CASE 3353: Application of TESORO PETR. CORP. to amend R-2807, which authorized waterflood project.

CASE NO 3353

Large Exhibits

## PERTINENT DATA FOR PAN AMERICAN'S EMPEROR OIL COMPANY FEDERAL WELL NO. 1 DOS HERMANOS (MORROW) GAS POOL EDDY COUNTY, NEW MEXICO

Location

Unit F, 1980' FN & WL, Sec. 28, T-20-S,

R-30-E, Eddy County, New Mexico.

Total Depth

13,605

Elevation

3359 RDB

Production Casing String

7" set at 13,375'

Morrow Perforations

12,242-52<sup>3</sup>, 12,340-51<sup>1</sup>, 12,362-73<sup>1</sup>, 12,376-81<sup>1</sup>, 12,385-91<sup>1</sup>

Morrow Stimulation

None

Potential

CAOF (4 Pt.) 13,600 MCFPD, 5-1-65

Connection Date for Gas Sales

6-7-65

Gas Purchaser

Southern Union

Gas Gravity

0.613

Original Gas - Liquid Hydrocarbon

Ratio

66.6 MCF/Bb1.

Liquid Hydrocarbon Gravity

57.4° API @ 60°F.

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## BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico January 5, 1966 HEARING EXAMINER DEARNLEY-MEIER REPORTING SERVICE, Inc. IN THE MATTER OF: Application of Tesoro Petroleum Corporation to amend Order No. R-2807, McKinley County, New Mexico. Case No. 3353 BEFORE: Daniel S. Nutter, Examiner TRANSCRIPT OF HEARING



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SANTA FE

NEW MEXICO

## REGISTER

HEARING DATE JAI	NUARY 5, 1966 TIME	S: 9 A.M.
NAME:	REPRESENTING:	LOCATION:
Richard D. Seba	Shell Oil co.	Midler
N Dubaine	RWRyrams	SF
Harold G. Vest	Tidauster Oil Co.	Milland
PHILIP A. HOGAN	TIDEWATER DIL CO	DURANGO, COLO.
C.C. KENNEDY	INDEPENDENT	FARMINGTON, N.M
Joe & Kamez	OCC	Hobbs
lichant & morrise	Seth, Montgomery, Jekence;	Contiene - Santa ?
James P. Boylan	Continental Oil Co	
Jose Kellshi	Kellahi & Fox	Sola Fe
thomas F. Bekleven	Carter Fountations Frod. Co	Sawa Fe
Robert D. Fitting	Carter Foundation Frod	to Midland Tag
James C. Vandines	C.T.V. Oil & Was Co.	Farmington With
HUGH J. MITCHELL	MITCHELL DICCO	FARMINGTON
R.M. ANDERSON	SINGLAIR OHLA CO	MIDLAND
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## EXAMINER HEARING SANTA FE , NEW MEXICO

## REGISTER

NAME:	REPRESENTING:	LOCATION:
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Whowksp	Bisl amer Old	o. Dallan
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MR. NUTTER: We will call next Case 3353.

MR. DURRETT: Application of Tesoro Petroleum Corporation to amend Order No. R-2807, McKinley County, New Mexico.

MR. MORRIS: Richard Morris of Seth, Montgomery,
Federici and Andrews, Santa Fe, New Mexico, appearing for
Tesoro Petroleum Corporation in Case 3353. We will have one
witness, Mr. G. M. Andreen. I ask that he stand and be
sworn.

(Witness sworn.)

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

MR. NUTTÉR: Are there other appearances in Case 3353?

MR. VEST: Harold Vest with Tidewater.

MR. HOGAN: Phil Hogan with Tidewater.

## G. M. ANDREEN

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

## DIRECT EXAMINATION

## BY MR. MORRIS:

Q Mr. Andreen, will you state your name, where you reside, by whom you are employed and in what capacity?

A My name is G. M. Andreen, I am employed by Tesoro



Petroleum Company. I live in San Antonio, Texas and I am a Vice President of that company.

Mr. Andreen, have you previously testified before the New Mexico Oil Conservation Commission or one of its examiners and had your qualifications made a matter of record?

A I have.

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

MR. NUTTER: They are.

Q (By Mr. Morris) Mr. Andreen, have you been familiar with the development by Tesoro Petroleum Corporation and its predecessor, Texas Star Petroleum Company, since the beginning of unitization in the Hospah field?

A I have.

Q Did you testify for the company in Case No. 3132, in which case the waterflood project in the Hospah Unit was approved?

A Jaid.

Q Are you familiar with recent developments in this area?

A I am.

Q Would you relate to the Examiner the development of the waterflood project in the Hospah field and unit, and with particular emphasis on the development in the north end



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of the field?

A As a result of the unitization and secondary recovery hearing we were granted permission to drill injection wells around the periphery of the unitized area, which is now known as the Hospah Sand Unit. These wells are shown on the exhibit, they are wells 61, 60, 67, 66, 65, 64, 63 and 62 were the ones that were covered in the original application.

Q You are referring to what has been marked Exhibit No. 1 in this case?

- A Right.
- Q All right.

A When we started the development work we drilled wells 60 and 61 and found about what we expected and we moved up and drilled Well No. 64, which is up in the northeast corner of the unit area. We encountered a little more oil section in that well than we anticipated and we actually tried to see if it would make a commercial producer and it would not, so it was made into an injection well.

As a result of that our next well we drilled was well 63, which is straight west almost of 64. We, at the time, and from the geological information we had available at the time, we started all this development program, we expected 63 to encounter the sand, oh, about five or six feet above the oil and water contact. Instead we encountered considerably better



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oil saturation section than we expected and we were able to make that well or to establish commercial production from that well, which was well 63.

As a result of the information that we had obtained from 64 and 63 we drilled well 68, which was not originally approved. We drilled it at our risk at that irregular location and it was drilled and completed as an injection well. It hit the sand about where we expected with the new formation. We knew from wells 64, 63 and 68 that the original location for well 62 as it was originally approved, now 62 is on the west side a little bit southwest of 63, the original location of 62 was farther east than it shows on this map. It was over, oh, about 660 feet, I think, east of that west line. You perhaps have the exact location.

We knew that that original location would not be correct to give us an injection well from this new data that we had acquired, so we moved it west so that we could get out as far as we wanted for periphery injection well and we had to make 62 an irregular location because the Shell pipeline that carries the oil from this field runs 330 along that line, so we brought it in a little bit to miss that pipeline.

So well 62 where it is now positioned is an irregular location and we drilled it originally intending for it to be an injection well. We again encountered good saturation and



were able to establish commercial production in that well. We had, and it is shown on our exhibit, we had a tentative location, we made two additional locations, Well No. 69 as an injection well, which is north of 62, really kind of as a replacement well for 63 which we wanted to make a producer, and we made a tentative location for Well 70 which has not been drilled and we have cancelled that location as of right now.

So our injection wells as they exist now are the originally approved locations on 61, 60, 67, 66, 65, and 64. The two new wells are 69 and 63 for injection wells. Two wells that were originally scheduled to be injection wells are 63 and 62 and these we have established commercial producing rates out of those and would like to make those producers.

- Q Mr. Andreen, what control did you have in this northwest part of the unit upon which your original opinions and projections were based?
- Primarily the old records that were obtained from the dry hole recorded as Well No. 31 of the Wilson State on the west side of the field.

Incidentally, this field was developed, oh, originally in 1927 is when it started with additional majority, or the majority of the development occurring in the early '40's,



apparently the information on Well 31 is in error or there is another fault in that position that we have no control of, but it was the thing that controlled the extent or what we thought was the extent of the sand in this northwest quadrant.

- Q The picture as you now see it is depicted on Exhibit No. 1?
  - A Yes.
  - Q That is the structure --
- A That's the structure on top of the Hospah sand incorporating the new information that we obtained from the drilling and coring of these new wells.
- Q Were the additional wells drilled as injection wells here and the non-standard wells that have been drilled, drilled in consultation with the New Mexico Oil Conservation Commission District Office?
- A Yes. We filed the normal applications to drill and drilled these subject to the rules of this hearing.
- O I think there is one well we have not talked about here and that is Well No. 71 which is shown on the map as being right on the quarter quarter section line. What is the actual location of that well?
- A It's about ten feet off of that section line just south of it, I believe.
  - Q What is the status of that well?



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1120 SIAMS BLDC. • P.O. BOX 1092 • PHONE 240-6691 • ALBUQUERQUE, NEW MEXICO 1213 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO A The story of that well, Well No. 18, which lies just north and east of Well 71, was drilled, oh, in the middle '40's, '45 or '46, and had a split joint in the casing on the original completion records. They set a liner in that well at that time in attempting to cure this. We have had some funny water performance on Wells 35, 34, 28, 17, and around Well No. 18, historically and in the process of doing the work that they were doing out there we tried No. 18 and we found out that this casing was leaking and it's probably been letting some water on a sort of a dump flood part of the Hospah sand.

So we have now plugged 18 and we drilled 71 as a replacement well for 18 and we do not want to drill it as a twin well because we felt the sand right in the vicinity of 18 was already watered out due to the leak and Well 71 has been drilled and it was drilled at our risk, tests about ten barrels of oil and 40 some barrels of water on the last test that I have on it, and we just tested it and it has been shut-in waiting the outcome of this hearing.

So what Tesoro seeks by the application in this case is a modification or amendment of the order previously entered in this waterflood hearing to approve two new injection wells, to approve two unorthodox locations, and to permit Well No. 63 to be operated as a producing well rather than as an injection well?



Q Is the substance of your request as set forth in the application that was filed in this case?

A Yes.

Q And the footage location for each of the wells involved here is as set forth in that application?

A Those were taken right from the surveyor's plat.

Q Yes. Now, with the conversion of Wells 62 and 63 from injection now to producing wells, and making Wells 68 and 69 injection wells, is it your opinion that you will have a successful and efficient waterflood pattern in the north end of the field?

A Yes. We will have an adequate injection pattern in that end of the field and we have also, in the course of this development, added about twenty percent to the floodable acre feet in the unit, and consequently more reserves and future potential for the area.

Q And the new injection wells are located within the boundaries of the Hospah Sand Unit?

A They are.

Q As to the wells for which unorthodox locations are being sought, do any of those unorthodox locations move toward acreage outside of the unit?

A No.



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Q Do you have any further comments you would care to make with respect to your application?

A I have none that I can think of that we haven't covered.

Q Vas Exhibit No. 1 prepared by you or under your direction?

A It was prepared by our Drafting Department.

MR. MORRIS: We offer Exhibit No. 1.

MR. NUTTER: Tesoro's Exhibit No. 1 will be entered in evidence.

(Whereupon, Tesoro's Exhibit No. 1 was offered and admitted in evidence.)

MR. MORRIS: That's all we have.

### CROSS EXAMINATION

## BY MR. NUTTER:

Q The waterflood order authorized Wells 61, 67, 66, 65 and 64 at their locations and where they are drilled?

A That's correct.

Q It also authorized No. 62 and 63 to be water injection wells?

A Right. Now it authorized the location where 63 now exists.

Q For an injection well?

A for an injection well.



SIMMS BUDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, MSW MEXICO PERST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO Q It authorized Well 62 but at a slightly different location?

A Right.

Q 62 is a producing well, as is 71, and these two wells are on unorthodox producing well locations?

A Correct.

Q So you are seeking approval for those. You are also seeking approval of injection wells at 68 and 69 with the location as given, 2310 from the north and 940 from the west for 69 and 990 from the north and 2310 from the east for 68. There's one other thing in the application, Item 6 you seek the amendment of the order to rescind the authorization of a water injection 1650 from the south and 1640 from the west of 36, would that be the original location for No. 62?

MR. MORRIS: 63.

A I think it is the original location for 62.

MR. MORRIS: Pardon me, you are right. One other thing that we are covering here that was not mentioned, we are also requesting to use No. 63 as a producing well rather than an injection well.

MR. NUTTER: Right.

MR. MORRIS: But it's at a regular location.

A It's a regular location.

Q (By Mr. Nutter) The draftsman put No. 71 right on



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1120 SIMMS BEDG. • P.O. BOX 1092 1213 FIBST NATIONAL BANK EAST • the line but I believe it would actually be in the southeast of the southeast.

A I helieve it would. I think it's just ten feet off the line.

MR. MORRIS: The description is given in the application, 1310 from the south line and 2,000 feet from the west line.

MR. NUTTER: We have to have a unit letter to designate the well so it would be in the unit?

MR. MORRIS: Right.

MR. NUTTER: Are there any other questions of Mr. Andreen?

MR. VEST: Harold Vest with Tidewater again. Let me ask you --

MR. DURRETT: Mr. Vest, are you an attorney?

MR. VEST: No.

MR. DURRETT: You can not ask a question of the witness. We have an Attorney General opinion that you can not practice before the Commission without having a law degree.

MR. NUTTER: Are there any questions of Mr. Andreen? He may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Morris?



MR. MORRIS: No, we have nothing further to offer.

MR. NUTTER: Does anyone have anything further to offer in Case 3353?

MR. VEST: Could I ask a question now?

MR. NUTTER: You may make a statement.

MR. VEST: I would just like to find out, I know that well 64 is 330 feet south of that northeast of the northeast quarter there. Was that an application put in for that unorthodox location for that well? That doesn't match the original approved location of the 1964 hearing. I just wondered if there had been something subsequent to that.

MR. NUTTER: Do you know the location that was authorized for that well?

MR. VEST: Yes, sir. This one says it's 1990 from the north and 640 from the east line of Section 36, if that's the same one. I notice that that spot is No. 64, just about 300 feet or so north of that location.

MR. NUTTER: Mr. Andreen, is No. 64 330 feet from that line?

MR. ANDREEN: It's in Unit H, is that correct?

MR. NUTTER: That's correct.

MR. ANDREEN. I have 660 from the east and 1650 from the north line.

MR. NUTTER: Which would be 330 from the line. Do



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MR. ANDREEN: 1990 from the north and 640 from the east. That 1990, at one time we had contemplated -- this is off the record.

(Whereupon, a discussion was held off the record.

MR. MORRIS: Mr. Examiner, our information is that this Well No. 64 is 660 feet from the east line and 1650 from the north line of Section 36, which would put it at the place as shown on the plat here. The well was drilled and completed as a water injection well and forms have been filed with the Commission in connection with the well; Form C-101 was filed July 1, 1965 and approved July 19, 1965, C-103 was filed August 9, 1965, approved August 12, 1965. That form covered a change of casing program and completion method Form C-105, the well record, has also been filed.

If there is a discrepancy, and there appears to be, as between the Order No. R-2807 and where the well actually was drilled, it has not come to our attention until this time in connection with any of the forms that have been filed with the Commission. However, at this time we would move to amend our application to the effect that Order No. R-2807 be amended so that the present location of Well No. 64 be approved.

MR. NUTTER: Do you have the C-101's for the



additional, the other water injection wells?

MR. ANDREEN: I do not have them with me.

MR. MORRIS: I can give you the dates they were filed and when approved.

MR. NUTTER: I think it would be well to check the location of these other wells and determine whether they were drilled at the location that was authorized by the waterflood order. They're a matter of record in our files.

We will take a fifteen-minute recess and check those out.

MR. VEST: There is a second location there, I believe it's 1950 from the north and 1960 from the east, which is one of the locations that was initially authorized, and I don't show a well to be there either. Evicently that was moved over to another location, is that correct?

MR. NUTTER: We will take a fifteen-minute recess and you can check out all those locations.

(Whereupon, a recess was taken.)

MR. NUTTER: The hearing will come to order, please.

MR. MORRIS: Mr. Examiner, during the recess we have obtained from the Commission's files the well files on Tesoro's Wells No. 60, 61, 62, 63, 64, 65, 66, 67, 68 and 69, and have compared the C-124 well location plats contained in those files with the authorization of Order No. R-2807, and with the locations as shown on our application in the present



That comparison revealed the following information: It case. shows that Well No. 60 is 2310 from the south line and 1060 feet from the west line. It shows Well No. 61 to be 3650 from the south line and 1,000 feet from the west line of Section 1. It shows Well No. 62 not to have been drilled. shows Well No. 63 not to have been drilled at the approved location, but the C-124 in the file now shows it to have been drilled at the location as shown on this plat. It was drilled 1980 from the north line and 2310 from the west line of section 36.

62 is not 1980 from the north. MR. NUTTER:

MR. MORRIS: Excuse me, I was talking about 63. 62 was not drilled. 63, the C-124 shows it to be drilled 1980 from the north line, 2310 from the west line of 36 as a producer rather than as an injection well at that point. other words, the first well as authorized by R-2807 was just not drilled at that location.

MR. NUTTER: Right.

MR. MORRIS: Well No. 64 is 1650 from the north line and 660 from the east line of Section 36. Well No. 65 is 990 from the south line and 250 from the east line of Section 36. Well No. 66 is 330 from the north line and 330 from the east line of Section 1. No. 67 is 2,070 feet



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from the north line and 1590 feet from the east line of Section 1; and Well No. 68 is 990 from the north line, 2310 from the east line of Section 36.

Well No. 69 is shown to be 2310 from the north line, 940 feet from the west line of Section 36.

In view of the information shown directly from the well files we would at this time request that our application be supplemented, all the well locations as shown in our application itself, the locations are correct, however, we would at this time move to supplement our application to correct and to provide authorization for the Wells 60 through 69 as those wells are shown to be located by the C-124's and as I have just read them into the record.

MR. NUTTER: Is there objection to the supplementing of the application to include the location of the previously authorized injection wells at the locations as read by counsel?

MR. VEST: I'm afraid we will probably have to oppose the location of Well No. 64 as being 330 feet south of our 40-acre tract in the northeast of the northeast of Section 36 as an injection well.

MR. MORRIS: Before the Examiner rules on the point could we refer the Examiner to the data as shown in its well file on Well No. 64 referring to Form C-103, filed by Tesoro Petroleum with the Commission on August 12, 1965? Without



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reading all of the information shown on this Form C-103, the last part of the test shown to have been run on July 31, 1965, ran McCullough GRN collar log to 1,814 feet, plug back denth, perforated 1798 feet to 1800 feet and 1774 feet to 1788 feet by McCullough four holes per foot. Swabbed hole with fluid level and had a show of oil after swabbing down. Oil increased to approximately two percent by 10:00 A.M., August 2, 1965, will run rods on tubing and test on pump.

I think this, coupled with what Mr. Andreen testified to on direct examination, showed that the well was tested and it was attempted to place this well on production as a commercial producer, but commercial production was not obtained and the well was converted to injection.

MR. NUTTER: I believe the last item you read there was that they planned to test it on the pump?

MR. MORRIS: Yes, will run rods and tubing and test on pump.

MR. NUTTER: Mr. Andreen, was a string of tubing and rods and a pump installed on the well?

MR. ANDREEN: Yes, it was, and the well was tested for approximately a week.

MR. NUTTER: What was the result of the test?

MR. ANDREEN: We were never able to establish more than half a barrel of oil a day and about 20 barrels of water



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as I recall the test. I don't have the figures with me but it was non-commercial insofar as we were concerned and we converted it to injection.

MR. NUTTER: And you tested it for approximately a week?

MR. ANDREEN: Approximately a week.

MR. NUTTER: And the maximum production was half a barrel of oil per day?

MR. ANDREEN: Right.

MR. NUTTER: And the location, as authorized by the first order for a well in Unit H, was 1990 from the north and 660 from the east?

MR. MORRIS: 640 from the east. The present location is 1650 from the north and 660 from the east line.

MR. NUTTER: And at this time, in effect what you are seeking to do is abandon the previously-authorized location and drill a substitute well 1650 from the north and 660 from the east?

MR. MORRIS: That is correct.

MR. NUTTER: For water injection purposes?

MR. MORRIS: Right.

MR. NUTTER: On the other wells that you mentioned and you gave the descriptions for them, are they and each one of them different from the location that had previously



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In some cases there are variations, MR. MORRIS: usually of ten feet on some of the wells. I might state here that the section appears to be, looking at some of the 124's, that the section appears to be irregular and apparently the surveyor seems to have had some difficulty in making these locations. I just don't have any further facts to offer at this point on that, but some of the locations are off ten feet. I might go through these and point out where the discrepancies are.

MR. NUTTER: If you would read the approved locations. We have the actual location, you read those.

MR. MORRIS: Yes.

MR. NUTTER: 61, what was the approved location?

MR. MORRIS: 61 the approved location is 3640 from the south line, 1,000 from the west line.

MR. NUTTER: So that's 10 feet off?

MR. MORRIS: Right.

MR. NUTTER: 60?

MR. MORRIS: 2310 from the south line, 1060, the

authorization is 1050 from the west line.

MR. NUTTER: So that's 10 feet off?

MR. MOKRIS: Yes.

MR. NUTTER: 67?



MR. MORRIS: 2,070 feet from the north line, excuse me, I am sorry, the authorization is 3190 from the south line and 1590 feet from the east line.

MR. NUTTER: So that's a couple of hundred feet difference?

MR. MORRIS: Well, no, the authorization is from the south line, the footage description I gave you was from the north line.

MR. NUTTER: 66?

MR. MORRIS: 66 seems to be all right. It's 330 from the north line and 330 from the east line of Section 1.

MR. NUTTER: 65?

MR. MORRIS: It's also all right, 990 from the south line, 250 from the east line of 36.

MR. NUTTER: And the others are already covered as far as the locations are concerned?

MR. MORRIS: Yes.

MR. NUTTER: The application will be amended to include substitution of certain new locations. Do you have anything further, Mr. Morris?

MR. MORRIS: No, we have nothing further to add.

MR. NUTTER: Any questions of Mr. Andreen? Does anyone have anything they wish to offer in Case 3353?

MR. HOGAN: I would like to make a statement. I am



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that the No. 64 well as shown is actually 330 feet from where it was supposed to be and, therefore, 330 feet from our 40-acre tract. I am wondering if there is any indication of an oil-water contact having been established in this field to show that the No. 64 well is actually water-productive insofar as one week of production does not seem adequate in the light of their production history on wells in the area.

Oftentimes water has been made originally and has gone to oil and, secondly, the core analysis on No. 64 well indicates that the sand is oil-productive and our 40-acre tract in the northeast northeast appears to be structurally as high or higher, a portion of it, as the No. 64 well.

The No. 30 well, which is to the south of the No. 64, had trouble. I don't know whether it was casing trouble or what, the records are not too clear, but that may have had some indication of the water having been made due to casing leak as was presented in the previous well. I believe it was the No. 18, the 71 was drilled in lieu of the 18.

Phil Hogan with Tidewater Oil and I would like to point out

I just do not think it has been established the No. 64 well is a water-productive well in the Hospah sand. The well was drilled deeper than the Hospah sand into a known water-bearing sand in the Callup formation and was plugged back, but I don't see any proof that the water may not be coming from



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that lower sand and the quality of water that was produced during that week, I don't know what it is, whether it is salt water or free water. I think there's some doubt as to the use of the 64 well as an injection well.

MR. NUTTER: Thank you, Mr. Hogan.

MR. MORRIS: I would like to make a statement, if I may. The only evidence before the Examiner concerning the No. 64 well is that as testified to by Mr. Andreen concerning the efforts made by Tesoro to convert this well to a commercial well and that failing the conversion or the use of it as a water injection well. Tesoro's evidence has shown here that where it has been possible to convert the intended injection well to a producing well, that that has been done. It has been done in several instances. They felt it could not be done with respect to No. 64. Unfortunately we do not have the actual tests on the well here with us today. We would be glad to furnish those to the Examiner and to Tidewater if that procedure would be in order.

MR. NUTTER: We would be happy to receive a tabulation of the daily tests on the well. I am sure Tidewater would appreciate receiving the same.

MR. MORRIS: Would that be satisfactory?

MR. HOGAN: That would be fine if it would show the type of the water, for one thing.



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 ALBUQUERQUE, NEW MEXICO
ALBUQUERQUE, NEW MEXICO • 93

MR. NUTTER: Can you furnish that information to us within ten days?

MR. ANDREEN: Yes, actually I'm going from here to the field and I will pick them up in the field tomorrow.

MR. NUTTER: Do you have anything further, Mr. Morris?

MR. MORRIS: No, we have nothing further.

MR. VEST: If this well, as well as Well No. 68, is allowed to be an injection well or wells, I would like to know what rates are intended to be put in those wells, if I may.

MR. NUTTER: Mr. Andreen, what is the rate of injection that's contemplated for your waterflood project here?

MR. ANDREEN: We plan to put roughly a thousand barrels a day per well. Now some wells will take more than others, depending on feet of sand in the individual wells, but it will average roughly a thousand.

MR. NUTTER: Have you actually started water injection in any of the wells?

MR. ANDREEN: Yes, we have in some of them.

MR. NUTTER: What is the rate that you are using?

MR. ANDREEN: We are not up to a maximum weight.

We are putting about, oh, somewhere between two to five hundred barrels a day in the wells now, they are varying right



now.

MR. NUTTER: How many water supply wells do you have?

MR. ANDREEN: One.

MR. NUTTER: What's the productivity of that well?

MR. ANDREEN: That well was originally tested at 4800 barrels a day. It has a BJ submersible pump in it, the water is coming from the Dakota.

MR. MORRIS: Mr. Andreen, your No. 68 well is intended to be a replacement for the No. 63 well, I believe you said?

MR. ANDREEN: in effect, yes.

MR. MORRIS: It's a step-out?

MR. ANDREEN: It's a step-out.

MR. MORRIS: To make sure we flooded all -- And the No. 69 is intended to be a step-out from the No. 62 which became a producer?

MR. ANDREEN: Right.

MR. MORRIS: As I understand you, the 68 and 69 will be operated in the same fashion as Wells Nos. 63 and 62 which previously had been authorized as injection wells?

MR. ANDREEN: Injection wells, right.

MR. MORRIS: To this end, or to show this we would ask the Examiner to incorporate into the record of this case



the record and exhibits in Case No. 3132 which was the original hearing on this waterflood project.

MR. NUTTER: That was the hearing in which the casing and cementing programs as well as water injection rates and so forth were gone into?

MR. MORRIS: Yes, sir.

MR. NUTTER: What was the number of the case?

MR. MORRIS: 3132, Order No. R-2807.

MR. VEST: I have one other --

MR. NUTTER: The record in the previous case will be incorporated. This is very inconvenient, Mr. Vest. was the additional question you had?

MR. VEST: Well, it appeared to us that the producing limits of the field hadn't actually been determined and we were anticipating possibly drilling a well up in our 40-acre tract, and in the event that these offsetting wells have injection rates of a thousand barrels a day, what type of allowables would our well be given in that 40-acre tract?

MR. NUTTER: It's been the normal procedure of Commission operation that the operator of a water injection project receives a project allowable and he can produce his project allowable from the well or wells that he sees fit. A well offsetting an active water injection project is normally held to a basic top unit allowable for that pool.

I think in the past there have been some minor exceptions for a limited period of time.

MR. VFST: What happens in the case where you have a well, say we had a well and the capacity of the well exceeded the allowable, would there be any chance of us requesting an increase in allowable?

MR. NUTTER: I say in some cases there have been exceptions to that rule made for a limited period of time. There's also been some applications for the same thing that were turned down. In that event they just slowed their pumps down.

MR. VEST: What type of footage locations are we allowed in this 40-acre tract?

MR. NUTTER: You are allowed to drill a well in that 40-acre tract not closer than 330 feet to the outer boundary of the 40.

MR. VANDIVER: James C. Vandiver, and I work in Section 12. I wonder if I might at this time ask Mr. Andreen a question. We weren't going to make an appearance but this thing skipped around a little bit and we now have a question or two

MR. NUTTER: I don't know if we excused Mr. Andreen or not, but he's still on the stand. Are you representing your self?

MR. VANDIVER: Yes, I am and we are also a working



interest owners in Section 2 which offsets two of their injection wells, I think 60 and 61 and one which is not drilled.

MR. VANDIVER: I would like to ask Mr. Andreen, if I may, if they ran any tests as to the commercial possibilities of two injection wells, 61 and 60?

MR. ANDREEN: Yes.

MR. VANDIVER: What were the results?

MR. ANDREEN: I don't recall specifically. I don't have those records with me. We decided that they were non-commercial.

Just as a little background, we had originally planned to set 2-7/8ths fiberglass pipe in all of these injection wells and as a result of the cores it looked like some of them might have commercial possibilities, so we had to amend our original intentions and we set 4-1/2 inch pipe in all but two of the wells, those being 68 and 69; and we tested them, each one was tested with a pump jack similar to what we did on 64, and out of all of the tests that we ran the only two commercial completions we were unable to make were 62 and 63.

MR. VANDIVER: Did you test wells 60 or 61 with a pump jack?

MR. ANDREEN: Yes.

MR. VANDIVER: Could we have your information,



243-6691

access to your tests and all?

MR. ANDREEN: Yes. I'll have to pick them up in the field.

MR. VANDIVER: That's all right, we will talk to you. MR. NUTTER: In other words, all these various wells that were drilled as water wells were tested with a pump jack. Will you furnish us with a tabulation of the daily production tests on those wells within ten days?

MR. ANDREEN: Yes.

MR. NUTTER: Do you have any further questions, Mr. Vandiver?

MR. VANDIVER: No.

MR. NUTTER: Does anyone have any further questions of Mr. Andreen? He may be excused. Does anyone have anything further to offer in Case 3353?

MR. DURRETT: I would like to state that the Commission has received a letter from Mr. Frank Irby stating that they offer no objection to the granting of the application providing that the well construction and equipment specifications for injection wells are equal to or better than those in the original plan.

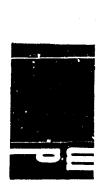
MR. NUTTER: Thank you. If there's nothing further in Case 3353 we'll take the case under advisement.



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Tesoro's No. 1

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STATE OF NEW MEXICO )

COUNTY OF BERNALILLO )

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 21st day of January, 1966.

John Dearnley
NOTARY PUBLIC

My Commission Expires: June 19, 1967.

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Horac Oil Conservation Commission

#### TESORO PETROLFUM CORPORATION

533 BUSBY DRIVE

512-TAYLOR 4-0261

SAN ANTONIO, TEXAS 78209

January 14, 1966

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

Attention Mr. Dan S. Nutter

Re: OCC Case No. 3353, Hospah Sand Unit, Hospah Field, McKinley County, New Mexico

#### Gentlemen:

The referenced case was set for hearing on application of Tesoro Petroleum Corporation for the purpose of modifying and amending certain portions of Order No. R-2807 which resulted from the hearing on Case No. 3132 concerning the application of secondary recovery to the Hospah Field. Hearing on the referenced case was held January 5, 1966, and during the course of this hearing certain additional information was requested. In compliance with this request there is attached a brief summary of the history of each well drilled in the Hospah Sand Unit since the issuance of Order No. R-2807 on November 24, 1964 and a structure map and isopach map which incorporate the new data.

The concept of the water-injection program for the Hospah Sand Unit as presented in the testimony in Case No. 3132 was that water-injection wells were to be drilled on the periphery of the oil-productive sand in the Hospah Sand Unit area and that by the injection of water into these wells, additional oil reserves would be obtained from the field. By Order No. R-2807 locations for eight proposed injection wells on what was then thought to be the periphery of the productive area were approved. At that time, and as is indicated in the testimony submitted in Case No. 3132, the original oil-water contact at the north end of the field was thought to be at a +5320 feet, and the area between the two faults (see attached plats) was thought to be at a +5350 feet above sea level. The new information indicates that both of the contacts have moved up at least 5 feet and that they are now at +5325 and +5355 feet above sea level.

The first well that was drilled is what is now known as well No. 63 located in Unit F, 980 feet from the North line and 2310 feet from the West line of Section 36, Township 18 North, Range 9 West. This is a regular location

insofar as Unit F is concerned and was drilled to confirm the geological interpretation on the northwest side of the Unit area. The sand top was encountered approximately 10 feet higher than anticipated, and as a result we were able to establish commercial production in well No. 63, and the geological interpretation was altered significantly by the new data.

The second well drilled is what is now known as well No. 64 located in Unit H, 1650 feet from the North line and 660 feet from the East line of Section 36, Township 18 North, Range 9 West. At the time of the secondaryrecovery hearing the injection wellon this northeast side of the Unit area was to be created by reworking the old producing well, No. 30-A, located in the same Unit. However, with the indication of a broader and flatter nosing of the structure obtained from drilling well No. 63, it was thought that if the sand top were also found to be 10 feet higher on the northeast side of the field, converting well No. 30-A into a water-injection well, would prevent the injection water from sweeping a portion of productive sand and, therefore, would be inadvisable. Well No. 64 was, therefore, repositioned at the aforementioned location, drilled and tested. The sand top in well No. 64 was encountered at 5328 feet above sea level. This is where the sand top was anticipated, and it serves to confirm the structure map presented at the secondary-recovery hearing. As is reflected on the attached well record a 45-day pumping test of well No. 64 showed a final test of 140 barrels per day of fluid with a trace to one per cent oil. The well was considered to be noncommercial and was equipped as an injection well.

The third well drilled was No. 68, located in Unit B, 2310 feet from the East line and 990 feet from the North line of Section 36. The original injection plan called for the northernmost injection well to be created by reworking the old producing well No. 29 in Unit G, Section 36, Township 18 North, Range 9 West. However, as a result of the new geological information obtained from wells Nos. 63 and 64, it appeared advisable to move the location of the injection well north to achieve the peripheral injection plan as originally envisioned. Core analyses on well No. 68 indicated that the entire section was wet, and this well was completed as an injection well.

The fourth well drilled was No. 62 on the northwest side of the field. This well was originally scheduled to be drilled in Unit K, Section 36, Township 18 North, Range 9 West; however, the new geological information dictated that the location of this well should be moved westward if it were to used as an injection well. As a result, well No. 62 was located 1900 feet from the South line and 1140 feet from the West line of Section 36. This is an irregular location, being only 180 feet west of the East line of Unit L, this position being

State of New Mexico - 3 - January 14, 1966

dictated by the position of the oil pipeline leading from the field. The sand top in well No. 62 was encountered about 35 feet higher than anticipated by the original geological interpretation and approximately 15 feet higher than anticipated at the time the location was made. As a result of this we were able to establish commercial production from well No. 62.

The fifth well drilled was No. 61, located in Unit E of Section 1 on the southwest side of the Unit area. To afford a location for the rig it was necessary to locate this well 10 feet north of the location approved in Order No. R-2807. As is indicated on the attached well history, this well was tested and proved noncommercial before being converted to an injection well.

The next well drilled was No. 60 located in Unit L of Section 1 on the southwest side of the Unit area. To avoid the flood plain of a dry creek which runs through the property, well No. 60 was located 10 feet east of the location approved by Order No. R-2807. As is indicated on the attached well history, this well was tested and proved noncommercial before being converted to injection.

The next wells drilled were Nos. 65 and 66 located in Unit P of Section 36 and Unit A of Section 1 respectively on the east side of the Unit area. Both of these wells were drilled at the locations approved by Order No. R-2807, were tested, found noncommercial, and completed as injection wells.

The next well drilled was No. 67 in Unit H, Section 1 on the southeast side of the Unit area. To avoid the drainage area of the dry creek which flows through the property, this location was moved 20 feet north of the location approved by Order No. R-2807. This well is located well inside the Unit area and was not tested prior to equipping it as an injection well.

The next well drilled was No. 69 located in Unit E of Section 36 on the northwest side of the Unit area. This well was drilled at a regular location, and core analysis indicated that the entire sand section was wet; therefore, the well was completed as an injection well.

The last well drilled was No. 71 located in Unit N of Section 36, 1310 feet from the South line and 2000 is at from the West line. This well was drilled and completed as a producing well to replace No. 18 located in Unit K of Section 36. Testimony in regard to this well is already of record in Case No. 3353.

As previously stated, it is thought that the original oil-water contact has moved upstructure approximately 5 feet in both areas of the field. The present oil-water contact and the original oil-water contact are indicated on the attached

Very truly yours,

GMA::nbd Attachment Gilbert M. Andreen

# Summary of Well History Hospah Sand Unit, Hospah Field McKinley County, New Mexico

### Well No. 60

(Unit L, 2310' from the South line and 1060' from the West line of Section 1, Township 17 North, Range 9 West)

To avoid the flood plain of a dry creek which runs through the Hospah Sand Unit, this well was drilled at the aforementioned location which is ten feet east of the location approved by Order No. R-2807.

Spudded 8-18-65. Ran 4 1/2" casing 8-21-65. Perforated 1559-90 and 1600-01. Tested 6 days with 1 1/2" pump, 36" stroke, 14 strokes per minute. Final production test 110 barrels per day of water with rainbow of oil. Well noncommercial. Equipped for use as injection well.

### Well No. 61

(Unit E, 3650' from the South line and 1000' from the West line of Section 1, Township 17 North, Range 9 West)

To obtain suitable location for the drilling rig, this well was drilled at the aforementioned location which is 10 feet north of the location approved by Order No. R-2807.

Spudded 8-12-65. Ran 4 1/2" casing 8-17-65. Perforated 1632-34, 1636-38 and 1640-56. Tested 6 days with 1 1/2" pump, 36" stroke, 10 strokes per minute. Final test 75 barrels a day of water with trace of oil. Well noncommercial. Equipped for use as injection well.

### Well No. 62

(Unit L, 1900' from the South line and 1140' from the West line of Section 36, Township 18 North, Range 9 West)

This well was drilled at the aforementioned regular location and was not covered by Order No. R-2807.

Spudded 8-8-65. Ran 4 1/2" casing 8-10-65. Perforated 1666-68, 1670-72, 1678-80, 1683-85, 1688-90 and 1696-98. Tested 3 days with 1 1/2" pump, 36" stroke, 10 strokes per minute. On final test well made 44 barrels of fluid per day, 90 per cent water and 10 per cent oil with water decreasing. Well considered commercial. Equipped as a producer.

## Well No. 63

(Unit F, 1980' from the North line and 2310' from the West line of Section 36, Township 18 North, Range 9 West)

This well was drilled at the aforementioned regular location as the first well in the new development program for the purpose of confirming the geological interpretation in the northwest portion of the Hospah Sand Unit. The sand was encountered approximately 10 feet higher than anticipated, and as a result the geological concept of the areal extent of the productive section in this portion of the field was altered.

Spudded 7-18-65. Ran 4 1/2" casing, 7-23-65. Perforated 1732-42. Tested 6 days with 1 1/2" pump, 36" stroke, 10 strokes per minute. Final test 33 barrels per day of total fluid of which 27 barrels were water and 6 barrels oil. Well considered commercial and equipped as a producer.

# Well No. 64

(Unit H, 660' from the East line, 1650' from the North line, Section 36, Township 18 North, Range 9 West)

Because of the new geological information obtained from the drilling of Well No. 63 this well was drilled at the aforementioned location which is 340' north and 20' west of the location approved for an injection well by Order No. 2807.

Spudded 7-27-65. Ran 4 1/2" casing 7-31-65. Perforated 1774-88 and 1798-1800. Tested 45 days with 1 1/2" pump, 30" stroke, 22 strokes per minute. Final test 140 barrels per day of fluid, trace to 1 per cent oil. Well noncommercial. Equipped for injection.

# Well No. 65

(Unit P, 990' from the South line and 250' from the East line of Section 36, Township 18 North, Range 9 West)

This well was drilled at the aforementioned location which is the same as that approved by Order No. 2807.

Spudded 8-22-65. Ran 4 1/2" casing 8-26-65. Perforated 1644-48, 1652-54, 1662-72, 1674-76, 1682-84 and 1690-92. Tested 4 days with 1 1/2" pump, 36" stroke, 12 strokes per minute. Well pumped off in short time. Final test 5 barrels per day of fluid, 60 per cent water, increasing. Weil considered noncommercial. Equipped for injection.

#### Well No. 66

(Unit A, 330' from the North line and 330' from the East line of Section 1, Township 17 North, Range 9 West)

This well was drilled at the aforementioned location which is the same as that approved by Order No. R-2807.

Spudded 8-27-65. Ran 4 1/2" casing 8-30-65. Perforated 1616-18, 1622-26, 1632-34, 1639-41 and 1652-54. Tested 4 days with 1 1/2" pump, 36" stroke, 12 strokes per minute. Well pumped off in short time. Final test 6 barrels of fluid per day, 60 per cent water, increasing. Well noncommercial. Equipped as injection well.

#### Well No. 67

(Unit H, 3210' from the South line and 1590' from the East line of Section 1, Township 17 North, Range 9 West)

To avoid the flood plain of a dry creek which runs through the sand Unit, this well was drilled at the aforementioned location which is 20 feet north of the location approved by Order No. R-2807.

Spudded 8-31-65. Ran 4 1/2" casing 9-3-65. No production test run. Well equipped for use as injection well.

### Well No. 68

(Unit B, 2310' from the East line and 990' from the North line of Section 36, Township 18 North, Range 9 West)

This well was drilled at the aforementioned location as a result of the new geological information obtained from the drilling of wells Nos. 63 and 64. This well lies approximately 960' north and 350' west of well No. 29 whose conversion to injection was approved by Order No. R-2807.

Spudded 8-3-65. Ran 2 7/8" fiberglass casing 8-6-65. Perforated 1760-80. Cores indicated entire section water productive. No production tests. Completed for use as injection well.

#### Well No. 69

(Unit E, 2310' from the North line and 940' from the West line of Section 36, Township 18 North, Range 9 West)

# Well No. 69 (continued)

This well was drilled at the aforementioned location as a result of the new geological information obtained from the drilling of wells Nos. 62, 63, 64 and 68.

Spudded 9-10-65. Ran 2 7/8" fiberglass casing 9-13-65. Cores indicated entire section water-productive. No production test. Well equipped for use as injection well.

## Well No. 70

Not drilled

### Well No. 71

(Unit N, 1310' from the South line and 2000' from the West line of Section 36, Township 18 North, Range 9 West)

This well was drilled as a producing well to replace No. 18 which was plugged and abandoned due to casing failure.

Spudded 9-16-65. Ran 4 1/2" casing 9-20-65. Perforated 1667-78, 1688-91, 1700-05 and 1714-17. Tested 4 days with 1 1/2" pump, 36" stroke, 12 strokes per minute. Final test 39 barrels per day total fluid, 32 barrels water and 7 barrels oil. Well shut in awaiting approval of Oil Conservation Commission.

# OIL CONSERVATION COMMISSION P. O. BOX 2088 SANTA FE, NEW MEXICO

April 6, 1966

Tesoro Petroleum Corporation 533 Busby Drive San Antonio, Texas 78209

Attention: Mr. G. M. Andreen

Gentlemen:

68.00°

Reference is made to your letter of March 17, 1966, concerning the maximum allowable which your Hospah Unit Waterflood Project will be eligible to receive under the provisions of Rule 701-E.

The maximum allowable, assuming eight injection tracts, 14 producing tracts, and 21 extra producing wells, would be 2030 barrels. No credit, other than a standard 40-acre allowable of 70 barrels, can be given to the six wells in Unit N of Section 36, inasmuch as these wells technically are not in the waterflood project area because this 40-acre tract does not directly nor diagonally offset a 40 with an injection well on it. (These wells will be shown in the lower portion of your monthly Form C-120.) Nor can credit be given the three shut-in wells until such time as they are restored to production.

Requests for allowable and allowable changes, subject to the above maximum, may be made whenever necessary by letter to Aztec office.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

# OIL CONSERVATION COMMISSION P. O. BOX 2088 SANTA FE, NEW MEXICO

-2-

April 6, 1966

Tesoro Petroleum Corporation San Antonio, Texas

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr. Secretary-Director

ALP/DSN/esr

cc: Oil Conservation Commission 1000 Rio Brazos Road Aztec, New Mexico

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#### TESORO PETROLEUM CORPORATION

533 BUSBY DRIVE

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SAN ANTONIO, TEXAS 78209

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March 17, 1966

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

July 352

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

Re: Waterflood Allowable, Hospah Sand Unit, Hospah Field, McKinley County, New Mexico

Gentlemen:

By Oil Conservation Commission Order No. R-2807, dated November 24, 1964, Tesoro Petroleum Corporation was granted permission to install a waterflood on approximately 1,400 unitized acres in the Hospah Field. By Order No. R-3040, dated February 9, 1965, Order No. R-2807 was modified insofar as the location of certain new injection and producing wells were concerned. Insofar as is known, all of the necessary approvals have been obtained for waterflooding the Hospah Sand Unit, and it is now possible to reclassify the Hospah Sand Unit from a prorated to a waterflood status and to establish the allowable for the waterflood project.

By letter dated December 1, 1964, from your office to Mr. Richard S. Morris, of Seth, Montgomery, Federici & Andrews, in Santa Fe, New Mexico, Tesoro was advised that the Conservation Commission calculated the maximum allowable for the Hospah Sand Unit at 1,938 barrels per day. In the last part of 1964 during the development phase of creating the facilities necessary to waterflood the project area, three new producing wells and eight new injection wells were drilled. As of January 1, 1966 there were 44 wells capable of production (three of which were shut in), eight water-injection wells and one water-supply well in the Hospah Sand Unit. Enclosed is a list of the locations of all the producing and injection wells.

We are not quite sure how Rule No. 701-E is to be applied to the Hospah Sand Unit for the purpose of calculating the maximum Waterflood Project allowable. In our opinion there are three ways the maximum daily allowable could be calculated. These are as follows:

a. There are thirty-five 40-acre units within the unitized area known as the Hospah Sand Unit. Using this figure, the 70-barrel-a-day allowable factor and taking no credit for the injection wells, the maximum project daily allowable is calculated as follows:

	No.	Area Allow- able Factor Bbls/Day	Daily Allowable Bbls/Day
Number of 40-acre units in unitized project area	35	70	2,450
Number of pro- cucing wells	44		
Number of pro- ducing wells in excess of 4/40- acre tract	<u>3 (</u> s	ee attached list)	
Net producing wells	41		
Less: Number of 40-acre units	-35		
Excess wells entitled to allowable	7	23.33	163
	Total d	aily allowable	2,613

b. Of the thirty-five 40-acre units within the unitized area, 23 units contain either producing and/or injection wells. Using 23 as the number of participating units and the 70-barrel-a-day allowable factor, the maximum daily project allowable is calculated as follows:

-3-

	No.	Area Allow- able Factor Bbls/Day	Daily Allowable Bbls/Day
Number of 40-acre units in unitized project area	23	70	1,610
project area	23	10	1,010
Number of pro-			
ducing wells	44		
Number of producing wells in excess of 4/40 acre tract	3 (s	ee attached lis	t)
Net producing wells	41		
Less: Number of 40-acre units	-23		
Excess wells entitled to al-			
lowable	18	23.33	420
,	Total da	ily allowable	2,030

c. Of the thirty-five 40-acre units within the unitized area, 15 contain wells which are currently productive. Using 15 as the number of 40-acre units and the 70-barrel-a-day allowable factor, the maximum daily project allowable is calculated as follows:

1,657

	No.	Area Allow- able Factor Bbls/Day	Daily Allowable Bbls/Day
Number of 40-acre units in unitized project area	15	70	1,050
Number of pro- ducing wells	44		•
Number of pro- ducing wells in excess of 4/40- acre tract		e attached list)	
Net producing wells	41		
Less: Number of 40-acre units	-15		
Excess wells entitled to al- lowable	25	23.33	607

Total daily allowable

It is our understanding that the calculated total daily project allowable represents the maximum which the project will be allowed to produce, unless special permission is obtained. In order to keep the current assigned allowable in line with the ability of the project to produce, it is assumed that increases in allowable can be approved administratively upon request until such time as the calculated daily allowable rate is reached. It appears that a note on the Operators Monthly Report C-115 would serve as the means for requesting an increase in allowable. If such procedure is satisfactory, it is thought that the allowable for March would be requested on the C-115 covering the operations for January. As an example, there is enclosed a C-115 covering the operations for both January and February which includes all the new wells, incorporates the change in status from a prorated field to a waterflood project and shows the requested allowable.

We would appreciate knowing what the correct procedure is for calculating the maximum project allowable and also whether the enclosed Forms C-115 and the method for handling requests for allowable increases are acceptable. Should the C-115's be in order, please accept them as the official filings (the one for January will be a corrected copy), and the official date of waterflood status for the Hospah Sand Unit will become January 1, 1966.

Also enclosed are monthly injection forms C-120 covering the Hospah Sand Unit for the months of January and February. If these forms are not in order, please advise.

To help expedite the change from a prorated to a waterflood status, there is also enclosed a sample proration schedule which incorporates all changes in new wells. We have also made the following corrections to the proration schedule for January, 1966: (1) Well No. 53, located O 36-18-9, was converted from a producer to a water-supply well and should have been removed from the schedule; (2) Well No. 23, located I 36-18-9, should be Well No. 32; and (3) Wells Nos. 24 and 52, located G 36-18-9, should be carried as being located in G 1-17-9.

If we can supply additional information, please advise.

Very truly yours,

Gilbert M. Andreen

GMA:nbd Attachment

cc: District I Office, Hobbs, New Mexico District III Office, Aztec, New Mexico

# NEW MEXICO OIL CONSERVATION COMMISSION MONTHLY INJECTION REPORT Submit this report in triplicate to the District Office, Oil Conservation Commission.

Form C-129 (Revised 5-1-60)

Company Tesor	o Pe	trole	um	Co	rpo	ration	_ Pool _	Hospa	h Sand Unit		
County McKinl	ey			•			_ Month_	/Jai	nuary, 1966	· · · · · · · · · · · · · · · · · · ·	
				11	1JEC	TION WELLS (Atta	ch addition	al sheets	s if necessory)		
LEASE	WELL NO.	UL.	OCA S.	<del></del>	R	MCF GAS INJECTED		ATIVE INJ.	BBLS, WATER ' INJECTED	CUMULATIVE WATER INJ.	AVG. INJ. PRESSURES
Hospah Sand											
Unit	66	A	1	17	9				1,458	5,888	780
	61	E	h	17					13,222	25, 933	740
	67.	H	li	17	1		1.		1,525	6,042	790
	60	L	1	•	1			•	26, 268	45, 390	780
	68	В	36	18		NONE	NIONE	-	7, 176	16,515	680
1	69	E	1	18		NONE	NON	r.	25, 337	47, 184	660
	64	H	1	18					12, 166	27, 263	660
	65	P		18		•			1,479	5, 265	740
•	05	F.	30	10	7				2,217	J, 203	140
•	}		1								
	1										
TOTAL	8		<del>                                     </del>	<del> </del>			·		88, 631	179,480	729
<del>*************************************</del>	<del></del>	<del> </del>	•	PR	ODU	CING WELLS (Atto	h addition	al sheets			<u> </u>
LEASE	WELL NO.	UL.	CAT	T	R	DBLS, OIL PRODUCED	MCF PROD		GOR	BBLS. WATER PRODUCEO	% WATER PRODUCED
Hospah Sand			1					, i		•	
Unit			. :					•			
Our											
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TOTAL		ا		i		7. 194	Nil	l	Nil	35, 431	83
PRODUCING WELLS	CUTSII	SIDE A	PRO	RAT	ED Y	TERFLOOD PROJE	CT AREA	WHICH A	ARE PRODUCING	INTO COMMON FAC	ILITIES WITH
. UE	ASE			- 1	WEL	the same of the sa		DATE OF TEST	LENGTH OF TEST	BARRELS PRODUCED	BARRELS . PER DAY
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				-							
	• •										
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I hereby certify that the	above, in	(ormation	le tr	ue an	id con	plets to the best of a	ny knowledg	e end pelt	1001/	/i	
	· .		•	`.	. '			$\rightarrow$	1/1 (0)	/	
Remarks:			<del></del>	<del>.</del> ,	<del></del> -		NAME		1	G. M.	Andreen
							TITLE	Vice-	President		• *
							بسيب بأما ا ا				

3 copies sent to District III office at Aztec, 1 copy to District I office at Hobbs and 1 to office at Santa Fe for their information.

# Hospah Sand Unit Hospah Field McKinley County, New Mexico

## Producing and Injection Wells

Well No.	Location	Status	Well No.	Location	Status
. 1	A 1-17-9	S	30-A	H 36-18-9	S
49	A 1-17-9	S	64	H 36-18-9	I
66	A 1-17-9	I ·			
			32	I 36-18-9	P
12	B 1-17-9	P	37	J 36-18-9	P
14	B 1-17-9	P			
20	B 1-17-9	P	28	J 36-18-9	P
23	B i-17-9	P	33	J 36-18-9	ь
51	B 1-17-9	P	34	J 36-18-9	P
			36	J 36-18-9	P
4	C 1-17-9	. P	•		
5	C 1-17-9	P	35	K 36-18-9	P
6	C 1-17-9	P			
22	C 1-17-9	P	62	L 36-18-9	Þ
61	E 1-17-9	<b>.</b>	3	N 36-18-9	P
		•	7	N 36-18-9	P
2	F 1-17-9	$\mathbf{P}$	10	N 36-18-9	P
11	F 1-17-9	P	15	N 36-18-9	P
21	F 1-17-9	P	17	N 36-18-9	P
38	F 1-17-9	P	71	N 36-18-9	P
24	G 1-17-9	$\mathbf{P}$	16	0 36-18-9	P
52	G 1-17-9	P	19	0 36-18-9	P
	•		25	0 36-18-9	P
67	H 1-17-9	1	48	0 36-18-9	P
9	J 1-17-9	P	27	P 36-18-9	P
			50	P 36-18-9	P
8	K 1-17-9	P	65	P 36-18-9	I
13	K 1-17-9	P			
39	K 1-17-9	P	54	L 31-18-8	P
60	L 1-17-9	I	•		
68	В 36-18-9	İ			
69	E 36-18-9	1			
63	F 36-18-9	P			
29	G 36-18-9	P			

# NEW MEXICO OIL CONSERVATION COMMISSION MONTHLY INJECTION REPORT Submit this report in triplicate to the District Office, Oil Conservation Commission.

Form C-120 (Revised 5-1-60)

Company Tesor	o Pei	trole	ım	Co	rpo	ration	Pool Hospa	h Sand Unit		<u> </u>
County McKinly	ey	<b></b>		:			Month Febr	uary, 1966		
				- IN	VIEC	TION WELLS (Aria	ch additional sheet	I f nacassary)		
LEASE	WELL NO.	UL	S		1	MCF GAS INJECTED	CUMULATIVE GAS INJ.	BBLS. WATER INJECTED	CUMULATIVE WATER INJ.	AVG. INJ. PRESSURES
lospah Sand										
Unit	66	A	1	17	9.			5,727	7, 185	740
V-1.10	61	1 .	1	17				24, 449	37,671	760
•	67	1	1	17				1,320	7,344	760
	60	L		17				24,201	69, 591	740
	68		36		1	NICALITA	NONE	6,098	22,613	680
	69		36			NONE	NONE	31,050	78,234	640
•	64	1 .	36		•		}	13, 174	40,437	500
•	65		36					1, 126	6, 391	760
	05	F	30	10	7			1, 120	0,371	
					•				,	
TOTAL	8				-			107, 145	269, 466	700
		<b></b>	لــــا	PR	ODU	CING WELLS (Attoo	h additional sheet		207, 400	1
LEASE	WELL NO.	UL	CAT			BBLS, OIL PRODUCED	MCF GAS PRODUCED	GOR	BBLS, WATER PRODUCED	% WATER
Hospah Sand				•						
Unit										
	_								. •	
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SEE A	ATT	CHE	РЧ	IS	F					
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TOTAL						6,375	Nil	Nil	31, 125	83
RODUCING WELLS	OUTSID	E A PR	PRO	RAT	D WA	TERFLOOD PROJE	CT AREA WHICH	ARE PRODUCING	INTO COMMON FAC s if necessory)	CILITIES WITH
LE	ASE	-, -,			WEL			LENGTH OF TEST	BARRELS PRODUCED	BARRELS PER DAY
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NONE									· }.	
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Hanan's Calcula duar rite a			11	=	. :			37/	1/	
emarks:							NAME	NI O	- G.M	. Andreen
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# Hospah Sand Unit Hospah Field McKinley County, New Mexico

# Producing and Injection Wells

	-			** n	
Well No.	Location	Status	Well No.	Location	Status
1	A 1-17-9	S	30-A	Н 36-18-9	s
49	A 1-17-9	S	64	H 36-18-9	I
66	A 1-17-9	. <b>I</b>		, ,	^
8.00			32	I 36-18-9	P
12	B 1-17-9	$\mathbf{P}_{i}$ ,	37	I 36-18-9 🕜	P
14	B 1-17-9	$_{\cdot}\mathbf{P}$			,
20	B 1-17-9	P	28	J 36-18-9	P
23	B 1-17-9	P	33	J 36-18-9	P
51	B 1-17-9	P	34	J 36-18-9	P
			36	J 36-18-9	P
4	C 1-17-9	P			•
5	C 1-17-9	$\mathbf{P}^{\prime}$ .	35	K 36-18-9	P
6	C 1-17-9	P	• "		•
22	C 1-17-9	P	62	L 36-18-9	P
61	E'1-17-9	I	3	N 36-18-9	P
			7	N 36-18-9	P
2	F 1-17-9	P	10	N 36-18-9	P
11	F 1-17-9	P	15	N 36-18-9	P
21	F 1-17-9	P	17	N 36-18-9	P
38	F 1-17-9	P	71	N 36-18-9	P
24	G 1-17-9	p	16	0 36-18-9	P
52	G 1-17-9	P	19	0 36-18-9	P
-	•		25	0 36-18-9	
67	H 1-17-9	I	48	0 36-18-9	P P
9	J 1-17-9	P	27	P 36-18-9	<b>T</b>
100			50	P 36-18-9	P
8	K 1-17-9	P	65	P 36-18-9	P
13	K 1-17-9	P	03	1. 20-10-3	I
39	K 1-17-9	P	54	L 31-18-8	P
12 6		to the second second		•	
60	L 1-17-9	I			
68	B 36-18-9	1			
69	E 36-18-9	I		•	
63	F 36-18-9	P			
29	G 36-18-9	P		•	•

# Hospah Sand Unit Hospah Field McKinley County, New Mexico \*

### Proration Schedule

•			
Top Unit Allowable	70	•	

GOR Limit 2,000/1

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Tesoro Petroleum Corporation	Hospah Sand Unit 1-49 A 1-17-9	S.I.
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tt 🧖	" 2-11-21-38 F 1-17-9	P
	" 24-52 G 1-17-9	P
#	67 H 1-17-9	P
II .	" 9 J 1-17-9	P
<b>1</b>	" 8-13-39 K 1-17-9	P
<b>n</b>	" 60 L 1-17-9	I
II .	68 B 36-18-9	I
$\mathbf{n}$	" 69 E 36-18-9	I
Here were the second of the se	" 63 F 36-18-9	P
$\mathbf{H}_{\mathbf{q}}$	" 29 G 36-18-9	P
n.	" 30=A H 36-18-9	S
in the second of the second of the second	" 64 H 36-18-9	I
<b>u</b>	ii 32-37 I 36-18-9	P
<b>u</b>	" 28-33-34-36 Ј 36-18-9	P
$\mathbf{n}$	" 35 K 36-18-9	P
TE .	62 L 36-18-9	$\mathbf{p}$
11	" 3-7-10-15-17-71 N 36-18-9	$\cdot \mathbf{P}$
$\mathbf{u}$	" 16-19-25-48 O 36-18-9	$\mathbf{P}^{-}$
II	" 27-50 P 36-18-9	P
III	65 P 36-18-9	I
II.	" 54 L 31-18-8	.p
	22 23.20-0	-

Company Total

<sup>\*</sup> This schedule is for January, 1966 with corrections.

l copy of this sent to Santa Fe office, Hobbs District I office, and Aztec District III office.

Copy to transporter will be forwarded when approval of form is received.

Corporal Tesoro Pet	rol	eum Co	rnorat		PERAT	OI	R'S MO	ONTH	d MEXICO LYRE San Ante	CPO	-	FOR 1	JONTH	Januar	y, 196	66	Pass	<u> 4</u>
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SUBMIT: ORIGINAL TO DCC SANTA PE ONE COPY TO DCC DIST. OFF DNE COPY TO TRANSPORTER

January, 1966

### NEW MEXICO OIL CONSERVATION COMMISSION BOX 2088 SANTA FE, NEW MEXICO

OPERATOR'S MONTHLY REPORT

und 533 Busby Dr., San Antonio, Texas FOR HONTE Tesoro Petroleum Corporation TOTAL LIQUIDS PRODUCED DISPOSITION OF GAS YELL NO. UNIT SEC. TWP. AND. GAL ACTUAL HONTHLY PRODUCED MCF USED ON LEASE VENTED OTHER HAND OTHER TRANS-PORTER PORTER BEG. OF POOL HAME JUNDERLINES ALLOVABLE PRODUCED PRODUCED MOHTH LEASE MANE AND STATE LAND LEASE MUNBER OF FEDERAL LEASE HUMBER Hospah Sand Unit Waterflood 24 G 1-17-9 52 G 1-17-9 67 H 1-17-9 I 9 J 1-17-9 P 8 K 1-17-9 13 K 1-17-9 WATERFLOOD PROJECT 39 K 1-17-9 ALLOWABLE 60 L 1-17-9 68 B 36-18-9 69 E 36-18-9 63 F 36-18-9 29 G 36-18-9 30-A H 36-18-9 64 H 36-18-9 STATUS CODE

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NEW MEXICO OIL CONSERVATION COMMISSION
BOX 2088 SANTA FE, NEW MEXICO
OPERATOR'S MONTHLY REPORT

533 Busby Dr., San Antonio, Texas FOR MONTH Tesoro Petroleum Corporation

January, 1966

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Hospah SandUnit	.		1		1	1	<b>_</b>	1			}							
Waterflood				1					j .									
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NEW MEXICO OIL CONSERVATION COMMISSION
BOX 2088 SANTA FE, NEW MEXICO
OPERATOR'S MONTHLY REPORT

Comment Tesoro Petroleum Corporation 44000533 Busby Dr., San Antonio, Texas for Honth January, 1966 , 4 44

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VELL HO, UNIT SEC. TYP. RHG.	WELL STAT	VFF OAVBLE OIF MOMAHITA	ACTUAL BARRELS PRODUCED	BARRELS OF WATER PRODUCED	GAS PPODUCED HCF	DAYS PPO	VENTEO	USED ON LEASE	SOLD	PURCH.	OTHER	000	OHL ON HAND BEG. OF MONTH	BARRELS TO TRANS- PORTER	OTHER	CODE	TRANS PORTER	OIL ON CHAR TO CHE
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(SICHATURE) Vice-President

NEW MEXICO OIL CONSERVATION COMMISSION
BOX 2088 SANTA FE, NEW MEXICO
OPERATOR'S MONTHLY REPORT

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NEW MEXICO OIL CONSERVATION COMMISSION
BOX 2088 SANTA FE, NEW MEXICO
OPERATOR'S MONTHLY REPORT.

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NEW MEXICO OIL CONSERVATION COMMISSION
BOX 2038 SANTA FE, NEW MEXICO
OPERATOR'S MONTHLY REPORT

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#### GOVERNOR JACK M. CAMPBELL CHAIRMAN

# State of New Mexico

# Bil Conservation Commission





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

P. O. BOX 2088 SANTA FE

February 9, 1966

Res	Case No. 3353
ndrews	Order No. R-3040 Applicant:

Mr. Richard S. Morris Seth, Montgomery, Federici & A Attorneys at Law Post Office Box 2307 Santa Fe, New Mexico

Tesoro Petroleum Corp.

Dear Sir:

Enclosed herewith is a copy of the above-referenced Commission order recently entered in the subject case. Letter pertaining to conditions of approval and maximum allowable to follow.

Very truly yours,

A. L. PORTER, Jr. Secretary-Director

ALP/ir

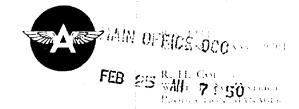
Carbon copy of order also sent to:

Hobbs OCC Artesia OCC Aztec OCC\_

Mr. James C. Vandiver, 1801 Chaco Avenue, Farmington, N.M. Other\_

Mr. Philip A. Hogan, Tidewater Oil Company, Box 1960, Durango, Colo.

# Tidewater Oil Company



February 24, 1966

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

Attention: Ida Rodrigues

Gentlemen:

I am returning your copy of the transcript in Case No. 3353 (Tescro Petroleum Corporation) that you sent to me February 11, 1966.

You have been most helpful and we thank you again for your cooperation.

Very truly yours,

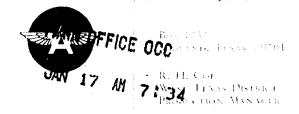
TIDEWATER OIL COMPANY

Harold G. Vest

HGV:csw

Enclosure

# Tidewater Oil Company



January 13, 1966

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

Attention: Ida Rodrigues, Secretary to Director

Gentlemen:

Please send a copy of the transcribed proceedings of Case #3353 (Tesoro Amendment to Waterflood Order No. R-2807), which was presented at the January 5, 1966 Examiner Hearing in Santa Fe. Upon receipt we will make a print and return your copy to you immediately.

For your convenience we are enclosing a self-addressed stamped envelope.

Thank you for your sincere cooperation.

Very truly yours,

TIDEWATER OIL COMPANY

Harold G. Vest

HGV:csw

Enclosure

Send transcript, when they come in.

#### BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE CIL CONSERVATION COMMISSION OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

> CASE No. 3353 Order No. R-3040

APPLICATION OF TESORO PETROLEUM CORPORATION TO AMEND ORDER NO. R-2807, McKINLEY COUNTY, NEW MEXICO.

#### ORDER OF THE COMMISSION

#### BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 5, 1966, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 9th day of February, 1966, 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 by Order No. R-2807, the Commission authorized the institution of a waterflood project in the Hospah Pool in the Hospah Unit Area by the injection of water into the Hospah Sand through four wells in Section 36, Township 18 North, Range 9 West, and four wells in Section 1, Younghip 17 North, Range 9 West, NMPM, McKinley County, New Mexico.
- (3) That the applicant, Tesoro Petroleum Corporation, seeks amendment of Order No. R-2807 to substitute six injection wells for six of the injection wells authorized therein and to approve unorthodox locations for two producing wells.
- (4) That approval of the subject application should increase the efficiency of the subject waterflood project, and otherwise prevent waste and protect correlative rights.

-2-CASE No. 3353 Order No. R-3040

# IT IS THEREFORE ORDERED:

(1) That Order No. R-2807 is hereby amended to authorize, in lieu of the water injection wells described therein, the following-described water injection wells:

### MCKINLEY COUNTY, NEW MEXICO

- Hospah Unit Well No. 60, located 2310 feet from the South line and 1060 feet from the West line of Section 1, Township 17 North, Range 9 West, NMPM;
- Hospah Unit Well No. 61, located 3650 feet from the South line and 1000 feet from the West line of Section 1, Township 17 North, Range 9 West, NMPM;
- Hospah Unit Well No. 64, located 1650 feet from the North line and 660 feet from the East line of Section 36, Township 18 North, Range 9 West, NMPM;
- Hospah Unit Well No. 65, located 990 feet from the South line and 250 feet from the East line of Section 36, Township 18 North, Range 9 West, (previously authorized);
- Hospah Unit Well No. 66, located 330 feet from the North line and 330 feet from the East line of Section 1, Township 17 North, Range 9 West, NMFM, (previously authorized);
- Hospah Unit Well No. 67, located 2070 feet from the North line and 1590 feet from the East line of Section 1, Township 17 North, Range 9 West, NMPM;
- Hospah Unit Well No. 68, located 990 feet from the North line and 2310 feet from the East line of Section 36, Township 18 North, Range 9 West, NMPM; and
- Hospah Unit Well No. 69, located 2310 feet from the North line and 940 feet from the West line of Section 36, Township 18 North, Range 9 West, NMPM.
- (2) That Order No. R-2807 is hereby amended to approve unorthodox locations in the Hospah Pool for the following-described producing wells:

-3-CASE No. 3353 Order No. R-3040

# HEKINLEY COUNTY, NEW MEXICO

Hospah Unit Well No. 62, located 1900 feet from the South line and 1140 feet from the West line of Section 36, Township 18 North, Range 9 West, NMPM; and

Hospah Unit Well No. 71, located 1310 feet from the South line and 2000 feet from the West line of Section 36, Township 18 North, Range 9 West, NMPM.

(3) 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

JACK M. CAMPBELL, Chairman

GUYTON B. HAYS, Member

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

# OIL CONSERVATION COMMISSION P. O. BOX 2088 SANTA FE, NEW MEXICO

December 29, 1965

Mr. Philip A. Hogan Tidewater Oil Company Post Office Box 1960 Durango, Colorado

Dear Sir:

With reference to your letter of December 28, 1965, please be advised that Case No. 3353 (Tesoro Petroleum Corporation Waterflood) is scheduled to be heard at the January 5, 1966 examiner hearing. If there should be a change in this schedule, we will notify you.

I am enclosing a copy of the docket for the above-mentioned hearing.

Very truly yours,

J. M. DURRETT, Jr. Attorney

JMD/ir Enclosure

# Tidewater Oil Company



H. I. China Markett Volst Gernick IN Expression District

December 28, 1965

New Mexico Oil Conservation Commission P. O. Box 871 Santa Fe, New Mexico

ATT: Mr. A. L. Porter

# Gentlemen:

Regarding Case #3353 (Tesoro Petroleum Corp. Waterflood of Hospah Field), which was continued from the scheduled date of December 14, 1965 to January 5, 1966, Tidewater Oil Company is planning to have representatives attend this hearing from the Durango Exploration Office and our Midland, Texas Production Office.

Please notify the following if any change from the scheduled date of January 5th is planned:

Tidewater Oil Company P. O. Box 1960 Durango, Colorado ATT: Mr. Philip A. Hogan

Tidewater Oil Company P. O. Box 1231 Midland, Texas ATT: Mr. Harold Vest

very truly yours,

TIDEWATER OIL COMPANY

Philip A. Hogan District Geologist

PAH:dp

Men Gast 3353

JAMES M. DURRETT JR Sec 14 Gammer

Please State at the hearing that The case was me aboutied, will be readvertised + heard

on Jan 5, 1966.



# STATE OF NEW MEXICO

# STATE ENGINEER OFFICE SANTA FE

S. E. REYNOLDS STATE ENGINEER

November 15, 1965

ADDRESS CORRESPONDENCE TO: STATE CAPITOL SANTA FE, NEW MEXICO 87501

Can 3353

Mr. A. L. Porter, Jr. Secretary-Director Oil Conservation Commission Santa Fe, New Mexico

Dear Mr. Porter:

Reference is made to the application of Tesoro Petro. Corp. which seeks an amendment to Order R-2807 by adding two new injection wells Nos. 68 and 69. Applicant also seeks authorization for two unorthodox locations for producing wells which is no concern of this office. Applicant also seeks permission to produce from Well No. 63 and requests the authorization to inject water into a well located 1600' from the south line and 1640' from the west line of Sec. 36, T. 18 N., R. 9 W. be rescinded.

This office offers no objection to the granting of the application provided the well construction and equipment specifications for the injection wells are equal to, or are better than, those in the original plan.

FEI/ma cc-Mr. Richard S. Morris

Yours truly,

S. E. Reynolds State Engineer

Frank E. Irby

Chief

Water Rights Div.

J. O. SETH (1883-1963)
A. K. MONTGOMERY
WM. FEDERICI
FRANK ANDREWS
FRED C. HANNAHS
RICHARD S. MORRIS
JOHN G. JASPER
SUMNER G. BUELL,
SETH D. MONTGOMERY

# SETH, MONTGOMERY, FEDERICI & ANDREWS

ATTORNEYS AND COUNSELORS AT LAW

350 EAST PALACE AVENUE SANTA FE, NEW MEXICO 87501

POST OFFICE BOX 2307
AREA CODE 508
TELEPHONE 982-3676

November 8, 1965

3353

**σ>** [

Mr. Frank Irby Chief, Water Rights Division Office of the State Engineer Capitol Building Santa Fe, New Mexico

> Re: Tesoro Petroleum Corporation application to N.M.O.C.C. for an amendment of Order No. R-2807, Hospah unit area, McKinley County, New Mexico

Dear Mr. Irby:

RSM: LHS Encl.

Enclosed is a copy of Tesoro Petroleum Corporation's application for an amendment to Order No. R-2807 entered in Case No. 3132 on November 24, 1964 which order approved a waterflood project in the Hospah unit area, McKinley County, New Mexico.

Since Order No. R=2807 was entered it has become necessary to convert several wells which were intended to be injection wells into producing wells and to drill additional injection wells as replacements. This application seeks approval for these changes but does not seek to alter the method of operation of the waterflood project in any substantial sense.

If you need additional information concerning Tesoro's plans for this area please advise and I will do my best to get the information for you.

Very truly yours,

Mila. ( & Micria

cc: New Mexico Oil Conservation Commission

Mr. G. M. Andreen Tesoro Petroleum Corporation OP

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION OF TESORO PETROLEUM CORPORATION FOR AN AMENDMENT TO ORDER NO. R-2807, CASE NO. 3132, McKINLEY COUNTY, NEW MEXICO

Case No. 2350

# APPLICATION

Comes now Tesoro Petroleum Corporation by its attorneys and requests the New Mexico Oil Conservation Commission to amend its Order No. R-2807 entered in Case No. 3132 on November 24, 1964 to allow the production from wells previously designated as injection wells, to authorize new injection wells and to approve unorthodox locations for new producing wells, and in support of its application states:

- 1. Tesoro Petroleum Corporation is the successor in interest to Texstar Petroleum Company which was the applicant at the previous hearing concerning the Hospah unit waterflood project.
- 2. By Order No. R-2807 entered in Case No. 3132 on November 24, 1964 the Commission approved a waterflood project in the Hospah unit area (see Case No. 3131, Order No. R-2797, dated November 10, 1964) by the injection of water into the Hospah sand through eight injection wells with specified locations.
- 3. Applicant seeks approval of two new injection wells as follows:

Well No. 68 to be located 990 feet from the north line and 2310 feet from the east line of Section 36, T. 18 N., R. 9 W., McKinley County, New Mexico.

Well No. 69 to be located 2310 feet from the north line and 940 feet from the west line of Section 36, T. 18 N., R. 9 W., McKinley County, New Mexico.

4. Applicant seeks approval of two unorthodox locations for producing wells as follows:

Well No. 62 to be located 1900 feet from the south line and 1140 feet from the west line of Section 36, T. 18 N., R. 9 W., McKinley County, New Mexico.

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DOCKET MAILED

Date 1-1-6

Date

Well No. 71 to be located 1310 feet from the south line and 2000 feet from the west line of Section 36, T. 18 N., R. 9 W., McKinley County, New Mexico.

- 5. Applicant further seeks the amendment of Order No. R-2807 to permit Well No. 63 located 1980 feet from the north line and 2310 feet from the west line of Section 36, T. 18 N., R. 9 W., McKinley County, New Mexico, to be operated as a producing well rather than as an injection well as previously authorized by said order.
- 6. Applicant further seeks the amendment of Order No. R-2807 rescinding the authorization to inject water into a well located 1650 feet from the south line and 1640 feet from the west line of Section 36, T. 18 N., R. 9 W., McKinley County, New Mexico.
- 7. The source of water for all injection wells in the Hospah unit will be from the Dakota formation in Well No. 53 located 540 feet from the south line and 2300 feet from the east line of Section 36, T. 18 N., R. 9 W., McKinley County, New Mexico.
- 8. Inasmuch as all of the authority sought by this application concerns wells located in the Hospah unit area, correlative rights will be protected by the granting of this application. Approval of this application will result in the recovery of oil that is unrecoverable by primary means of production and therefore waste will be prevented.
- 9. A copy of this application is being furnished to the Office of the State Engineer.

WHEREFORE, Tesoro Petroleum Corporation requests that this application be set for hearing before the Commission or one of its examiners and that the Commission enter its order amending Order No. R-2807 as requested herein.

SETH, MONTGOMERY, FEDERICI & ANDREWS

P. O. Box 2307

Santa Fe, New Mexico

Attorneys for Tesoro Petroleum

Corporation.

# OIL CONSERVATION COMMISSION SANTA FE, NEW MEXICO

Date # 2-1-66

HEARING DATE 1-5-66 Paul CASE NO. 3353 DSN ( SF My recommendations for an order in the above numbered case(s) are as follows: Enter an order in the subject tool rescinding appraval of order no Re807 to brief for water injection purposes all wells listed in said order except 65 990' FSL & 250 FEL 36 18N 9W 66 330' FNL & 330' FEL 1 17N 9W approve in here of those wells rescuided 60 2310 5 1060 W 1-17N-9W 61 3650 S 1000 W 1-17N-9W 64 1650 N 660 E 36-18N-9W Haspah Unit # 60 2310 5 67 2070 N 1590E 1-17N-9W 990 N 2310E 36-18N-9W 68 69 Z310 N 940W 36-18N-9W also approve the following marthodoug locations for 1140W 36-18N-9W 2000W 36-18N-9W Hospah Minh # 62 19005 1310 5 of usechian wells at the local E as wed as the emorthodox

J. O. SETH (1883-1963)

A. K. MONTGOMERY

RICHARD S. MORRIS

FRANK ANDREWS FRED C. HANNAHS

JOHN G. JASPER SUMNER G. BUELL SETH D. MONTGOMERY

WM. FEDERICI

# SETH, MONTGOMERY, FEDERICI & ANDREWS OCC

350 EAST PALACE AVENUE

SANTA FE, NEW MEXICO 8759AN 18 AN 7 1 52 POST OFFICE BOX 2007

January 17, 1966

AREA CODE 503 TELEPHONE 982-3876

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

Attention: Mr. Daniel S. Nutter

Re: Application of Tesoro Petroleum Corporation, Case No. 3353, January 5, 1966, Hospah Sand Unit, Hospah Field, McKinley County, New Mexico

# Gentlemen:

In accordance with examiner Nutter's request for additional information at the hearing of the subject case, we hand you herewith Mr. Andreen's letter dated January 14, 1966, to which is attached his summary of each well drilled in the Hospah Sand Unit and a structure map showing the locations of all wells and the original and present oil-water contact.

Also enclosed are copies of letters written to Tidewater 011 Company and Whigham Drilling Company in compliance with the requests made by representatives of those companies at the hearing on the subject case.

Based upon this additional information we request that the Commission enter its order approving the locations of all wells and approving the injection of water to all wells presently designated as injection wells.

> Very truly yours Pichauf S. Morris

RSM: LHS Encls.

Tesoro Petroleum Corporation 533 Busby Drive

San Antonio, Texas 78209

### TESORO PETROLEUM CORPORATION

533 Bussy Drive

512-TAYLOR 4-0261

SAN ANTONIO, TEXAS 78209

January 14, 1966

MAIN OFFICE OCC

JAN 18 AN 7:53

Whigham Drilling Company Petroleum Plaza Building Farmington, New Mexico 87401

Re: Oil Conservation Commission Case
No. 3353, Hospah Sand Unit, Hospah
Field, McKinley County, New Mexico

### Gentlemen:

At the referenced hearing held January 5, 1966 at Santa Fe, New Mexico your representative requested some additional information on injection wells Nos. 60 and 61 of the Hospah Sand Unit.

The Hospah Sand Unit well No. 60 was drilled in Unit L, 2310 feet from the South line and 1060 feet from the West line of Section 1, Township 17 North, Range 9 West. The well was spudded August 12, 1965 and 4 1/2-inch casing run on August 17, 1965. The well was cored, and a copy of the analysis is attached for your information. The well was perforated from 1559-70, 1570-90 and 1600-01 and tested six days with a 1 1/2-inch pump, 36-inch stroke, 14 strokes per minute. Final test was 110 barrels per day of water with a rain-bow of oil. The well was considered noncommercial and equipped as an injection well.

Hospah Sand Unit well No. 61 was drilled in Unit E, 3650 feet from the South line and 1000 feet from the West line of Section 1, Township 17 North, Range 9 West. This well was spudded August 12, 1965 and 4 1/2-inch casing was run August 17, 1965. The sand section was cored, and a copy of the core analysis is attached for your information. The well was perforated from 1632-34, 1636-38 and 1640-56 and tested six days with a 1 1/2-inch pump, 36-inch stroke, 10 strokes per minute. The final test was 75 barrels a day of water with a trace of oil. The well was considered noncommercial and equipped as an injection well.

At the sacondary-recovery hearing on the Hospah Field (Case No. 3132) held October 28, 1964, a structure map on top of the Hospah Sand was prepared

Whigham Drilling Company - 2 -January 14, 1966 by the Engineering and Consulting Department of Core Laboratories, Inc. and was submitted in evidence. A copy of this structure map is attached, and reference to it will show that the original oil-water contact on the southwest portion of the Unit area was thought to be at 5350 feet above sea level. The drilling of wells Nos. 60 and 61 did very little to alter the geological concepts insofar as this portion of the field is concerned. From the new development in the Hospah Sand Unit area there is evidence that the original oil-water contact has moved upstructure at least 5 feet and that its present position is approximately 5355 feet above sea level. Attached is a structure map of the Hospah Sand Unit area which incorporates all of the new data obtained from the recent drilling, and it is evident from this map and the production tests on Nos. 60 and 61 that there is no commercially-productive Hospah Sand contiguous with that underlying the Hospah Sand Unit lying outside the Unit boundaries. If there is any additional information we can supply, please advise. Very truly yours, GMA:nbd Gilbert M. Andrean Attachment cc: New Mexico Oil Conservation Commission

# CORE LABORATORIES. Inc. Petroleum Reservoir Engineering OALLAS, TEXAS

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# CORE ANALYSIS RESULTS

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DERVICE NO. OF These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

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# CORE LABORATORIES. INC. Petroleum Reservoir Engineering DALLAS, TEXAS

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# CORE ANALYSIS RESULTS

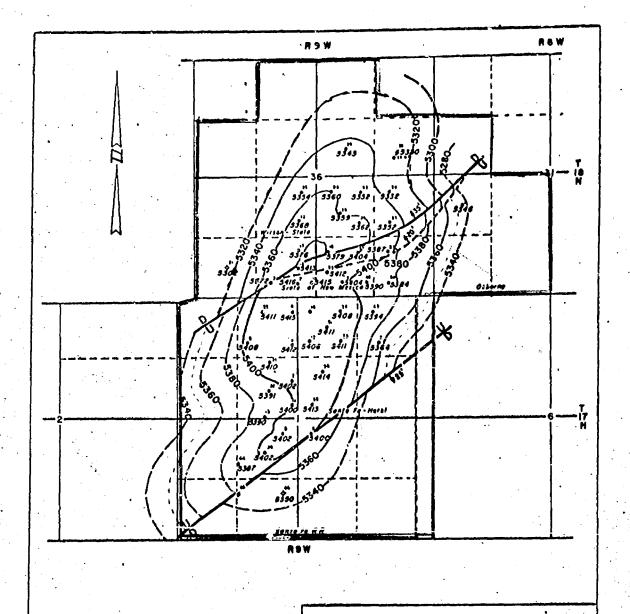
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These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upons.

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LEGEND

Figure 2 STRUCTURE MAP TOP HOSPAH SAND

HOSPAH FIELD MCKINLEY COUNTY, NEW MEXICO

CORE LABORATORIES, INC. ENSWEERING & CONSULTING DEPT

N.

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691

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

December 14, 1965

EXAMINER

HEARING

IN THE MATTER OF:

Application of Tesoro Petroleum Corporation to amend Order No. R-2807, McKinley County,) New Mexico. Applicant, in the abovestyled cause, seeks an amendment to Order No. R-2807, which authorized a waterflood project in the Hospah Unit Area, to permit) Case No. 3353 the production of oil from previously designated water injection wells, to

approve unorthodox locations for additional producing wells, and to authorize additional injection wells, all in Section 36, Township 18 North, Range 9 West, McKinley, New Mexico.

BEFORE: Elvix A. Utz, Examiner.

TRANSCRIPT OF HEARING



# dearnley-meier reporting service, inc.

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6491 • ALBUQUERQJE, NEW MEXICO 1213 FIEST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO MR. UTZ: The Hearing will come to order. The first case on the docket will be Case 3353: Application of Tesoro Petroleum Corporation to amend Order No. R-2807.

This Case was misadvertised in one of the newspapers and will be continued and be readvertised in the January 5th Hearing in 1966.

(Whereupon, Case Number 3353 was continued.)



# dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATE MENTS. EXPERT TESTIAIONY, DAILY COPY, CONVENT 1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO 1213 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

STATE OF NEW MEXICO )
) ss
COUNTY OF BERNALILLO )

I, DEAN A. ROBINSON, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 31st day of December, 1965.

Dean a. Robinson-NOTARY PUBLIC

My Commission Expires: October 16, 1969.



I do hereby certify that the foregoing is

\* complete accord of the proceedings in

the browness hearing of Case No. 3

Leading Committee of Case No. 3

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# DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 5, 1966

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

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

- CASE 3358: Application of General American Oil Company of Texas for a waterflood expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Burch-Keely Waterflood Project, authorized by Order No. R-2327 in the Grayburg-Jackson Pool, by the conversion to water injection, in stages, of from 10 to 15 wells in Sections 23 and 26, Township 17 South, Range 29 East, Eddy County, New Mexico.
- Application of Sinclair Oil & Gas Company for a dual completion, CASE 3359: non-standard location, non-standard gas proration unit, and an exception to Rule 104 C I, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Fren Oil Company Well No. 21 to produce oil from the Cedar Lake-Abo Pool and to produce gas from an undesignated Morrow gas pool through parallel strings of tubing. Applicant further seeks approval of a 200-acre non-standard gas proration unit for said well comprising the E/2 SW/4, SW/4 SE/4, and E/2 SE/4 of Section 19, Township 17 South, Range 31 East, for said well which is located at an unorthodox gas well location 560 feet from the South line and 3350 feet from the East line of said Section 19. Applicant further seeks an exception to Commission Rule 104 C I for said well which is located closer than 660 feet to another well producing from the Abo rormation on the same 40-acre tract.
- CASE 3360: Application of L. R. French, Jr. for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete his Aztec Uncle Well No. 1 located in Unit C of Section 28, Township 18 South, Range 33 East, Lea County, New Mexico, to produce oil from the Strawn formation through the casing-tubing annulus and to produce gas from the Morrow formation through tubing. In the alternative, applicant seeks authority to dually complete the well with a single string of tubing and to commingle the Strawn oil and Morrow gas in the wellbore by means of a dual-flow choke-assembly.

# CASE 3152 (Reopened)

In the matter of Case No. 3152 being reopened pursuant to the provisions of Order No. R-2821, which order established 80-acre spacing units for the Osudo-Wolfcamp Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

# CASE 3153 (Reopened)

In the matter of Case No. 3153 being reopened pursuant to the provisions of Order No. R-2822, which order established 80-acre spacing units for the Osudo-Strawn Pool, Lea County, New Mexico,

# - 2 - January 5, 1966 Examiner Hearing

for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

# CASE 3246 (Reopened)

In the matter of Case No. 3246 being reopened pursuant to the provisions of Order No. R-2935, which order established special rules for the Mesa-Queen Pool, Lea County, New Mexico, for production of oil and gas wells in said pool, including classification of oil wells and gas wells, spacing units for oil wells and gas wells, and the establishment of a gas-liquid ratio limitation of 5,000 cubic feet of gas per barrel of oil. All interested parties may appear and show cause why the special rules should be continued in effect.

# CASE 2720 (Reopened)

In the matter of Case No. 2720 being reopened pursuant to the provisions of Order No. R-2397-B which continued the original order for an additional year, establishing special rules governing the production of oil and gas wells in the Double-X Delaware Pool, Lea County, New Mexico, including classification of wells as gas wells when the gas-liquid hydrocarbon ratio exceeds 30,000 to one.

CASE 3361:

Application of Tidewater Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in its A. B. Coates "C" Well No. 15 located in Unit O of Section 24, Township 25 South, Range 37 East, Justis Field, Lea County, New Mexico, through a perforated interval below 8,000 feet.

CASE 3353:

Application of Tesoro Petroleum Corporation to amend Order No. R-2807, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks an amendment to Order No. R-2807, which authorized a waterflood project in the Hospah Unit Area, to permit the production of oil from previously designated water injection wells, to approve unorthodox locations for additional producing wells, and to authorize additional injection wells, all in Section 36, Township 18 North, Range 9 West, McKinley County, New Mexico.

# CASE 2945 (Reopened)

In the matter of Case No. 2945 being reopened pursuant to the provisions of Order No. R-2623, which order established 640-acre spacing units for the Antelope Ridge-Devonian Gas Pool, Lea County, New Mexico, for a period of two years. All interested parties may appear and show cause why said pool should not be developed on 160-acre or 320-acre spacing units.

January 5, 1966 Examiner Hearing

# CASE 3350 (Continued and readvertised)

Application of International Oil & Gas Corporation for the creation of two new oil pools and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Bone Spring production and a new oil pool for Wolfcamp production in Section 21, Township 18 South, Range 32 East, Lea County, New Mexico, and for the establishment of special rules for each of said pools including provision for 80-acre proration units.

CASE 3362: Application of Carter Foundation Production Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through five wells located at unorthodox locations in Sections 34 and 35, Township 23 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico.