township 20 North, Range 9 West, McKinley County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

Santa Fe Railroad Wells Nos. 1, 2, 3, and 4 and in Unit P of Section 21; Well No. 6 in Unit M of Section 22; and Wells Nos. 5, 7, 8, 9, 11, and 12 in Units D, D, C, F, D, and F, respectively, of Section 27.

CASE 4555: Application of BTA Oil Producers for expansion of a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its BTA Vada Bond Pressure Maintenance Project, Vada Pennsylvanian Pool, by the conversion to water injection of its Bond Wells Nos. 2 and 3 located, respectively, in Units L and A of Section 5 and its Bond Well No. 4 located in Unit J of Section 4, all in Township 9 South, Range 36 East, Lea County, New Mexico. Applicant proposes to complete the above-described wells in such a manner as to cause, by means of down-hole equipment, water from the Bough "D" zone to flood the Bough "C" zone in each of the wells.

CASE 4553: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Lea, Eddy and Chaves Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Aid-Morrow Gas Pool. The discovery well is Pennzoil United,

Regular Hearing
Wednesday - June 16, 1971

Docket No. 12-71

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(Case 4553 continued)

Inc., Aid State No. 1 located in Unit A of Section 24, Township 17 South, Range 28 East, NMPM. Said pool would comprise:

TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMPM
SECTION 24: N/2

(b) Create a new pool in Lea County, New Mexico, classified as an oil pool for Blinebry production and designated as the East Terry-Blinebry Pool. The discovery well is Mark Production Company, Conoco Federal No. 2 located in Unit J of Section 30, Township 20 South, Range 39 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 39 EAST, NMPM
SECTION 30: SE/4

(c) Extend the Arrowhead-Grayburg Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 20: NW/4

(d) Extend the North Bagley-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM
SECTION 5: SE/4

(e) Extend the Boyd-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
SECTION 10: S/2

(f) Extend the Dagger Draw-Upper Pennsylvanian Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
SECTION 30: W/2 W/2

(g) Extend the Double L-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 29 EAST, NMPM
SECTION 23: SE/4 SE/4

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM
SECTION 12: NW/4 NE/4

(h) Extend the Lea-Bone Springs Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM
SECTION 25: SW/4

(i) Extend the South McCormack-Silurian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 22: NW/4

(j) Extend the Power Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM
SECTION 32: SW/4 SW/4

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
SECTION 6: NW/4 NW/4

(k) Extend the West Sawyer-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 37 EAST, NMPM
SECTION 21: SE/4

(l) Extend the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 13: NE/4
SECTION 15: S/2 SW/4
SECTION 23: W/2

(m) Extend the Northwest Vacuum-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 5: NE/4

Docket No. 12-71

DOCKET: REGULAR HEARING - WEDNESDAY - JUNE 16, 1971

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

- ALLOWABLE: (1) Consideration of the oil allowable for July and August, 1971;
- (2) Consideration of the allowable production of gas for July, 1971, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico for July, 1971; also presentation of purchaser's nominations for the six-month period beginning August 1, 1971, for that area.

CASE 4487: (De Novo) This case will be continued to the August 18, 1971, Regular Hearing.

Application of Pennzoil United, Inc., for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn formation underlying the W/2 of Section 6, Township 23 South, Range 27 East, South Carlsbad-Strawn Gas Pool, Eddy County, New Mexico, said acreage to be dedicated to the Morris R. Antweil Joell Well No. 1 located 660 feet from the North line and 1980 feet from the West line of said Section 6. Also to be considered will be the cost of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

Upon application of Pennzoil United, Inc., this case will be heard De Novo under the provisions of Rule 1220.

CASE 4503: (De Novo)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Penroc Oil Corporation and all other interested persons to appear and show cause why the intentional deviation of Penroc Oil Corporation State Well No. 2, having a surface location 360 feet from the South line and 330 feet from the East line of Section 28, Township 17 South, Range 28 East, Empire-Abo Pool, Eddy County, New Mexico, to a bottom hole location 123 feet from the South line and 149 feet from the East line of said Section 28 should be approved and why the allowable assigned to said well should not be reduced to offset any advantage gained by said bottom hole location over other producers.

Regular Hearing

Wednesday - June 16, 1971

Docket No. 12-71

-2-

Upon application of Amoco Production Company, this case will be heard De Novo under the provisions of Rule 1220.

THE FOLLOWING CASES WILL BE HEARD BEFORE DANIEL S. NUTTER, EXAMINER, OR ELVIS A. UTZ, ALTERNATE EXAMINER, IN THE OIL CONSERVATION COMMISSION CONFERENCE ROOM ON THE SECOND FLOOR OF THE LAND OFFICE BUILDING AT 10:30 a.m.:

- CASE 4547: Application of Hanson Oil Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers formation in the perforated interval from 4009 feet to 4036 feet in its Mescalero Ridge Unit "35" Well No. 17 located in Unit G of Section 35, Township 19 South, Range 34 East, Pearl-Seven Rivers Pool, Lea County, New Mexico.
- CASE 4548: Application of Hanagan Petroleum Corporation for creation of a new gas pool and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Morrow gas pool for its Catclaw Draw Unit Well No. 1-Y located in Unit F of Section 26, Township 21 South, Range 25 East, Eddy County, New Mexico. Applicant further seeks the promulgation of special rules therefor, including a provision for 640-acre spacing units.
- CASE 4549: Application of Tom L. Ingram for unorthodox gas well location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location for his Light Well No. 1 located 1980 feet from the South line and 660 feet from the East line of Section 15, Township 8 South, Range 37 East, Bluit-San Andres Associated Pool, Roosevelt County, New Mexico, the S/2 of said Section 15 to be dedicated to the well.
- CASE 4550: Application of Roger C. Hanks for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation at approximately 10,500 feet in a well located 660 feet from the North and West lines of Section 5, Township 20 South, Range 25 East, Eddy County, New Mexico.
- CASE 4551: Application of Roger C. Hanks for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 of the Commission Rules and Regulations to drill a well at an unorthodox gas well location 1900 feet from the South line

Regular Hearing
Wednesday - June 16, 1971

Docket No. 12-71

-3-

(Case 4551 continued)

and 850 feet from the West line of Section 35, Township 20 South, Range 24 East, undesignated Pennsylvanian gas pool, Eddy County, New Mexico, the S/2 of said Section 35 to be dedicated to the well.

CASE 4552: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider the amendment of Rule 506 of the Commission Rules and Regulations by deleting therefrom the provision that all gas produced with the current oil allowable determined in accordance with Rule 506 shall be deemed to have been lawfully produced.

CASE 4554: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Henry S. Birdseye and all other interested persons to appear and show cause why the following-described wells in the Chaco Wash-Mesaverde Pool in Township 20 North, Range 9 West, McKinley County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

Santa Fe Railroad Wells Nos. 1, 2, 3, and 4 and in Unit P of Section 21; Well No. 6 in Unit M of Section 22; and Wells Nos. 5, 7, 8, 9, 11, and 12 in Units D, D, C, F, D, and F, respectively, of Section 27.

399
CASE 4555: Application of BTA Oil Producers for expansion of a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its BTA Vada Bond Pressure Maintenance Project, Vada Pennsylvanian Pool, by the conversion to water injection of its Bond Wells Nos. 2 and 3 located, respectively, in Units L and A of Section 5 and its Bond Well No. 4 located in Unit J of Section 4, all in Township 9 South, Range 36 East, Lea County, New Mexico. Applicant proposes to complete the above-described wells in such a manner as to cause, by means of down-hole equipment, water from the Bough "D" zone to flood the Bough "C" zone in each of the wells.

CASE 4552: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Lea, Eddy and Chaves Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Aid-Morrow Gas Pool. The discovery well is Pennzoil United,

Regular Hearing
Wednesday - June 16, 1971
-4-

Docket No. 12-71

(Case 4553 continued)

Inc., Aid State No. 1 located in Unit A of Section 24, Township 17 South, Range 28 East, NMPM. Said pool would comprise:

TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMPM
SECTION 24: N/2

(b) Create a new pool in Lea County, New Mexico, classified as an oil pool for Blinbry production and designated as the East Terry-Blinbry Pool. The discovery well is Mark Production Company, Conoco Federal No. 2 located in Unit J of Section 30, Township 20 South, Range 39 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 39 EAST, NMPM
SECTION 30: SE/4

(c) Extend the Arrowhead-Grayburg Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 20: NW/4

(d) Extend the North Bagley-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM
SECTION 5: SE/4

(e) Extend the Boyd-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
SECTION 10: S/2

(f) Extend the Dagger Draw-Upper Pennsylvanian Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
SECTION 30: W/2 W/2

Regular Hearing
Wednesday - June 16, 1971
-5-

Docket No. 12-71

(g) Extend the Double L-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 29 EAST, NMPM
SECTION 23: SE/4 SE/4

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM
SECTION 12: NW/4 NE/4

(h) Extend the Lea-Bone Springs Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM
SECTION 25: SW/4

(i) Extend the South McCormack-Silurian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 22: NW/4

(j) Extend the Power Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM
SECTION 32: SW/4 SW/4

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
SECTION 6: NW/4 NW/4

(k) Extend the West Sawyer-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 37 EAST, NMPM
SECTION 21: SE/4

(l) Extend the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 13: NE/4
SECTION 15: S/2 SW/4
SECTION 23: W/2

(m) Extend the Northwest Vacuum-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 5: NE/4

ROGER C. HANKS
2100 WILCO BUILDING
P. O. BOX 584
MIDLAND, TEXAS 79701

June 14, 1971

71 JUN 15 AM 8 07

A/C 915 682-4364

GPH

Oil Commission
Santa Fe, New Mexico 87501

Attn: Mr. Pete Porter

Re: Case #4555

Dear Pete:

I support these fellows all the way, and if this does not reach you in time, will call due to the Western Union strike.

Sincerely yours,

RCH
Roger C. Hanks

RCH:dv

↓
Appl. of BTA for pressure maintenance project

TENNECO OIL COMPANY A Major Component of Tenneco Inc.
P.O. BOX 1031 • 1800 WILCO BUILDING • MIDLAND, TEXAS 79701



JUN 17 1971

[Handwritten signature]

June 11, 1971

Case 4555

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

Attention: Mr. Pete Porter

Gentlemen:

Tenneco Oil Company, as an operator in the Vada Field, Lea and Roosevelt Counties, New Mexico, wishes to support BTA's application for their pressure maintenance project.

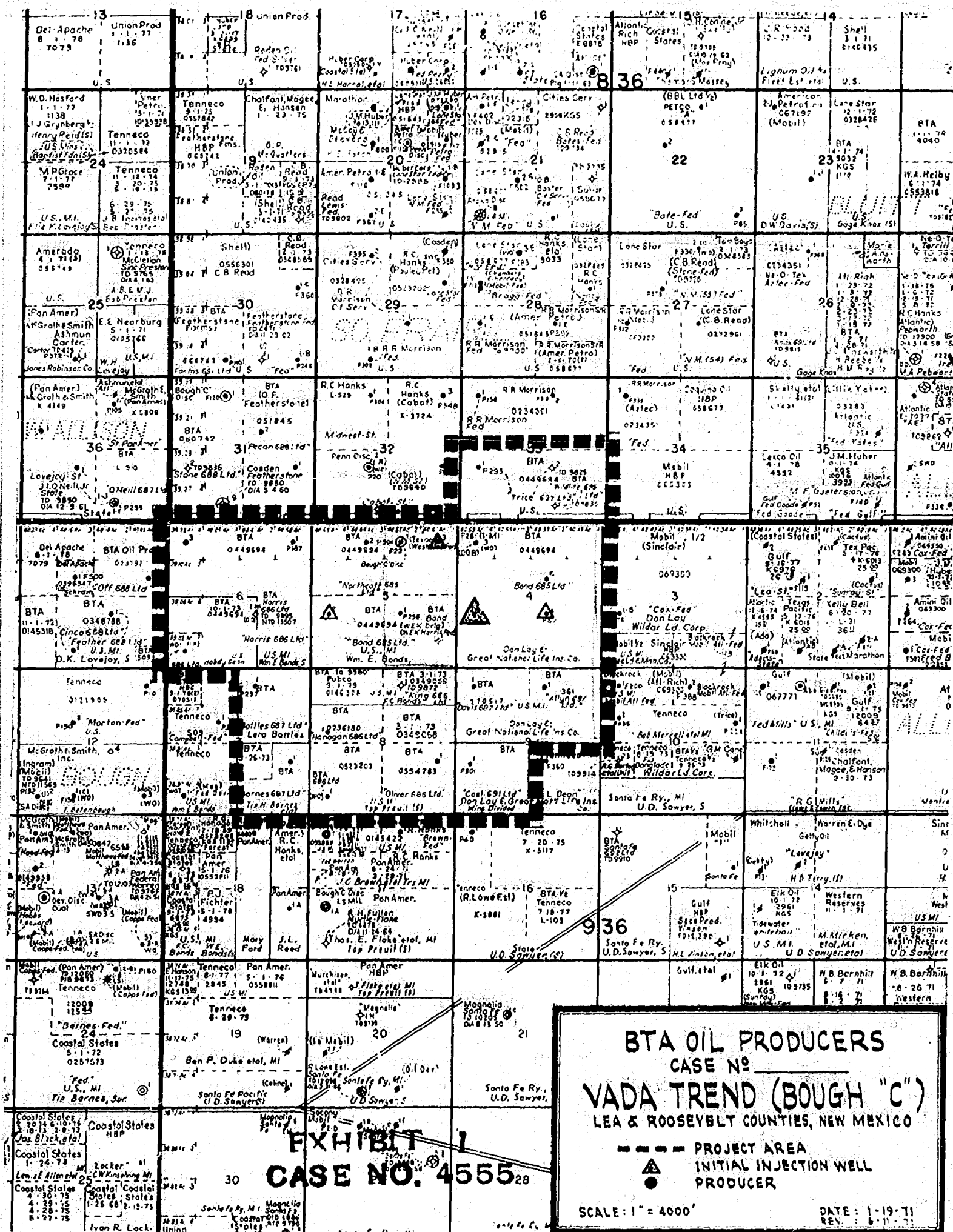
We believe the application to be in the best interest of oil conservation.

Very truly yours,

[Handwritten signature: F. J. McDonald]
F. J. McDonald
District Production Superintendent

WVP/gs

cc: BTA Oil Producers
104 South Pecos
Midland, Texas 79701

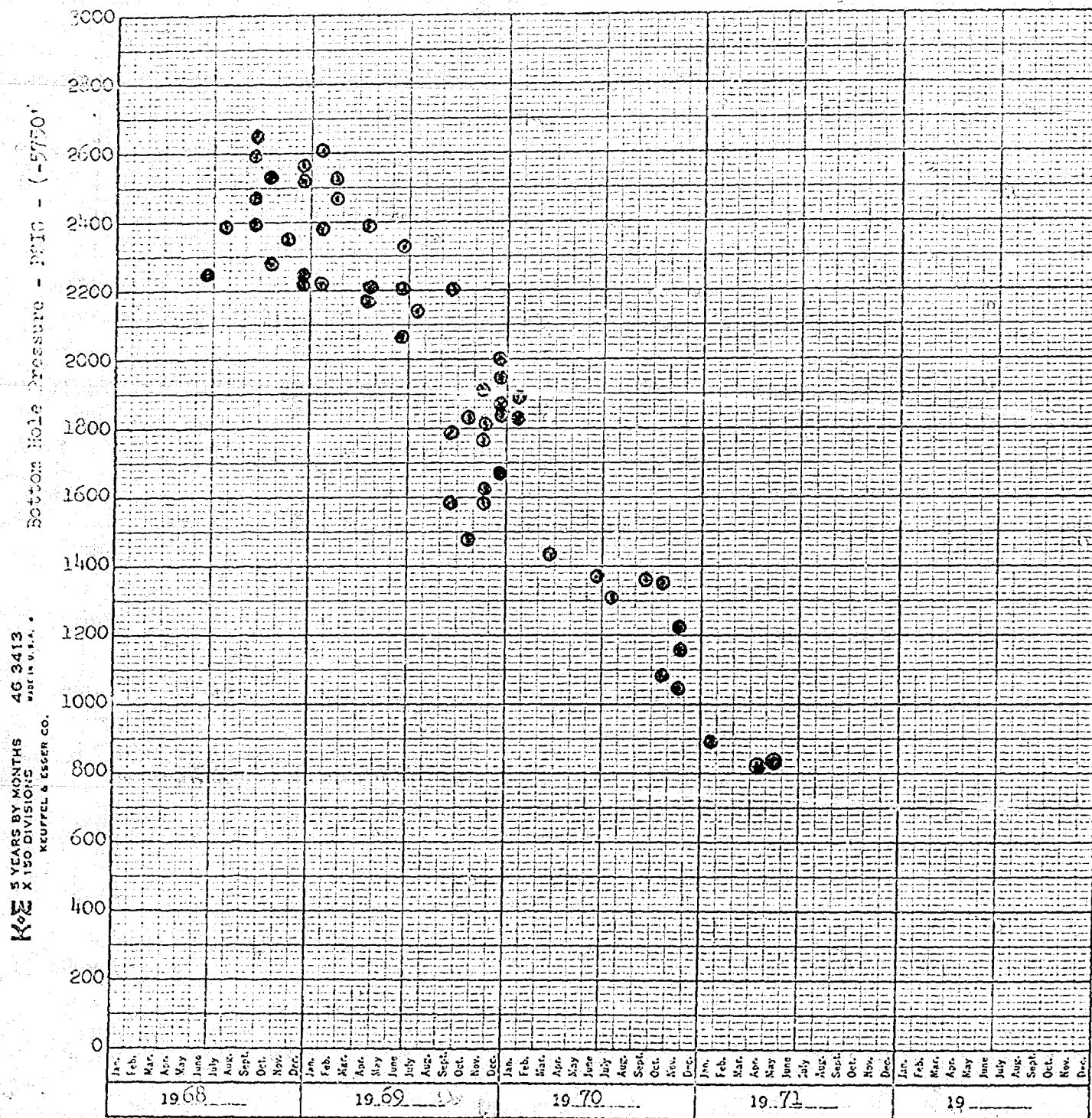


BTA OIL PRODUCERS
CASE NO. VADA TREND (BOUGH "C")
LEA & ROOSEVELT COUNTIES, NEW MEXICO

--- PROJECT AREA
 ● INITIAL INJECTION WELL
 ● PRODUCER

SCALE: 1" = 4000'
 DATE: 1-19-71
 REV: 6-11-71

BFA Oil Producers
Project Area and History
Vada Pool
Total 20 Wells



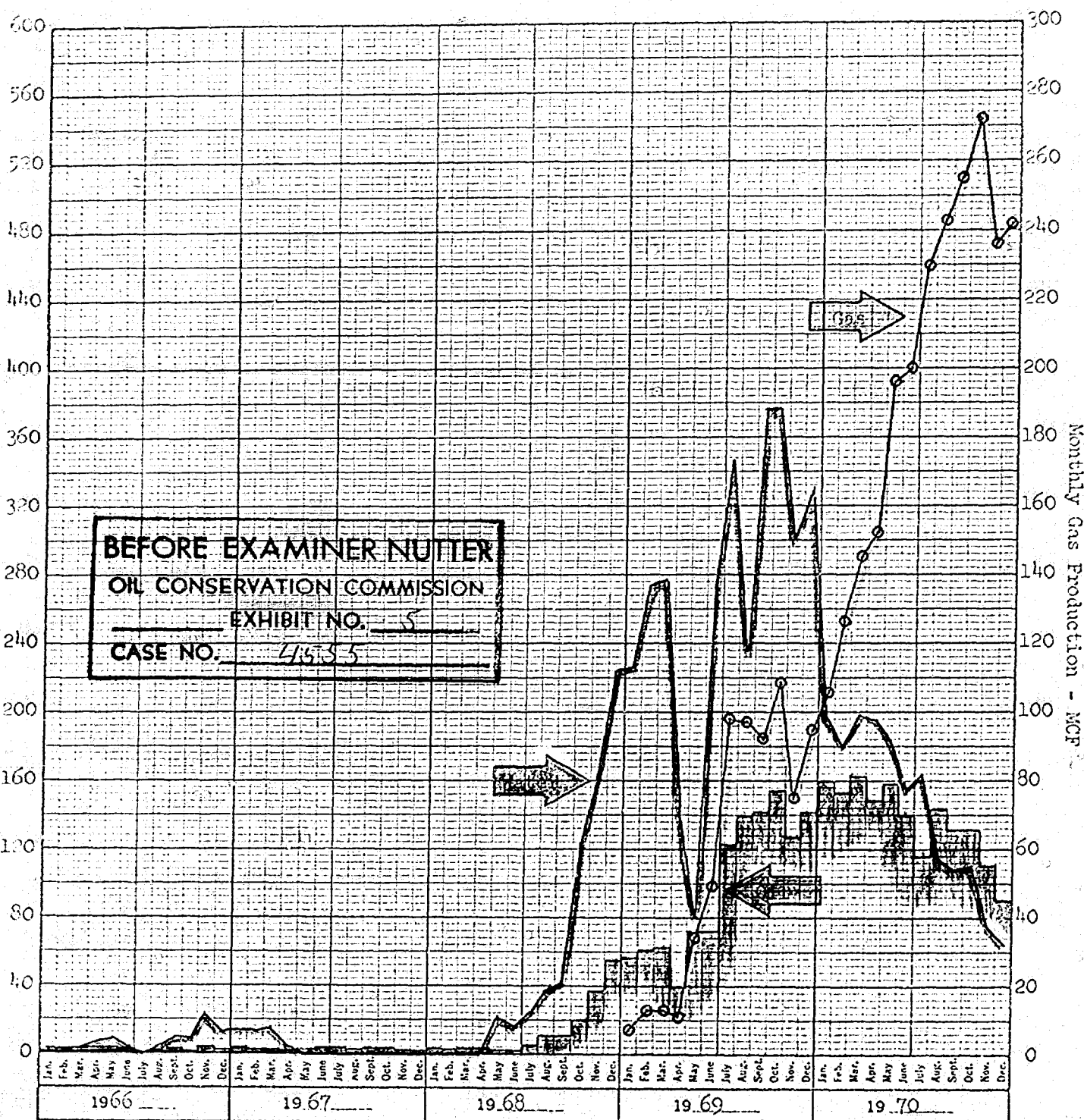
BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSIC
EXHIBIT NO. 4
CASE NO. 4555

EXHIBIT 4
CASE NO. 4555

WPA Oil Producers
 Project Area Performance
 Vada Pool
 Total 20 Wells

Monthly Oil & Water Production
 1,000 Bbls

KE 5 YEARS BY MONTHS 46 3413
 X 150 DIVISIONS
 MADE IN U.S.A. •
 KEUFFEL & ESSER CO.



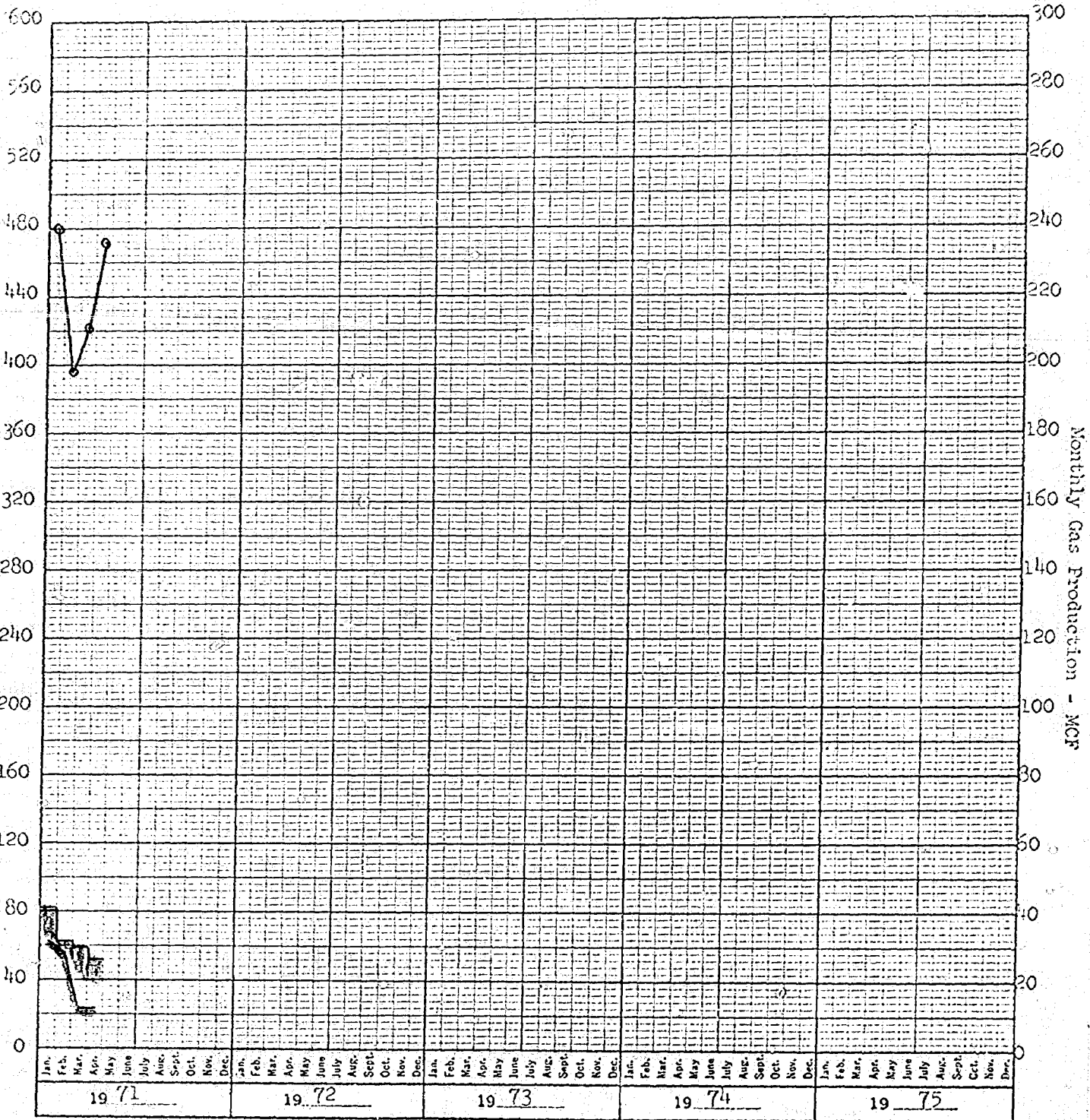
Cumulative to 12-1-70:		Cumulative to 5-1-71:	
Oil	3,046,316 Bbls	3,391,750 Bbls	
Gas	2,875,311 MCF	4,003,445 MCF	
Water	5,518,965 Bbls	5,748,486 Bbls	

EXHIBIT 5
CASE NO. 4555

BTA Oil Producers
 Project Area Performance
 Vada Pool
 Total 20 Wells

Monthly Oil & Water Production
 1,000 Bbls

K&E 5 YEARS BY MONTHS 46 3413
 MADE IN U.S.A.
 KEUFFEL & ESSER CO.

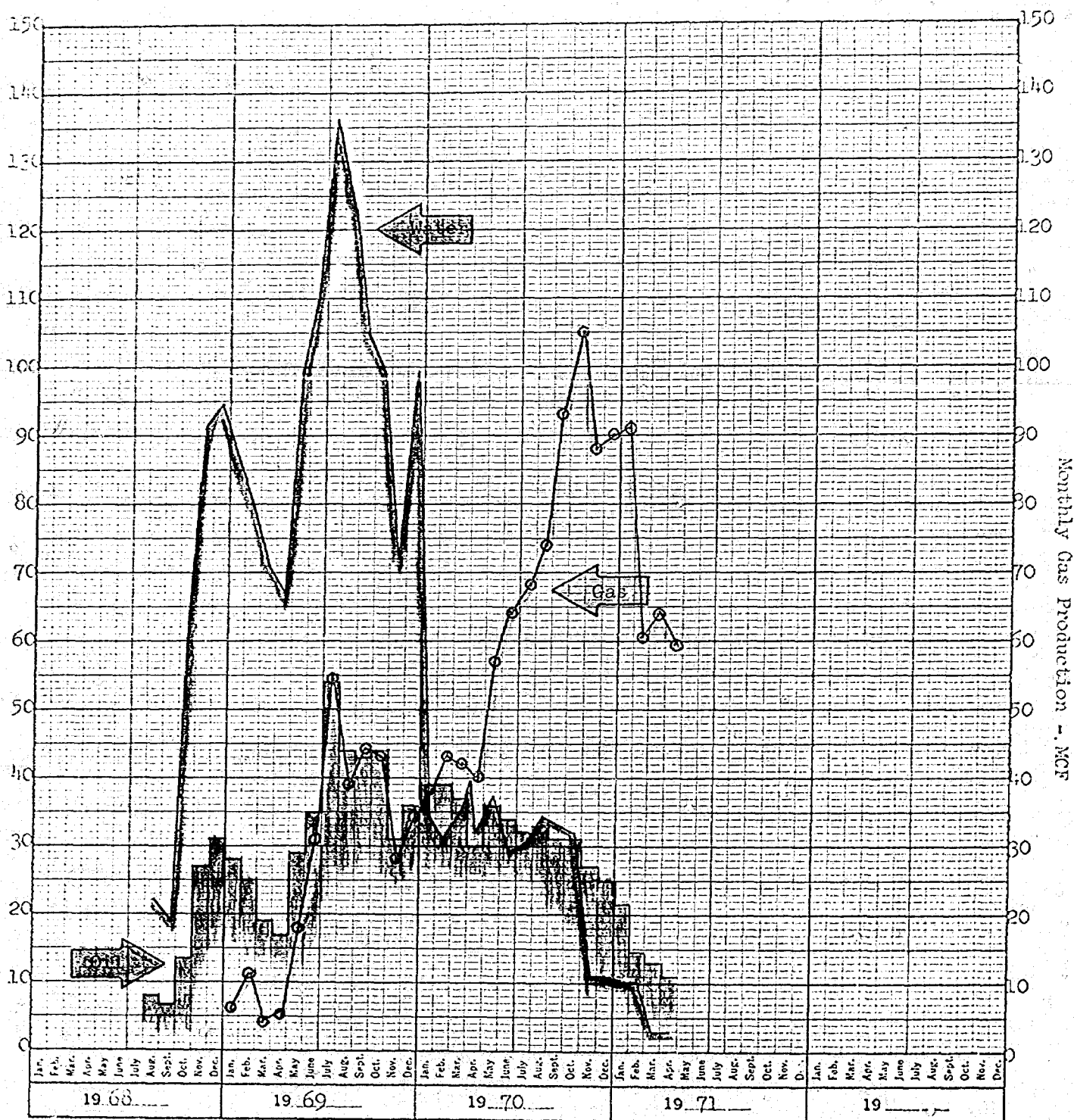


BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 5
 CASE NO. 4555

BTA Oil Producers
685 Bond Lease
Vada Pool
6 Wells

Monthly Oil & Water Production
1,000 Bbls

KE 5 YEARS BY MONTHS 46 3413
X 150 DIVISIONS
MADE IN U.S.A.
KEUFFEL & ESSER CO.



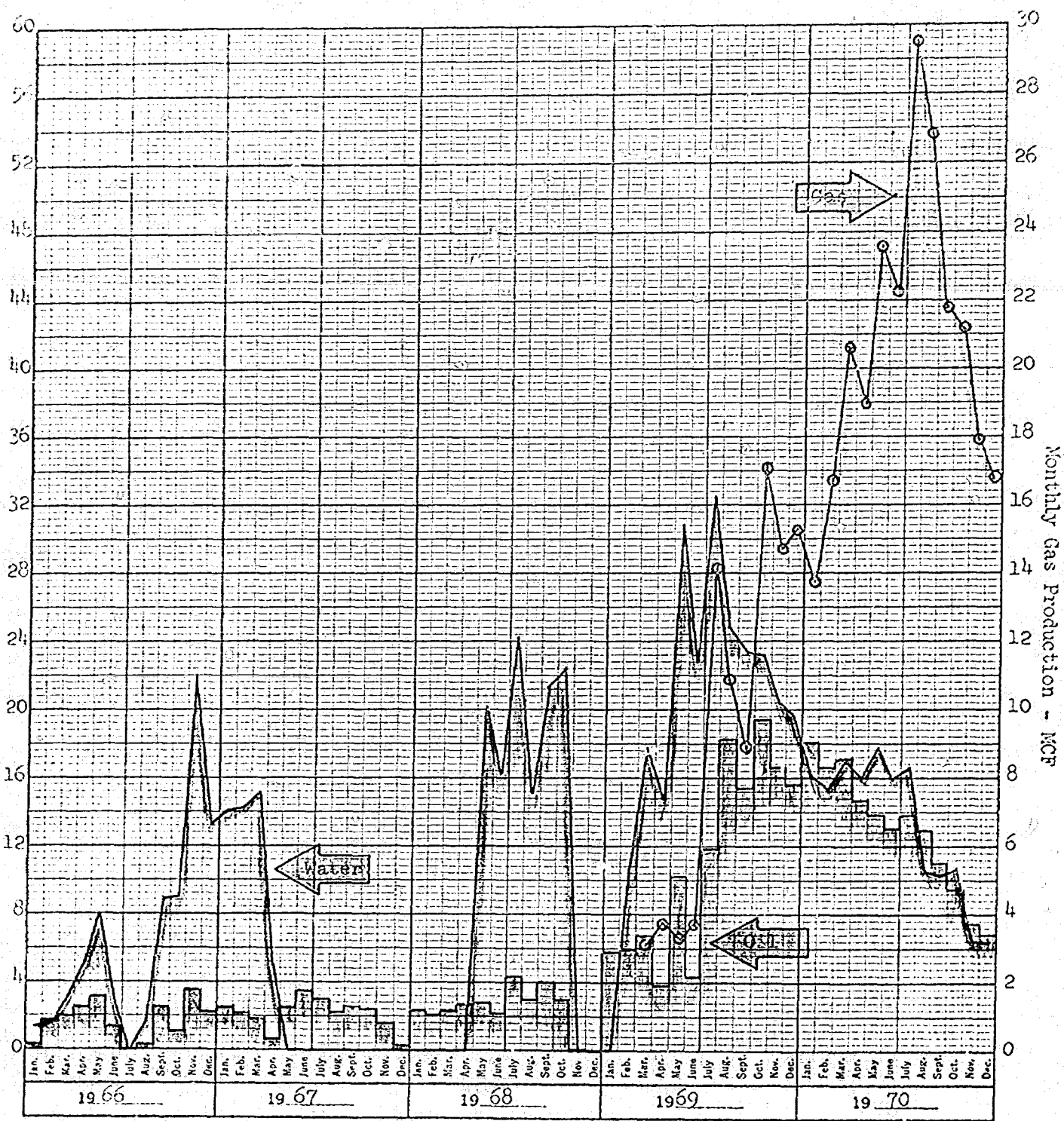
Cumulative to 12-1-70:
Oil 856,751 Bbls
Gas 1,029,707 MCF
Water 1,796,248 Bbls

Cumulative to 5-1-71:
Oil 941,639 Bbls
Gas 1,394,929 MCF
Water 1,835,747 Bbls

EXHIBIT 6
CASE NO. 4555

BTA Oil Producers
 687 Northcott Lease
 Vada Pool
 2 Wells

Monthly Oil & Gas Production
 1,000 Bbls
 K&E 5 YEARS BY MONTHS 46-2413
 MADE IN U.S.A.
 KEUFFEL & ESSER CO.

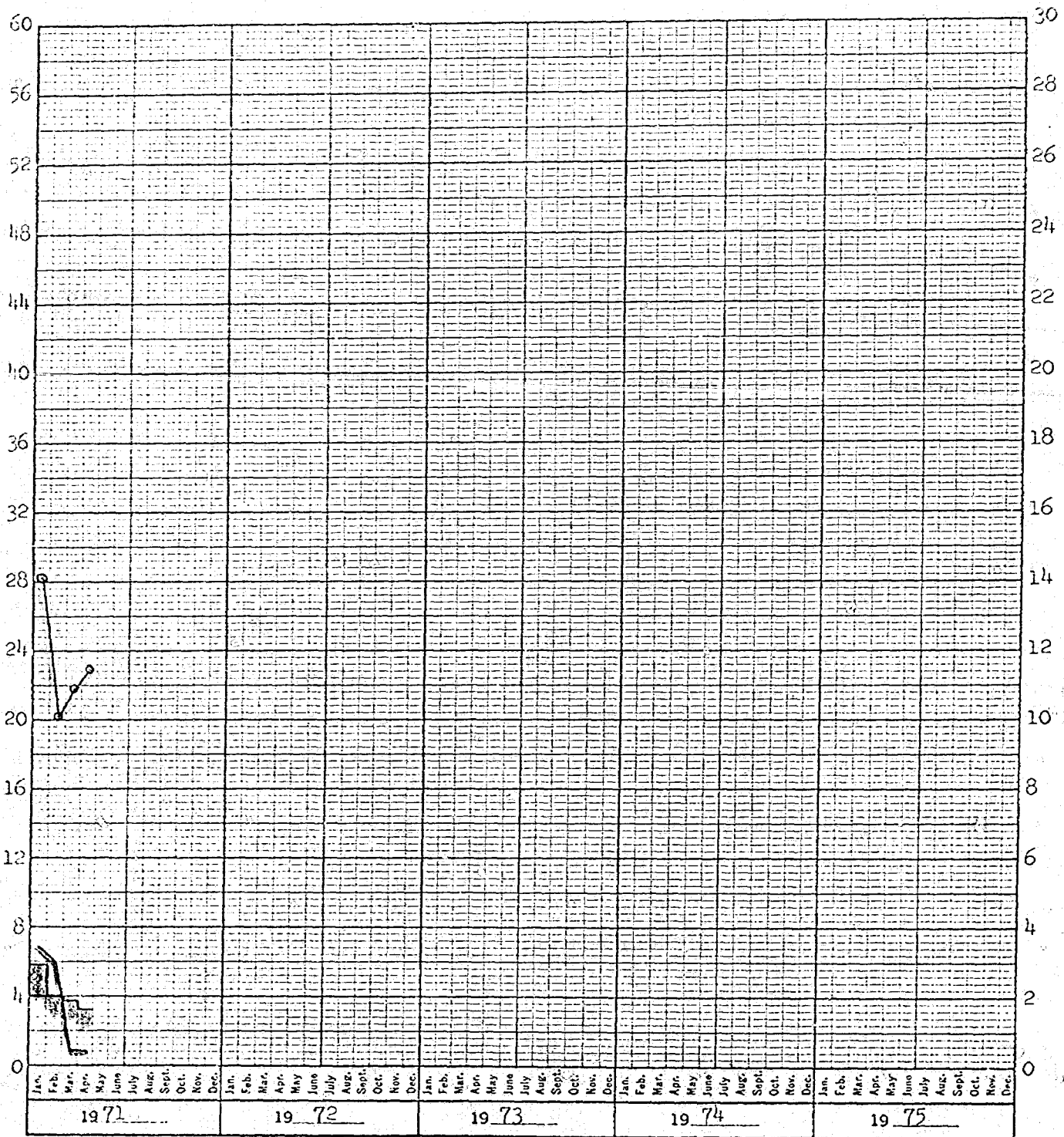


Cumulative to 12-1-70:	Cumulative to 5-1-71:
Oil 365,383 Bbls	389,207 Bbls
Gas 367,601 MCF	431,164 MCF
Water 728,997 Bbls	750,333 Bbls

EXHIBIT 7
CASE NO. 4555

BWA Oil Producers
 685 Northcott Lease
 Vada Pool
 2 Wells

K&E 5 YEARS BY MONTHS 46 3413
 MADE IN U.S.A.
 KEUFFEL & ESSER CO.



BEFORE EXAMINED NUTTER

OIL CONSERVATION COMMISSION

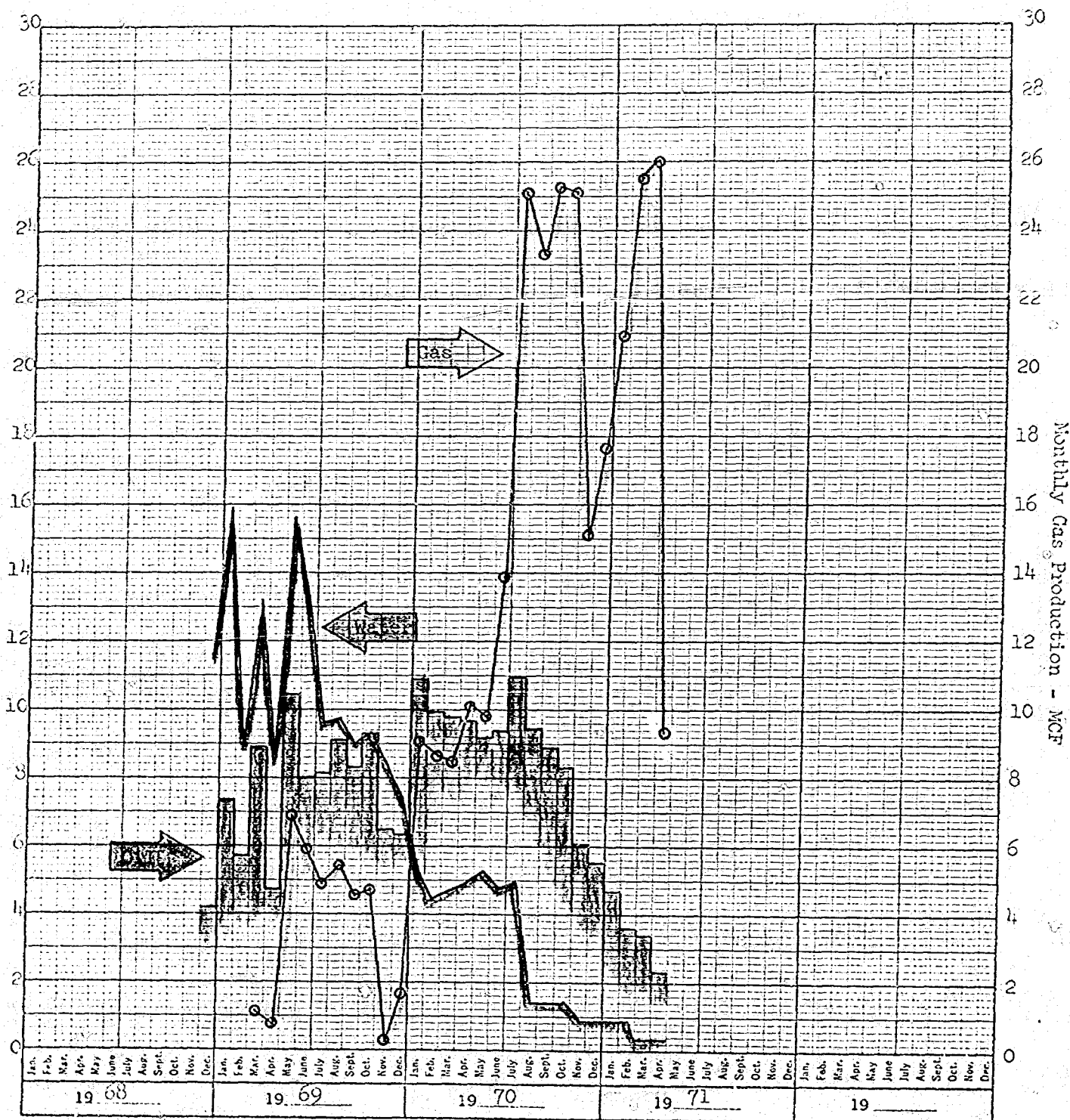
EX-111-7

CASE NO. 4535

Monthly Oil & Water Production
1,000 Bbls

K&E 5 YEARS BY MONTHS 46 3413
X 150 DIVISIONS
KEUFFEL & ESSER CO.

RTA Oil Producers
687 Davis Lease
Vada Pool
1 Well



Cumulative to 12-1-70:
Oil 137,112 Bbls
Gas 210,539 MCF
Water 153,628 Bbls

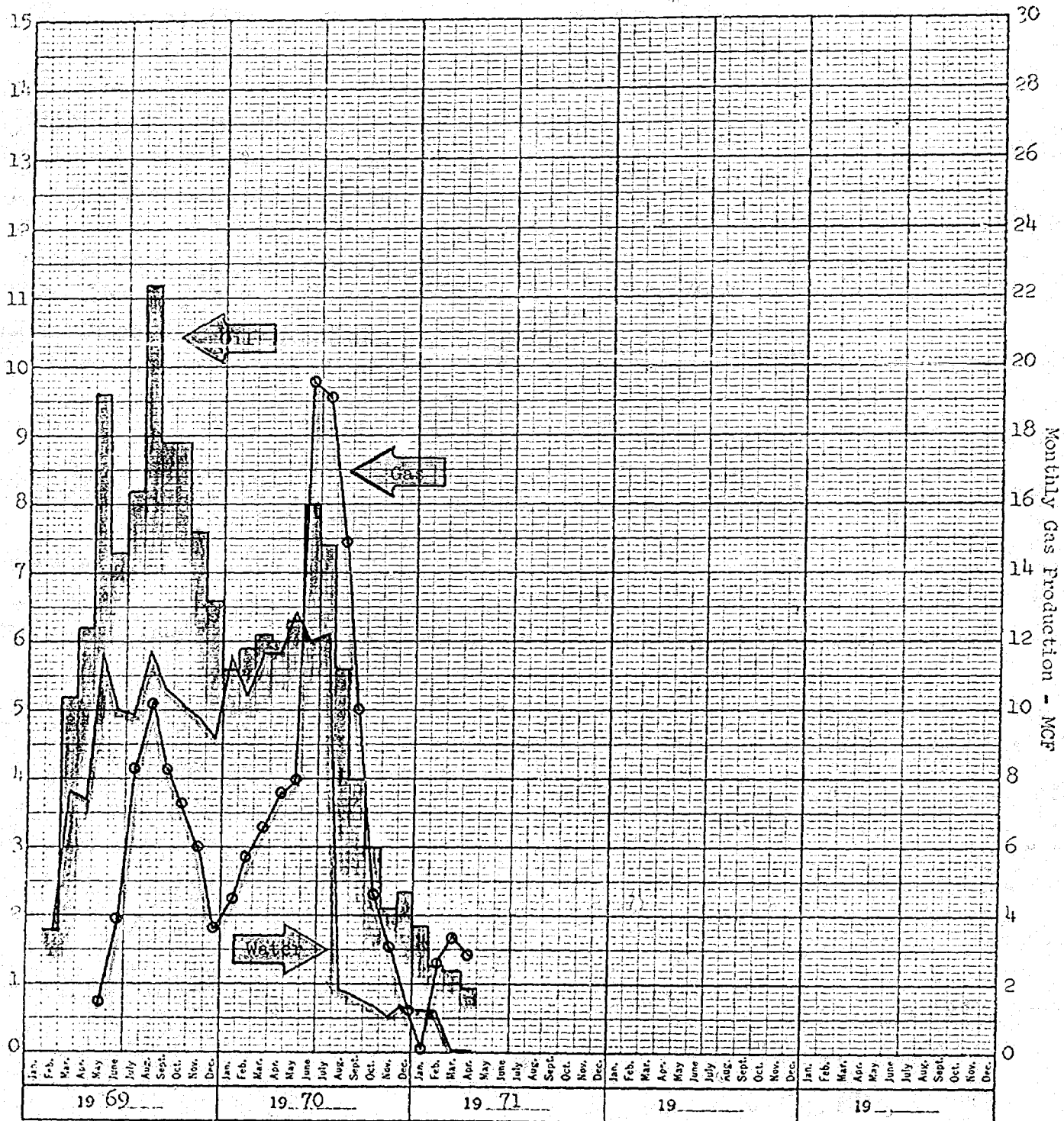
Cumulative to 5-1-71:
Oil 206,732 Bbls
Gas 309,981 MCF
Water 157,181 Bbls

EXHIBIT 8
CASE NO. 4555

WVA Oil Production
687 Alllyn Lease
Vada Pool
1 Well

Monthly Oil & Water Production
1,000 Bbls

MO 5 YEARS BY MONTHS 46 3413
NO. 1 X 150 DIVISIONS
MCUFFEL & ELLER CO.



Cumulative to 12-1-70:
Oil 128,621 Bbls
Gas 152,629 MCF
Water 85,625 Bbls

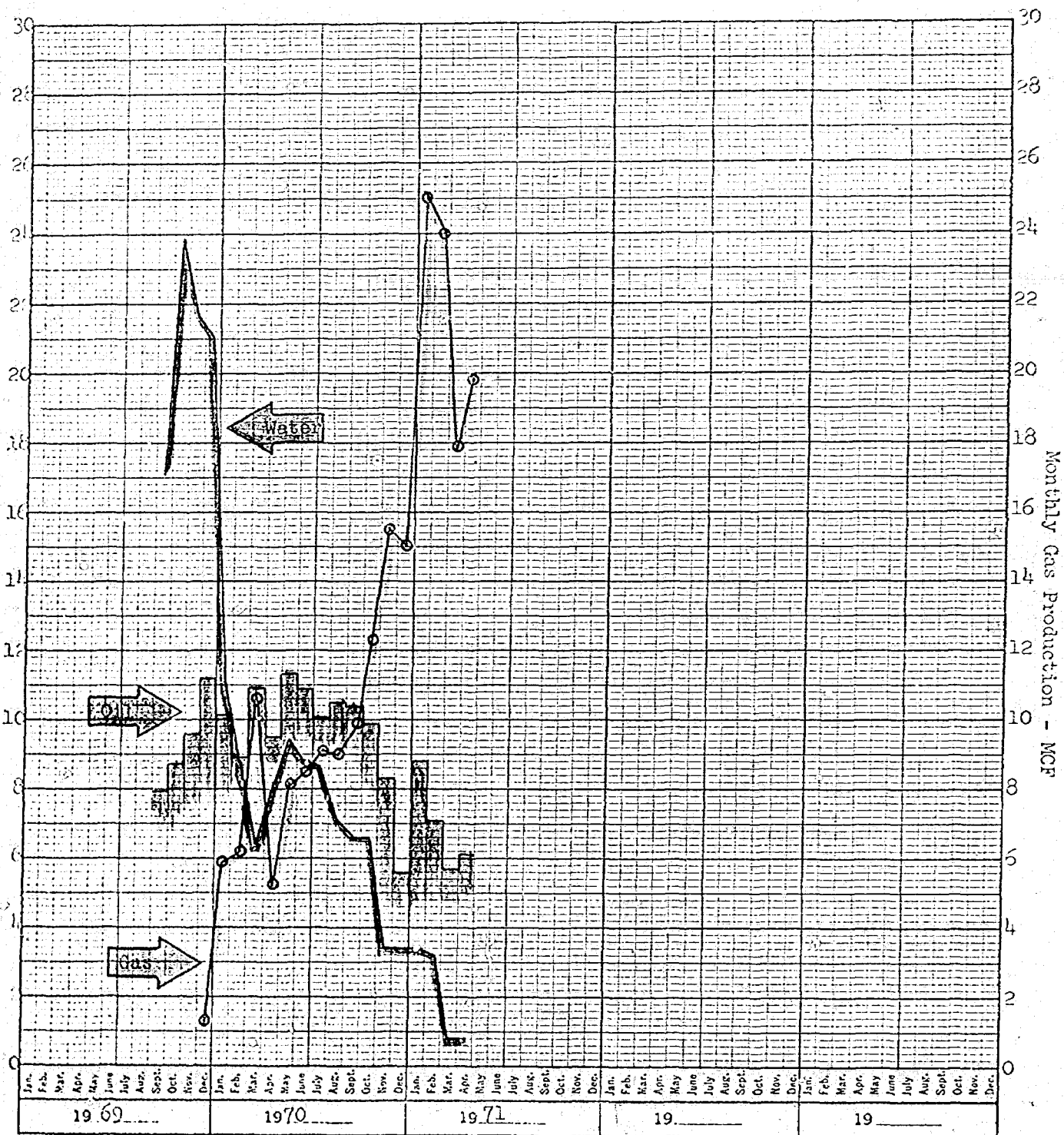
Cumulative to 5-1-71:
Oil 136,215 Bbls
Gas 162,626 MCF
Water 87,551 Bbls

EXHIBIT 9
CASE NO. 4555

Monthly Oil & Water Production
1,000 Bbls

K&S 5 YEARS BY MONTHS 46 3413
KUPFFEL & ESSER CO.

BTA Oil Production
691 Cask Loads
Vada Pool
L Well



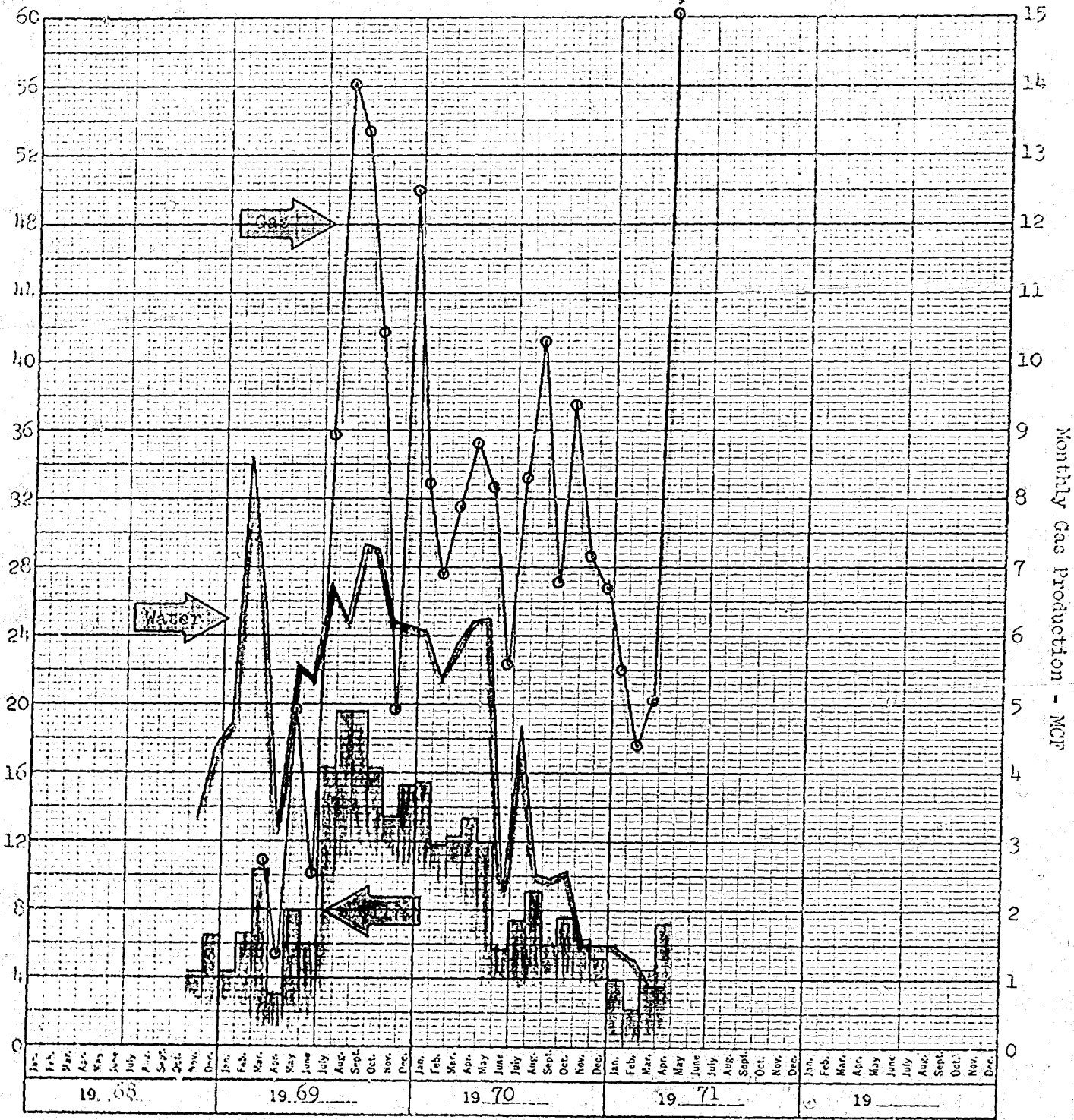
Cumulative to 12-1-70:
Oil 148,181 Bbls
Gas 102,033 MCF
Water 168,785 Bbls

Cumulative to 5-1-71:
Oil 181,561 Bbls
Gas 203,792 MCF
Water 180,522 Bbls

EXHIBIT 10
CASE NO. 4555

K&S 5 YEARS BY MONTHS 46 3413
 X 150 DIVISIONS
 KEUFFEL & ESSER CO.

Monthly Oil & Water Production
 1,000 Bbls



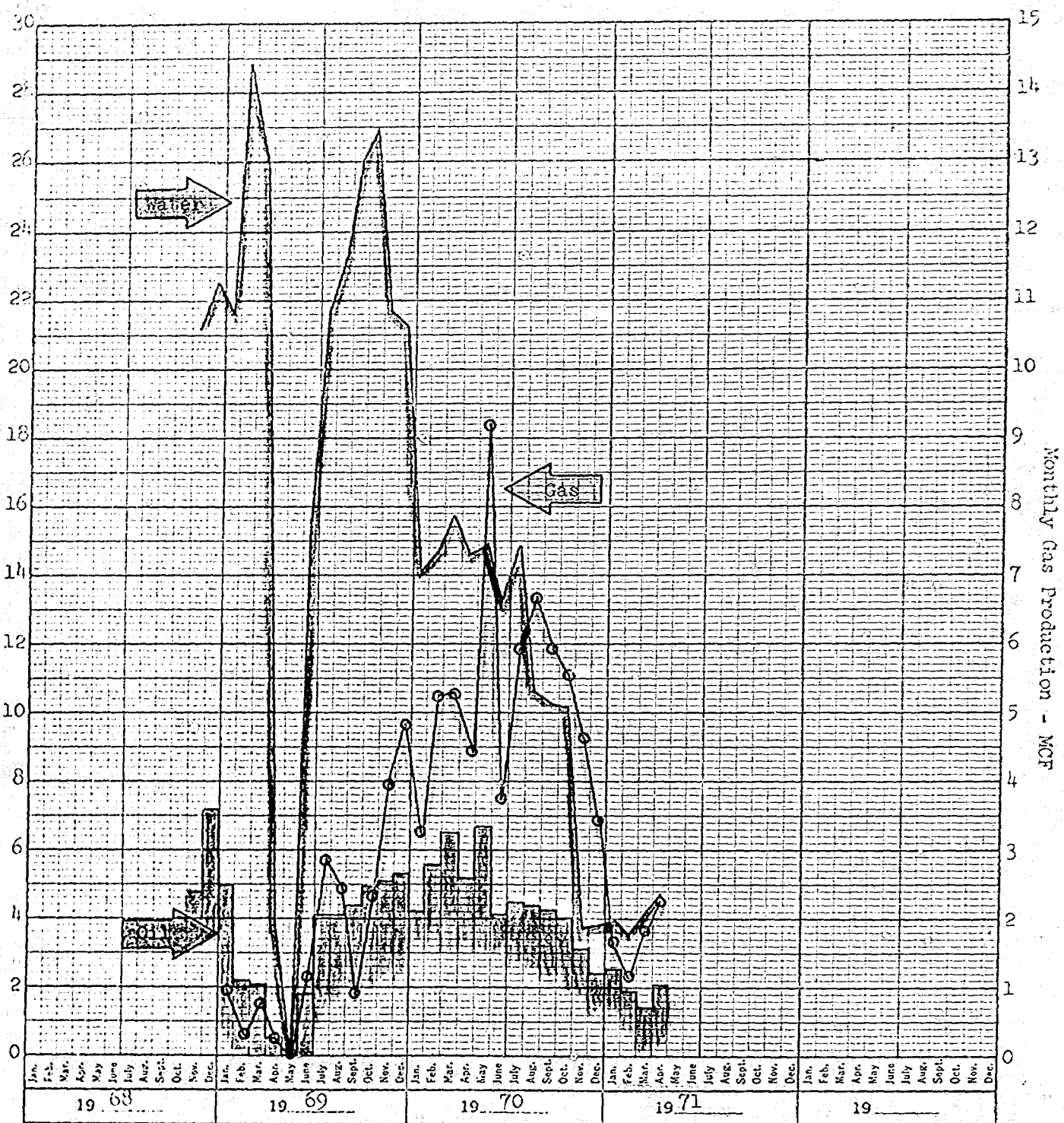
Cumulative to 12-1-70:			Cumulative to 5-1-71:		
Oil	257,957	Bbls	281,279	Bbls	
Gas	163,295	MCF	225,321	MCF	
Water	509,210	Bbls	533,249	Bbls	

EXHIBIT 11
CASE NO. 4555

BWA Oil Production
 687 Price Lease
 Vada Pool
 1 Well

Monthly Oil & Water Production
 1,000 Bbls

K&E
 5 YEARS BY MONTHS 46 3413
 X 150 DIVISIONS
 KEUFFEL & ESSER CO.



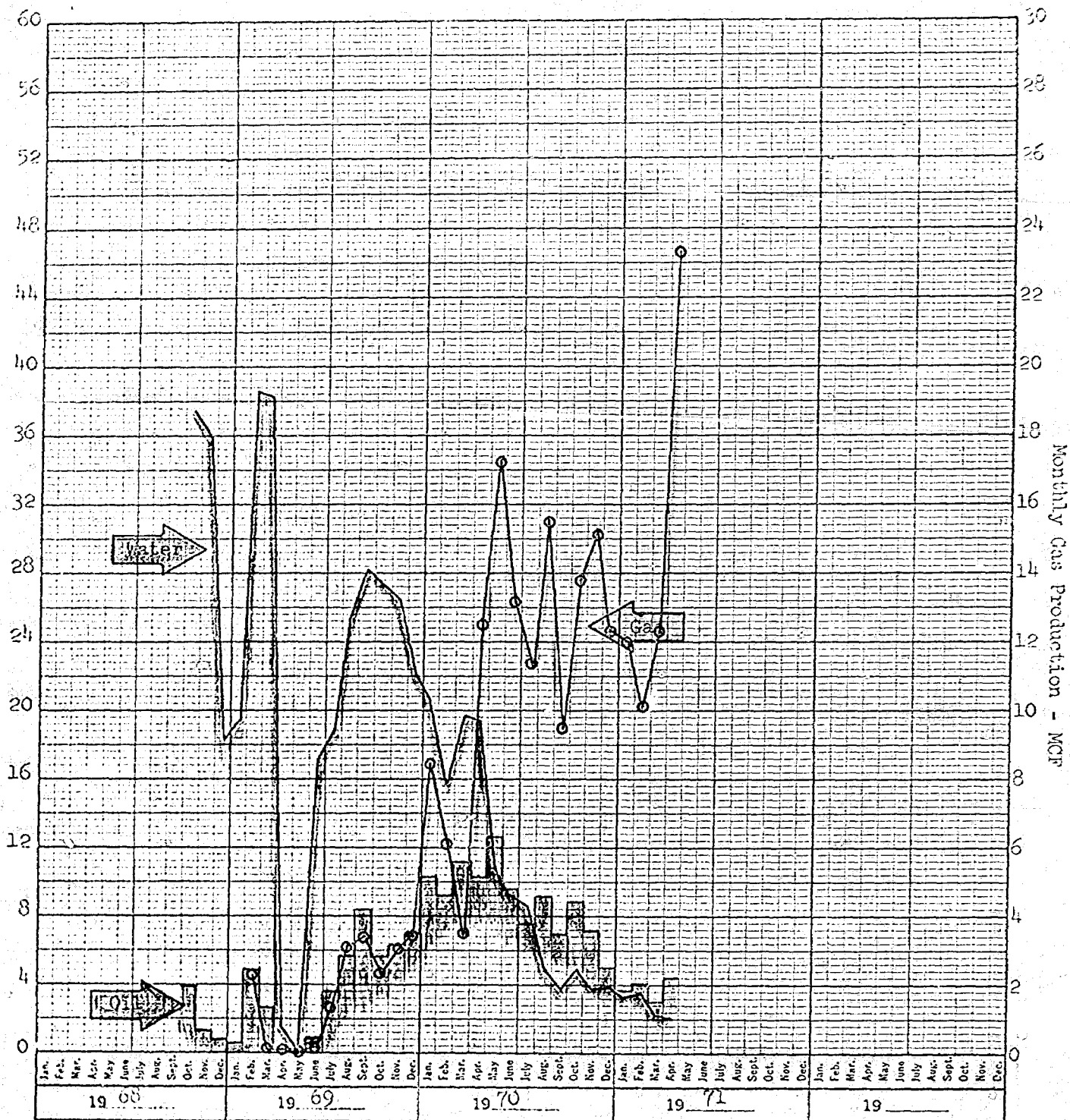
Cumulative to 12-1-70:	Cumulative to 5-1-71:
Oil 104,299 Bbls	114,614 Bbls
Gas 80,895 MCF	91,264 MCF
Water 417,220 Bbls	437,618 Bbls

EXHIBIT 12
CASE NO. 4555

NTA Oil Producers
686 Walker Avenue
Vada Pool
1 Well

Monthly Oil & Water Production
1,000 Bbls

46 3413
5 YEARS BY MONTHS
X 150 DIVISIONS
MCUFFEL & ESSER CO.



Cumulative to 12-1-70:
Oil 155,024 Bbls
Gas 145,181 MCF
Water 476,019 Bbls

Cumulative to 5-1-71:
Oil 175,300 Bbls
Gas 215,494 MCF
Water 491,099 Bbls

EXHIBIT 13
CASE NO. 4555

WTA Oil Production
 686 Oil/yr. (approx)
 Vada Pool
 1 Well

Monthly Oil & Water Production

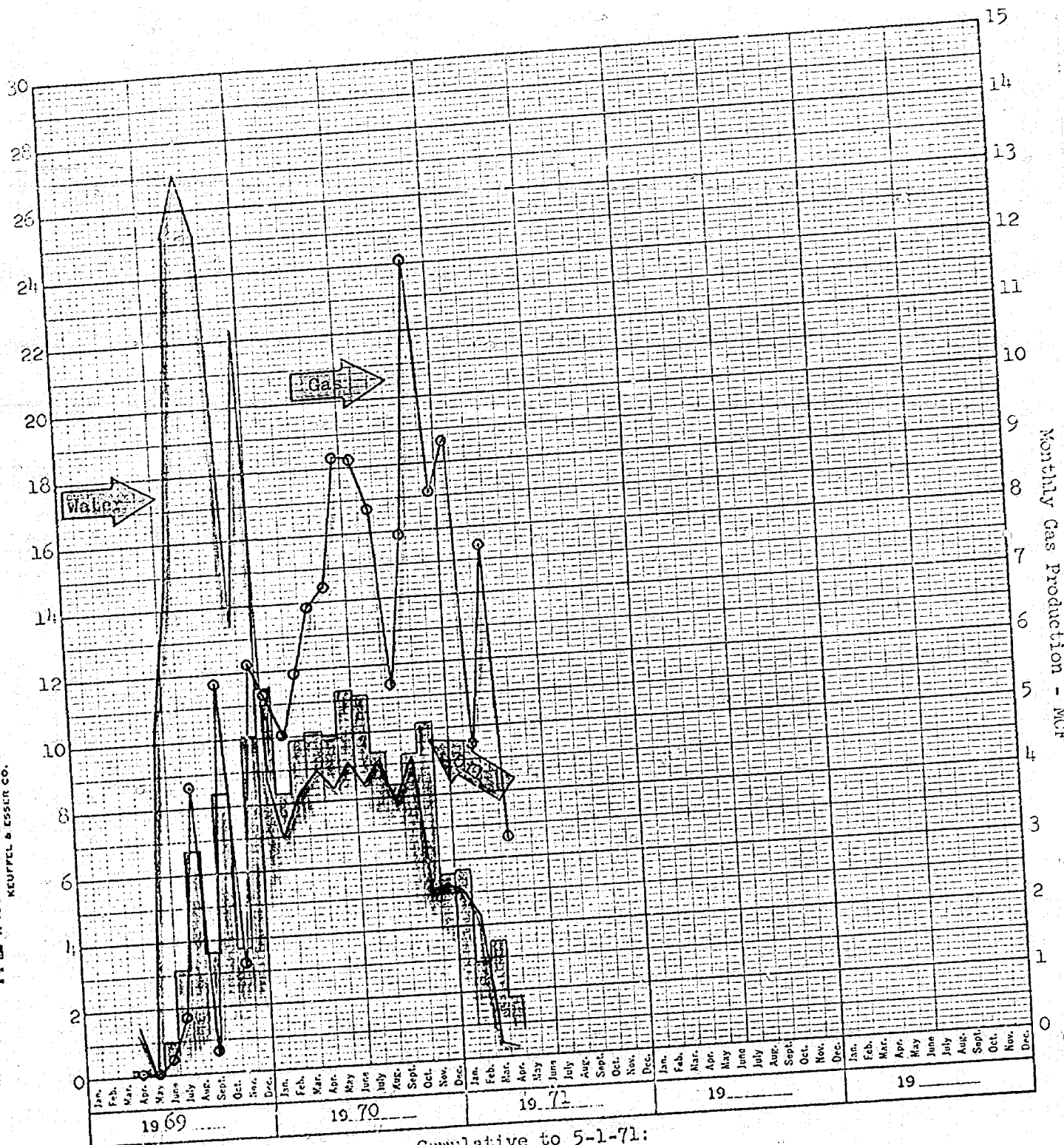
1,000 Bbls

46 3413

5 YEARS BY MONTHS

X 150 DIVISIONS

KEUFFEL & ESSER CO.

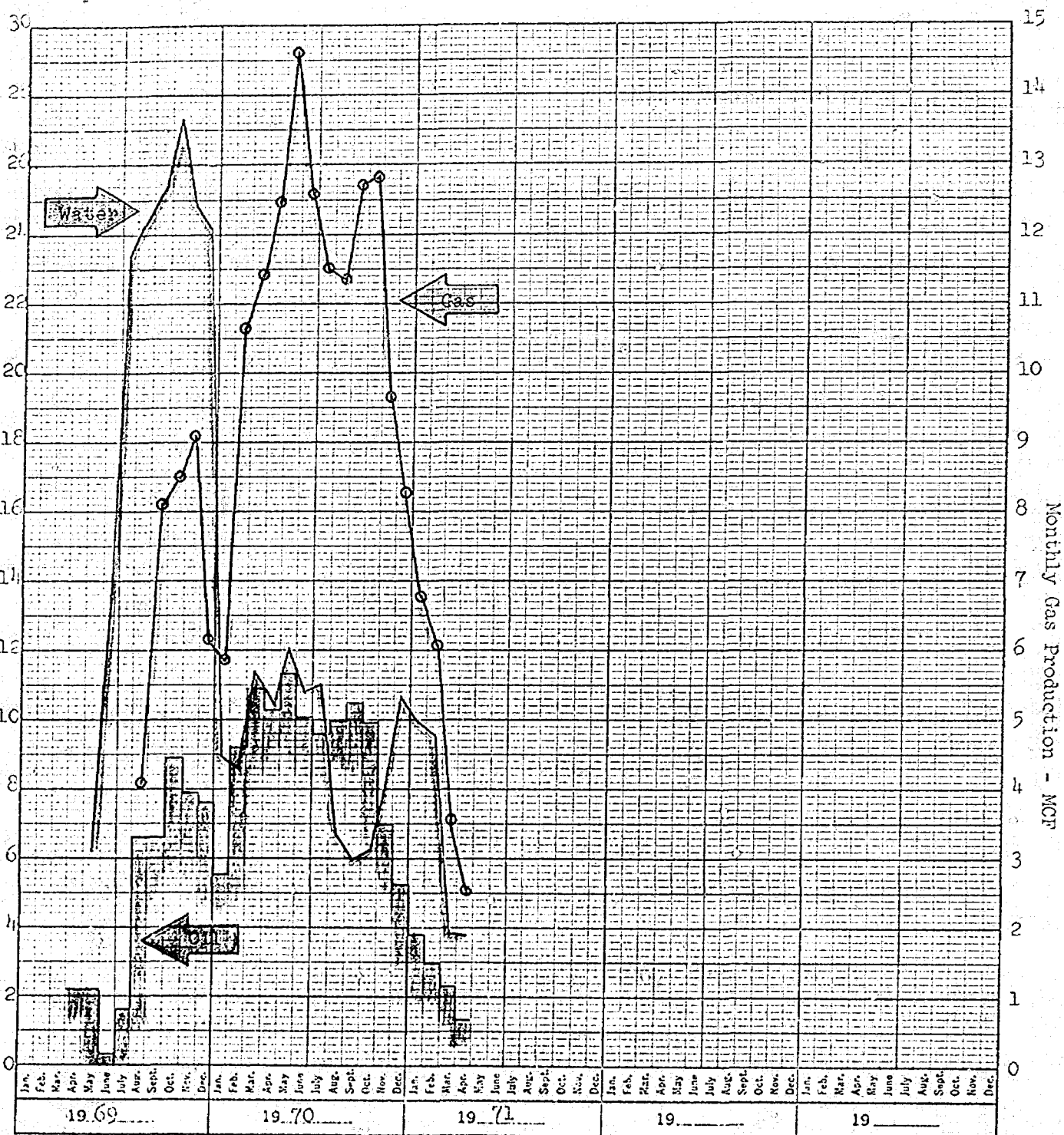


Cumulative to 12-1-70:	Cumulative to 5-1-71:
Oil 146,600 Bbls	166,256 Bbls
Gas 102,587 MCF	136,203 MCF
Water 230,206 Bbls	245,653 Bbls

EXHIBIT 14
CASE NO. 4555

Monthly Oil & Water Production
1,000 Bbls

K&S 5 YEARS BY MONTHS 46 3413
X 150 DIVISIONS
MADE IN U.S.A.
KEUFFEL & ESSER CO.

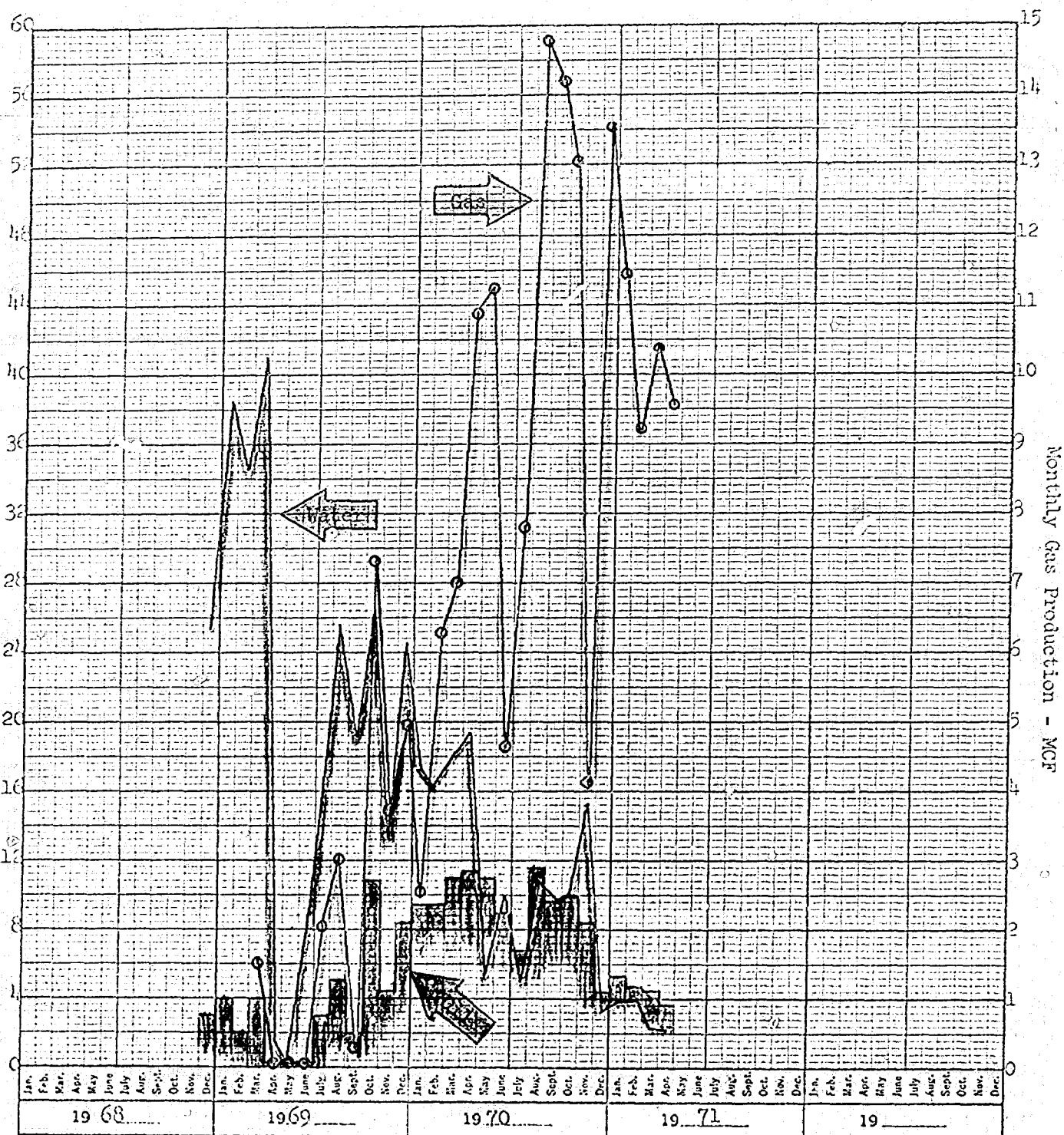


Cumulative to 12-1-70:	Cumulative to 5-1-71:
Oil 148,793 Bbls	164,486 Bbls
Gas 161,581 MCF	188,789 MCF
Water 275,873 Bbls	313,716 Bbls

EXHIBIT 15
CASE NO. 4555

Monthly Oil & Water Production
1,000 Bbls

KEE 5 YEARS BY MONTHS 46 3413
X 150 DIVISIONS
MADE IN U.S.A.
KEUFFEL & ESSER CO.

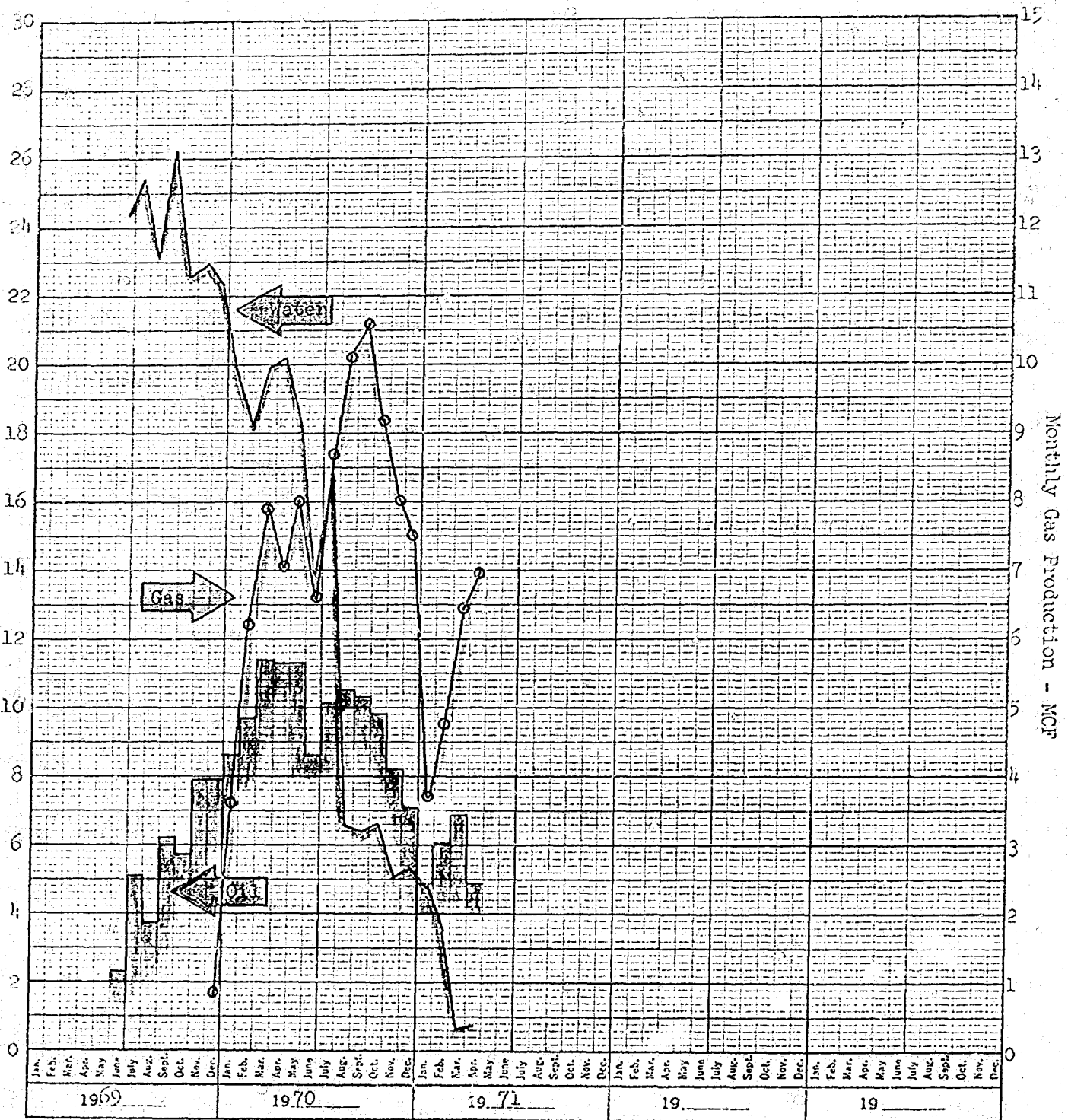


Cumulative to 12-1-70:	Cumulative to 5-1-71:
Oil 148,511 Bbls	171,107 Bbls
Gas 119,376 MCF	173,537 MCF
Water 339,749 Bbls	355,101 Bbls

EXHIBIT 16
CASE NO. 4555

WPA Oil Production
 637 Barnes House
 Vada Pool
 1 Well

Monthly Oil & Water Production
 1,000 Bbls
 K&E 5 YEARS BY MONTHS 46 3413
 MADE IN U.S.A.
 K&E OIL & GAS CO.



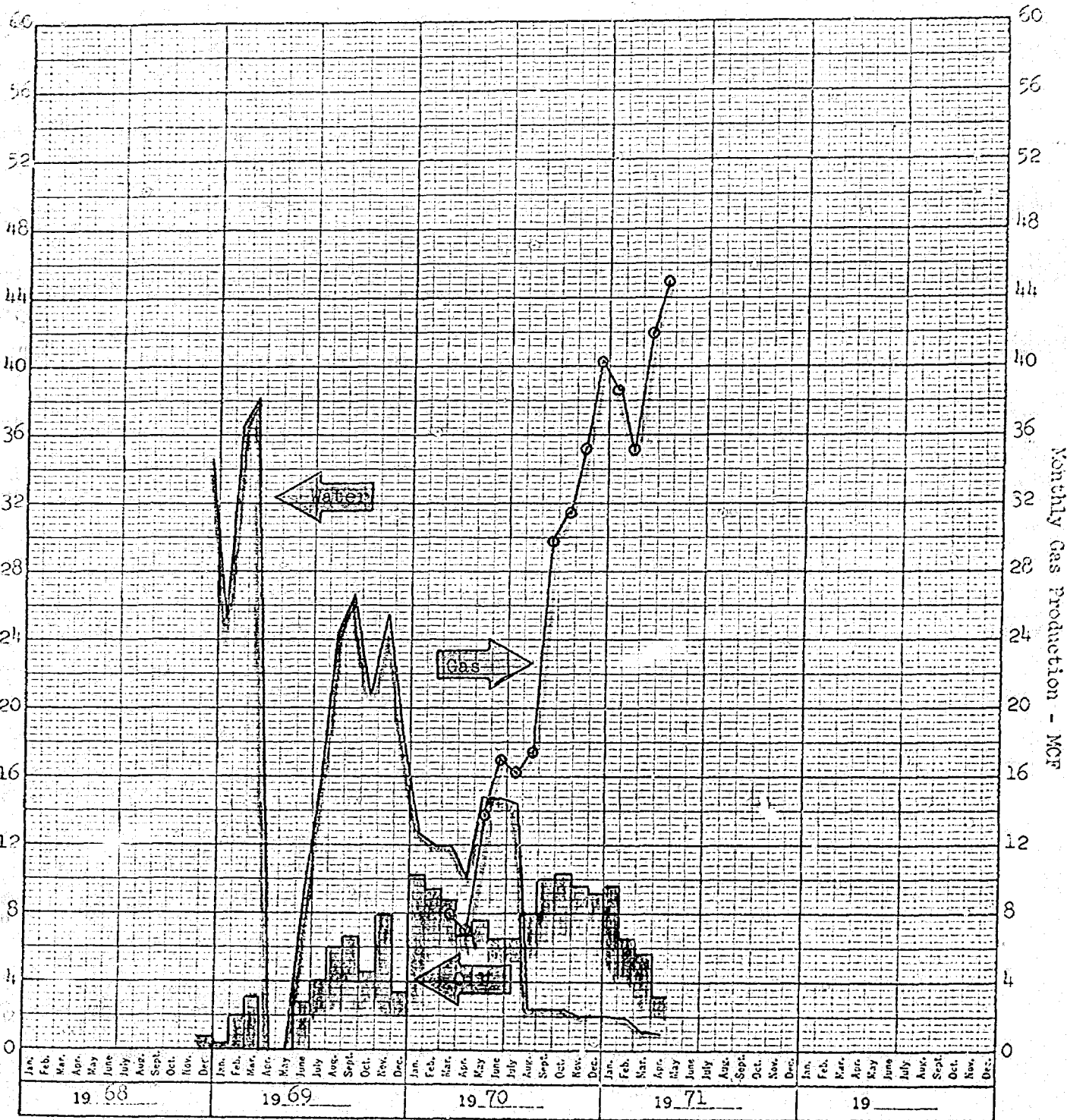
Cumulative to 12-1-70:	Cumulative to 5-1-71:
Oil 148,503 Bbls	178,406 Bbls
Gas 86,719 MCF	116,128 MCF
Water 319,316 Bbls	334,193 Bbls

EXHIBIT 17
 CASE NO. 4555

Monthly Oil & Water Production
1,000 Bbls

46 3413
MADE IN U.S.A.
KEUFFEL & ESSER CO.

5 YEARS BY MONTHS
X 150 DIVISIONS



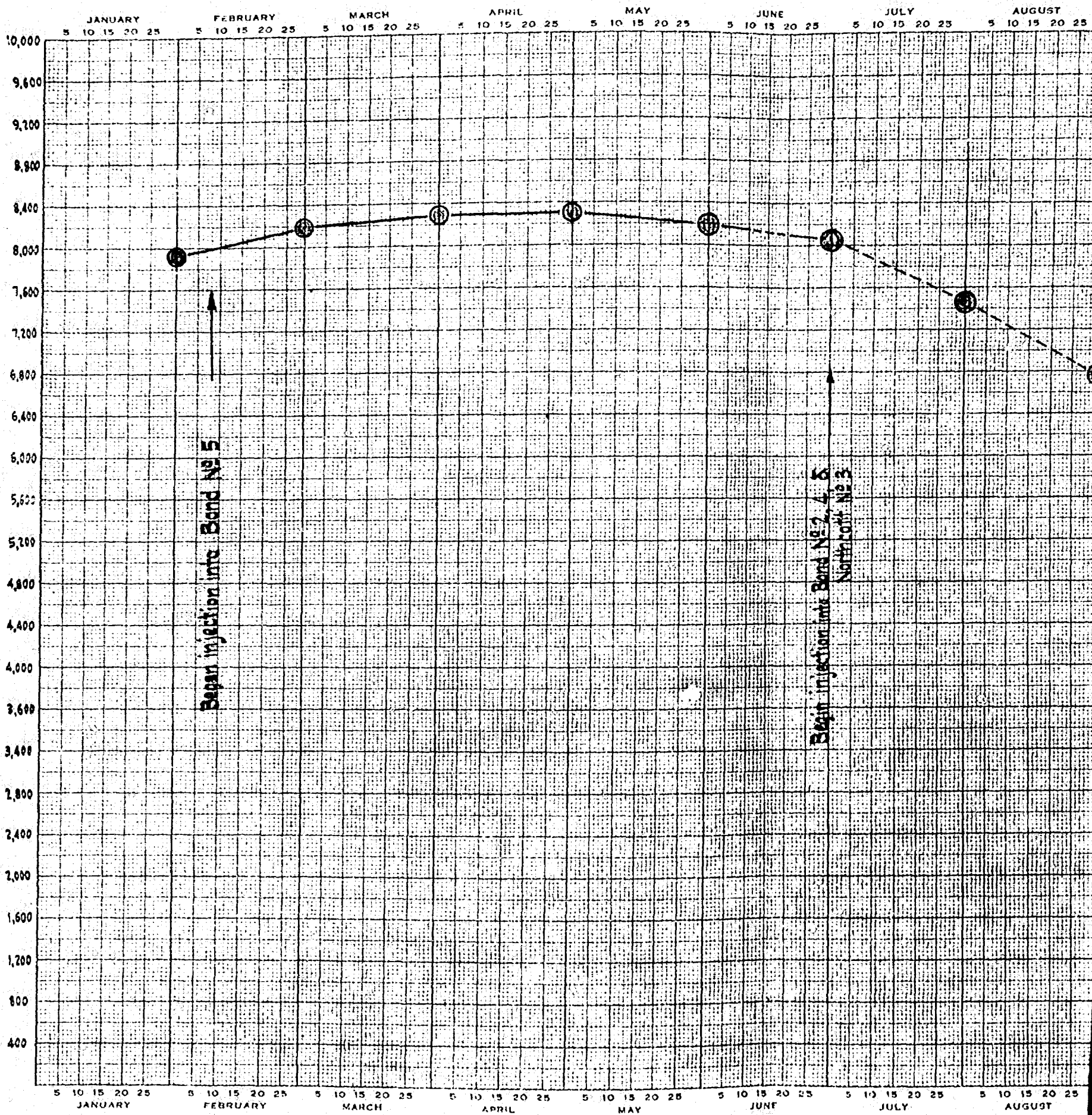
Cumulative to 12-1-70:
Oil 136,151 Bbls
Gas 175,412 MCF
Water 375,379 Bbls

Cumulative to 5-1-71:
Oil 170,528 Bbls
Gas 376,461 MCF
Water 383,813 Bbls

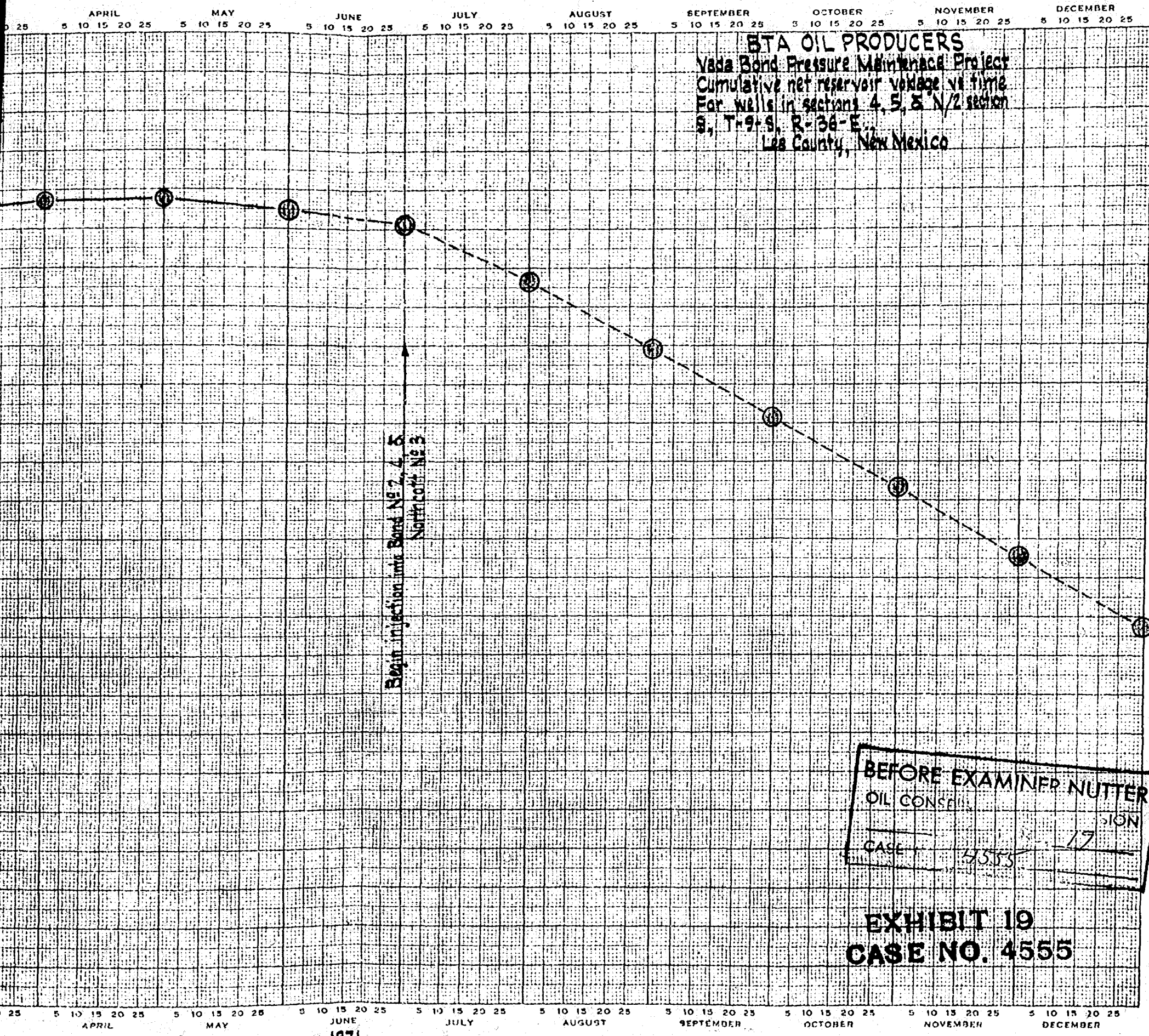
EXHIBIT 18
CASE NO. 4555

K-2
 1 YEAR BY DAYS 47 2893
 X 250 DIVISIONS
 KLUFFEL & FRIEDL CO.

CUMULATIVE NET RESERVOIR VOIDAGE - 1000 bbl's.



1971



BEFORE EXAMINED NUTTER
OIL CONSERVATION
CASE 4555

EXHIBIT 19
CASE NO. 4555

BTA OIL PRODUCERS

VADA BOND PRESSURE MAINTENANCE PROJECT AREA

LIST OF BOUGH "D" DST

Magnolia - Walker Federal #1-H
Unit M - Sec. 6-9S-36E

6/50 Bo C 9866 + 50 (9916) + 150 (10016)

DST 9928-58
TO - 2 hrs rec 1684' SW
No pressures

DST 9984-10,016
TO - 2 hrs rec 60' mud + 5760' SW no shows
FSIP - 3800#

BTA Oil Producers - Bond #4
Unit I - Sec. 4-9S-36E

10/68 Bo C 9814 + 50 (9864) + 150 (9964)

DST 9781-9882
TO - 1 hr 11 min rec 7510' SW no shows
60M FSIP - 3547#

Cactus Drlg. Co. - Sunray St. A #2
Unit H - Sec. 2-9S-36E

5/59 Bo C 9644 + 50 (9694) + 150 (9794)

DST 9740-9815
TO - 75 min rec 7800' SW no shows
30M FSIP - 3648#

Magnolia - Cox Federal #2
Unit D - Sec. 12-9S-36E

5/56 Bo C 9672 + 50 (9722) + 150 (9822)

DST 9793-9813
TO - 2½ hrs rec 7830' SW no shows
30M FSIP - 3695#

Magnolia - Santa Fe #1-C
Unit F - Sec. 21-9S-36E

7/50 Bo C 9770 + 50 (9820) + 150 (9920)

DST 9838-9846
TO - 2 hrs rec 3123' SW no shows
SIP - 3650#

Forest Oil - Federal-Warren #1
Unit D - Sec. 17-9S-36E

4/50 Bo C 9678 + 50 (9728) + 150 (9828)

DST 9761-9776
TO - 2 hrs rec 1380' SW no shows
No pressures

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
EX	NO. 20
CASE NO.	4555

EXHIBIT 20
CASE NO. 4555

DIAGRAMMATIC SKETCH FOR PROPOSED INJECTION WELL

BTA OIL PRODUCERS

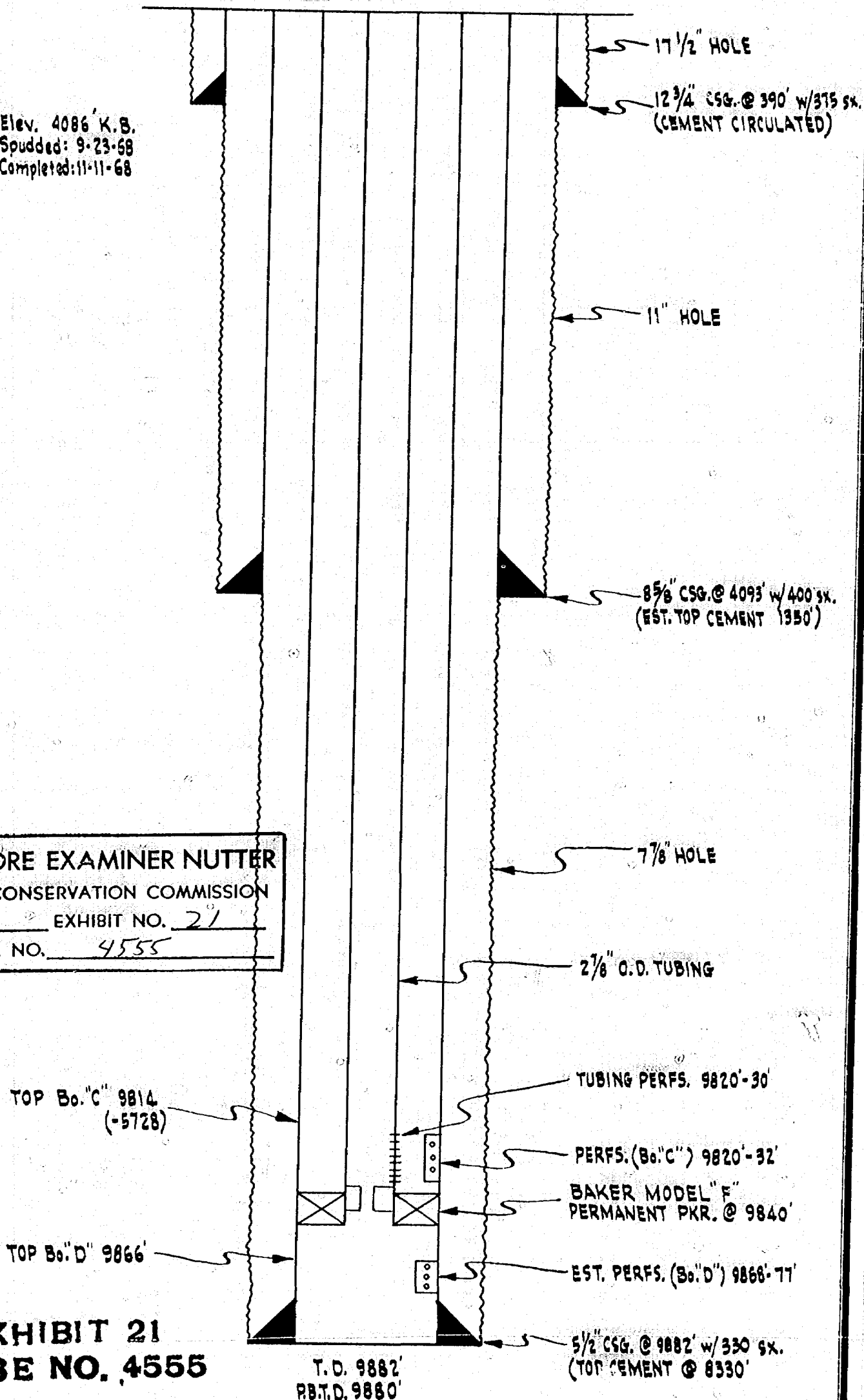
685 LTD. BOND, N° 4

1990' FSL & 1983' FEL OF SECTION 4, T-9-S, R-36-E
LEA COUNTY, NEW MEXICO

Elev. 4086' K.B.
Spudded: 9-23-68
Completed: 11-11-68

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 21
CASE NO. 4555

EXHIBIT 21
CASE NO. 4555



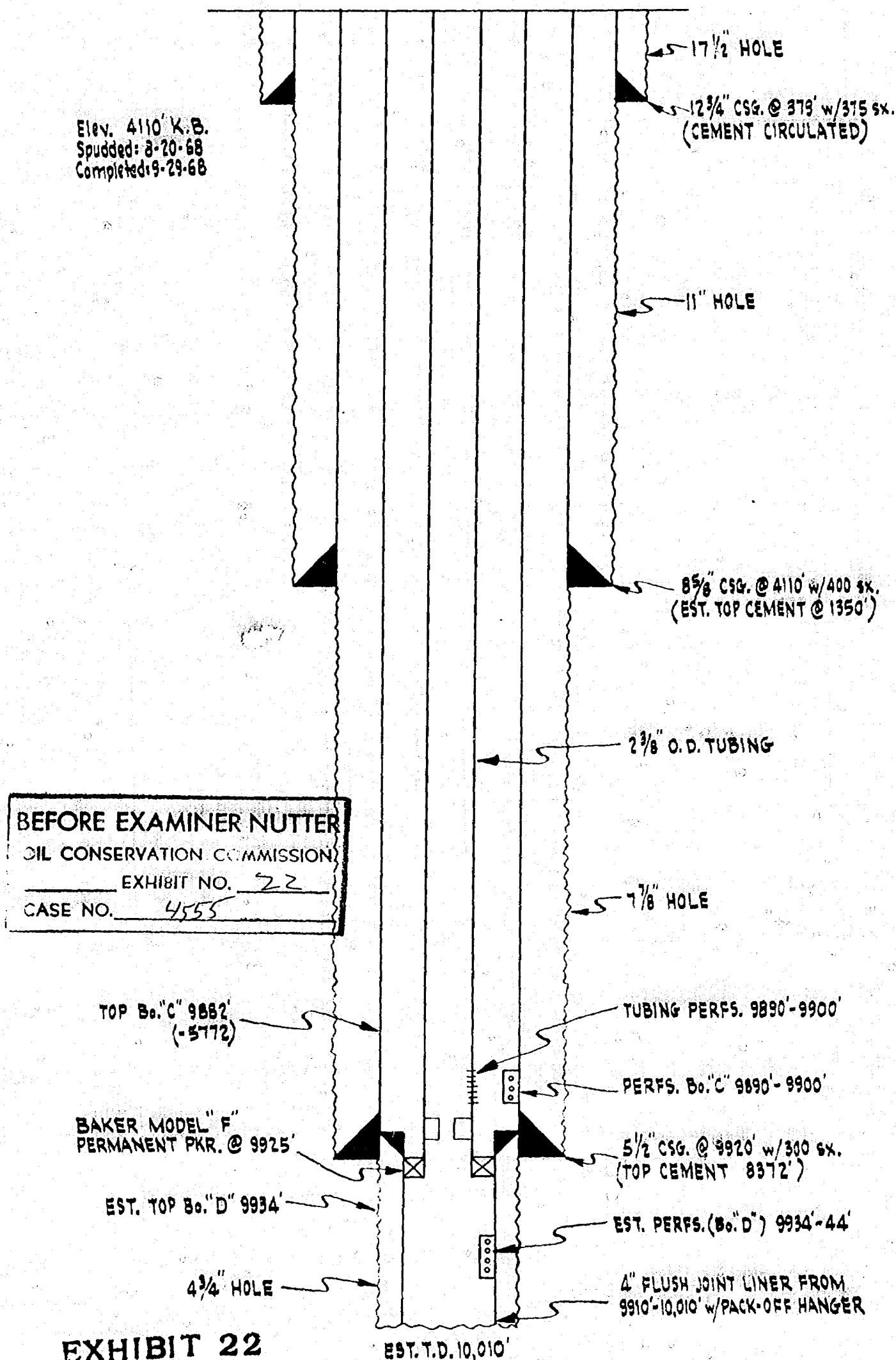
DIAGRAMMATIC SKETCH FOR PROPOSED INJECTION WELL

BTA OIL PRODUCERS

685 LTD. BOND, No 2

1980' FSL & 660' FWL OF SECTION 5, T-9-S, R-36-E
LEA COUNTY, NEW MEXICO

Elev. 4110' K.B.
Spudded: 8-20-68
Completed: 9-29-68



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 22
CASE NO. 4555

EXHIBIT 22
CASE NO. 4555

DIAGRAMMATIC SKETCH FOR PROPOSED INJECTION WELL

BTA OIL PRODUCERS

685 LTD. NORTHCOTT, N^o 3

660' ENL & 710' FEL OF SECTION 5, T-9-S, R-36-E
LEA COUNTY, NEW MEXICO

Elev. 4101' K.B.
Spudded: 3-11-69
Completed: 3-4-69

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 23
CASE NO. 4555

EXHIBIT 23
CASE NO. 4555

TOP Bo."C" 9768'
(-5667)

BAKER MODEL "F"
PERMANENT PKR. @ 9825'

EST. TOP Bo."D" 9838'

4 3/4" HOLE

EST. T.D. 9900'

17 1/2" HOLE

12 3/4" CSG. @ 370' w/ 315 sx.
(CEMENT CIRCULATED)

11" HOLE

8 5/8" CSG. @ 4064' w/ 400 sx.
(EST. TOP CEMENT @ 1950')

2 3/8" O.D. TUBING

7 7/8" HOLE

TUBING PERFS. 9774'-9798'

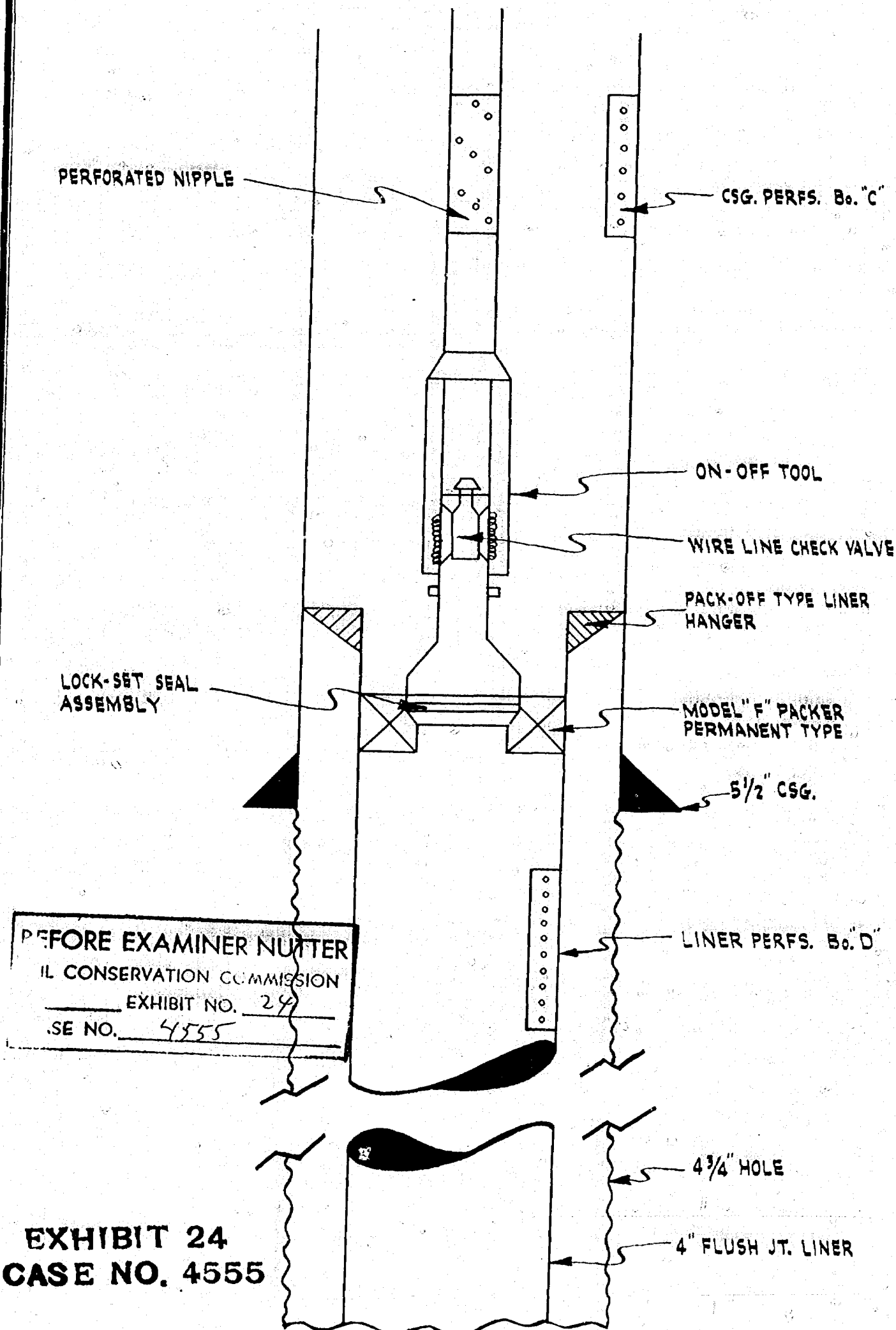
PERFS. Bo."C" 9774'-9798'

5 1/2" CSG. @ 9815' w/ 300 sx.
(EST. TOP CEMENT @ 8300')

EST. PERFS. (Bo."D") 9840'-50'

4" FLUSH JOINT LINER FROM
9805'-9900' w/ PACK-OFF HANGER

**SCHEMATIC OF DOWNHOLE EQUIPMENT
TYPICAL INJECTION WELL
YADA BOND PRESSURE MAINTENANCE PROJECT**



BEFORE EXAMINER NUTTER
IL CONSERVATION COMMISSION
EXHIBIT NO. 24
SE NO. 4555

**EXHIBIT 24
CASE NO. 4555**

BEFORE THE
OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF BTA OIL PRODUCERS FOR EXPANSION
OF A PRESSURE MAINTENANCE PROJECT,
LEA COUNTY, NEW MEXICO.

Case 4535

A P P L I C A T I O N

Comes now BTA Oil Producers and applies to the Oil Conservation Commission of New Mexico for approval of the expansion of its pilot pressure maintenance project in the Vada-Pennsylvanian Pool, Lea and Roosevelt Counties, New Mexico, and in support thereof would show the Commission:

1. By its Order No. R-4098, entered February 8, 1971, the Commission approved a pilot pressure maintenance project in the Vada-Pennsylvanian Pool by the injection of water into the Bough "C" zone of the Pennsylvanian formation through its 685 Ltd. Bond Well No. 5, located in the NW/4 SW/4 of Section 4, Township 9 South, Range 36 East, N.M.P.M., Lea County, New Mexico;

2. Said order made provision for the expansion of the pressure maintenance project by an administrative procedure, for injection in additional wells of air, gas or water, but because of the manner of injection, as hereinafter stated, this application will require notice and hearing before the Commission or its duly appointed examiner.

3. Applicant proposes to add three additional injection wells to the pilot project, as follows:

The 685 Ltd. Bond Well No. 2, located 1980 feet from the South line and 660 feet from the West line of Section 5, Township 9 South, Range 36 East, N.M.P.M.

The 685 Ltd. Bond Well No. 4, located 1980 feet from the South line and 1980 feet from the East line of Section 4, Township 9 South, Range 36 East, N.M.P.M.

DOCKET MAILED

Date 6-3-71

The 685 Ltd. Northcott Well No. 3, located 660 feet from the North line and 710 feet from the East line of Section 5, Township 9 South, Range 36 East, N.M.P.M.

4. Applicant has, under the provisions of Order No. R-4098, injected water in the 685 Ltd. Bond Well No. 5 for the past four and one-half months, and has accomplished all that is possible by injection through this one well, and the additional injection wells are necessary to fully evaluate the pressure maintenance project.

5. Applicant further seeks authority to utilize as a water source, the Bough "D" formation, approximately 100 feet below the Bough "C" zone of the Pennsylvanian formation for injection of water into the three additional injection wells, utilizing the reservoir energy of the Bough "D" formation to accomplish injection into the Bough "C" formation, which will not require lifting the water to the surface prior to re-injection.

6. All of the above three proposed injection wells are located within the project area approved by Commission Order No. R-4098.

7. Approval of this application is in the interests of conservation, will result in the possible recovery of oil that would not otherwise be recovered, and will prevent waste, and correlative rights will be protected.

WHEREFORE applicant prays that this application be set for hearing before the Commission or the Commission's duly appointed examiner, and that after notice and hearing as required by law, the Commission enter its order approving expansion of the pilot pressure maintenance project as

prayed for.

Respectfully submitted,

BTA OIL PRODUCERS

By Jason W. Kellahin
JASON W. KELLAHIN

KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501
ATTORNEYS FOR APPLICANT

DRAFT

GMH/df

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. 4555

Order No. R- 4098-A

APPLICATION OF BTA OIL PRODUCERS
FOR EXPANSION OF A PRESSURE
MAINTENANCE PROJECT, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

10:30

This cause came on for hearing at 9 a.m. on June 16, 1971,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this day of July, 1971, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, BTA Oil Producers, was authorized by
Order No. R-4098, dated February 8, 1971, to institute the BTA
Vada Bond Pressure Maintenance Project in the Vada Pennsylvanian
Pool, Lea County, New Mexico, by the injection of water into the
Bough "C" formation.

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CASE NO. 4555

Order No. R-

(3) That the applicant seeks authority to expand said project by converting ^{to} water injection ~~in~~ the following three wells in Township 9 South, Range 36 East:

BTA 685 Ltd. Bond Well No. 2, Unit L of Section 5
BTA 685 Ltd. Bond Well No. 4, Unit J of Section 4,
BTA 685 Ltd. Northcutt Well No. 3, Unit A of
Section 5.

(4) That the applicant proposes to complete the above-described wells in such a manner as to cause, by means of down-hole equipment, water from the Bough "D" zone to flood the Bough "C" zone in each of said wells.

(5) That the proposed expansion of the pressure maintenance project is in the interest of conservation and may result in greater ultimate recovery of oil from the subject pool, thereby preventing waste, and will not violate correlative rights.

(6) That the proposed method of completion of the above-described three wells is feasible and in accord with ^{said} ~~said~~ conservation practices.

(7) That the subject application should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, BTA Oil Producers, is hereby authorized to expand its Vada Bond Pressure Maintenance Project in the Vada Pennsylvanian Pool, Lea County, New Mexico by converting to water injection the following three wells in Township 9 South, Range 36 East, NMPM:

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CASE NO. 4555
Order No. R-

BTA 685 Ltd. Bond Well No. 2 - Unit L of Section 5
BTA 685 Ltd. Bond Well No. 4 - Unit J of Section 4
BTA 685 Ltd. Northcatt Well No. 3 - Unit A of Section 5

(2) That the applicant is hereby authorized, as to each of the above-described wells, to perforate the Bough "D" and "C" zones and complete the wells in such a manner as to cause, by means of down-hole equipment, water from the Bough "D" zone to flood the Bough "C" zone;

PROVIDED HOWEVER, that for the purposes of filing Form C-120 as required by Rule 704 of the Commission Rules and Regulations, the operator shall calculate the volumes of fluid injected monthly and shall confirm the monthly calculation by actual measurement of the volume of flow on a quarterly basis.

(3) That the subject expanded pressure maintenance project shall be governed by the provision of Rules 701, 702, 703 and 704 of the Commission Rules and Regulations insofar as said rules are not inconsistent with this order.

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

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

CASE 4556: Application of TENNECO
FOR SALT WATER DISPOSAL, CHAVES
COUNTY, NEW MEXICO.