

Case Number.

4110

Application

Transcripts.

Small Exhibits

ETC.



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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMAS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 23, 1969

EXAMINER HEARING

IN THE MATTER OF:

Application of Atlantic-Richfield
Company for a waterflood project
and unorthodox injection well
location, Eddy County, New Mexico.

Case No. 4110

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

100 6 29

MR. UTZ: Case 4110.

MR. HATCH: Case 4110. Application of Atlantic-Richfield Company for a waterflood project and unorthodox injection well location, Eddy County, New Mexico.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant and Christy, Roswell, appearing on behalf of Atlantic-Richfield Company. We have one witness, Mr. Osborne.

(Witness sworn.)

MR. HINKLE: We also have five exhibits which have been identified and you have copies of them.

(Whereupon, Applicant's Exhibits 1 through 5 were marked for identification.)

MIKE OSBORNE

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence and by whom you are employed.

A Mike Osborne. I reside in Roswell, New Mexico.

and I'm employed by Atlantic-Richfield Company.

Q Have you previously testified before the Oil Conservation Commission?

A No, I have not.

Q Are you a graduate petroleum engineer?

A Yes, I am.

Q State briefly your educational background and your professional experience.

A I graduated from the University of Oklahoma with a Bachelor's degree in petroleum engineering in January of this year and I have been employed by Atlantic-Richfield as an operation engineer since that time. Prior to my graduation, I worked three summers as an engineer in training; two of these were for Mobil Oil Corporation and the third summer was for Pan American Oil.

Q Are you familiar with the application of Atlantic-Richfield in this case?

A Yes, I am.

Q Are you familiar with the area that is involved in this case?

A Yes, I am.

Q Have you made a study of that area --

A Yes, I have.

Q -- and of the wells that have been drilled in the area?

A Yes, I have.

Q What is Atlantic-Richfield seeking to accomplish by this application?

A Atlantic-Richfield is seeking approval of the pilot waterflood project consisting of the north half of the northwest quarter of Section 23, Township 18 South, Range 31 East of Lea County, New Mexico, and for permission to drill an unorthodox injection well to be located 100 feet from the north and west lines of Section 23.

Q Have you prepared or has there been prepared under your direction certain exhibits for introduction in this case?

A Yes, there have been.

Q Refer to Exhibit No. 1 and explain what this is and what it shows.

A Exhibit No. 1 is a general plat showing the project area and all wells which have been drilled in the

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formations from which these wells are producing or have been produced within a two mile radius of the project area. The plat also shows ownership of the lease hold interest and the character of the land involved, that is as to whether the land is federal, state or fee land. The proposed project area is outlined in red and the proposed unorthodox well is indicated by a red triangle.

Q Does Atlantic-Richfield own the lease that is involved in the proposed project area?

A Yes.

Q And also the lease covering the remainder of the north half of Section 23?

A Yes.

Q Does Atlantic-Richfield have any other leases in the immediate area?

A Yes, Atlantic-Richfield also has leased all of Section 14 to the north of the proposed project area.

Q Is their producing well located upon the proposed project area?

A Yes, there is. It is the Panco Federal No. 1

which is located 1980 feet from the west line and 660 feet from the north line of Section 23, Township 18 South, Range 31 East.

Q What is the history of this well?

A This well was originally drilled in June of 1964 as a wildcat to test the Delaware. The Delaware was found unproductive and the well was abandoned. Atlantic later picked up this property and in October of 1967 re-completed this well into the Queen formation for an initial production rate of 15 barrels of oil per day pumping.

Q Does Atlantic-Richfield have a waterflood project in connection with Section 14 to the north of the proposed project area?

A Yes.

Q What is the status of that project?

A That project has been under waterflood since November of 1965. The project has shown a response to water injections; has reached a peak and is now on a decline. It is currently producing approximately 200 barrels of oil per day.

Q That's the number one well which you have testified

to that is located on the 80 acres in the proposed project area received a response from this waterflood?

A Yes, this well has shown a response; production has increased from initial rate of 15 barrels of oil per day to a peak of about 40 barrels of oil per day and is currently producing 33 barrels of oil and 6 barrels of water per day.

Q Is the project in Section 14 unitized or is it on a lease basis?

A This project is being operated on a lease basis with cooperation across the leases and has not been unitized.

Q Why does Atlantic-Richfield propose to treat the 80 acre proposed project separately from that in Section 14?

A There are primarily two reasons why Atlantic wishes to treat the proposed project area as a separate area from the project area in Section 14. The reasons are because of the multiple interest on the leases and also because of the different remaining life of the two project areas. As I said, the Swearincen project in Section 14 has been under waterflood since November of 1965, and has

responded to water injection and is now in a state of decline and in this condition it would be difficult to determine equitable participation parameters if we did join the two units. The fact that this area has responded to waterflooding does show that additional oil can be recovered from the Queen sand in this area. Referring at this time to the proposed project area and especially to the proposed unorthodox location the reason that Atlantic would like to drill the well in this unorthodox location is because there is no offset production to the west of this proposed well. Consequently, any oil which is swept by injection from this well to the west will be lost because we do not anticipate that any development of the Queen sand will take place to the west of this well. Consequently, by locating this well as close as possible to the west lease line, we will be able to conserve this oil that would otherwise have been lost and in addition locating the well in this area, we will be able to prove up the reserves in the Queen sand at this location, which could possibly lead to future development to the west and south. If future

development does take place, the location of this well close to corner will protect correlative rights of all land owners in this area and all interests also. In addition, the location of the well at this point will provide for a maximum efficient sweep and will lead to additional oil recovery from the Queen sand.

Q What is the exact location of the proposed unorthodox injection well?

A We propose to locate this well 100 feet from the north and west line of Section 23, Township 18 South, Range 31 East.

Q Now, refer to Exhibit No. 2 and explain what this is and what it shows.

A Exhibit No. 2 is a structure map which was contoured on the top of the Queen sand in the area surrounding the proposed project area. This shows that the Queen sand is a southeast dipping monocline and to the best of our knowledge this reservoir is a stratigraphic trap and consequently structure is of no significance in determining the extent of the reservoir.

Q Does this Exhibit 2 also show the injection

wells in Section 14?

A Yes, it does and it shows the proposed project area and the proposed location of the injection well, also in red.

Q Now, refer to Exhibit 3 and explain what this is.

A Exhibit 3 is a gamma ray neutron log from the Panco Federal No. 1 which is located in the proposed project area. On the large scale of this log is indicated the perforations in the Queen from which this well is now producing. These are at 3444 feet to 3448 and from 3454 to 3456.

Q Now, refer to Exhibit 4 and explain this to the Commission.

A Exhibit 4 is a diagrammatic sketch of the proposed injection well which is to be located 100 feet from the north and west lines of Section 23. This shows all the proposed casing strength, including the proposed diameters and setting depths. In addition, it shows the proposed quantities and the estimated tops of the cement. It shows the proposed perforated interval tubing strings including

diameters and setting depths of the proposed packer and tubing string.

Q How much water do you anticipate would be injected in this well?

A We anticipate that we will inject approximately 300 barrels of water per day at an injection pressure of comparable to that which we find on the Swearingen project, which ranges from about 1400 PSI to 1750 PSI.

Q Where do you intend to get the water for injection purposes?

A We will purchase water from Double Eagle Water Company and we will also use some of the produced water from Section 14.

Q Now, referring back to Exhibit No. 1, I think you have already pointed out that there is no development in the southeast quarter of 15 and the northeast quarter of 22, 18 and 31 --

A That's true.

Q -- in the vicinity of the project area. Have you contacted Marathon Oil Company and Gulf, which are

the owners of the leasehold interest covering this area?

A Yes, we have. We have contacted both companies and informed them of our intent and our proposals. We have obtained a waiver from Gulf Oil Corporation, which is Exhibit 5. Although we have not obtained a waiver from Marathon, they have stated in telephone conversations that they have no objection to our proposals. In addition, if you will notice on Exhibit 1 all the land in this area is federal land and we have also contacted the U.S.G.S. and informed them of our intent and they said that they have no objection either to our proposals.

Q Now, are you seeking a project allowable for this project in accordance with Rule 701 of the Commission?

A Yes, we are.

Q In your opinion, will this proposed waterflood project be in the interest of conservation and the prevention of waste?

A Yes, I believe this to be true.

Q Will it also tend to protect correlative rights?

A Yes, sir, and it will also promote the greatest ultimate recovery of oil and gas from the project area.

MR. HINKLE: We would like to offer in evidence Exhibits 1 through 5.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record of this case.

MR. HINKLE: That's all of this witness.

(Whereupon, Applicant's Exhibits 1 through 5 were entered in the record.)

CROSS EXAMINATION

BY MR. UTZ:

Q Now, I believe the two reasons you stated for wanting to separate this from your flood to the north and the flood from the north incidentally does include all of Section 14?

A Yes, sir, it includes all of Section 14 plus the east half of the southeast quarter of Section 11.

Q The reasons were, first the multiple interests in the 80 acre tract?

A No, sir, there are multiple interests on the waterflood to the north, the Swearingen project.

Q And the longer life for your flood: you

anticipate longer life for your flood?

A Yes, sir, we predict that the Swearingen waterflood will continue for approximately another five years and that the waterflood on the Panco lease will continue for an additional nine and a third years.

Q I believe you said you did contact Gulf and you also have a waiver from them?

A Yes, sir. We contacted Marathon in addition and they said that they had no objections, and also the U.S.G.S.

Q Referring to your Exhibit No. 4, do you intend to load the annulus?

A Yes, sir, we plan to load the annulus with an inert fluid and to place a pressure gauge on the casing tubing annulus. This inert fluid will be an inhibited water.

Q The water you are going to buy from Double Eagle will be fresh water, undoubtedly?

A It is relatively fresh. We are using it at this time on the Swearingen project and notice no corrosion problems with it.

Q The produced water from your flood in Section

14, what kind of water is that?

A This is slightly salty. We are at this time submitting produced water analyses from this Swearingen lease to the state. We are treating the water on the Swearingen project with SO₂ to remove oxygen and also an inhibitor to reduce corrosion.

Q Then, the water you inject in this will be treated?

A Yes, sir, it will be.

Q The tubing will be plain unlined tubing?

A Yes, sir. We have been running coupons on the Swearingen lease and on the water injected there since November of 1965 and the corrosion rates are at a satisfactorily low level that we do not foresee any difficulties in the life of the flood, so we do not feel that there is any need for anything but unlined tubing.

MR. UTZ: Are there other questions of this witness?

REDIRECT EXAMINATION

BY MR. HINKLE:

Q I have one other question. In connection with

the proposed project area, is there diversity of ownership of over-riding royalties in that area and in Section 14?

A Yes, there are.

Q Is that another reason why you want to treat this as a separate project?

A Yes, because of these varying interests.

MR. HINKLE: That's all.

MR. UTZ: The witness may be excused.

Statements in this case? The case will be taken under advisement.

I N D E X

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<u>EXHIBIT</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
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[illegible]

I, GLENDA BURKS, 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 2nd day of May, 1969.

Glenda Burks
NOTARY PUBLIC

My Commission Expires:

March 12, 1973.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4110 heard by me on July 23 1969.
Frank J. Smith, Examiner
 New Mexico Oil Conservation Commission

Atlantic Richfield Company

North American Producing Division
New Mexico-Arizona District
Post Office Box 1978
Roswell, New Mexico 88201
Telephone 505 622 4041

W. P. Tomlinson
District Engineer

December 9, 1969

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

Attention: Mr. A. L. Porter, Jr.

Re: Atlantic Richfield Shugart
Panco Waterflood Project
Order No. R-3743 and
Administrative Order No.
WFX-323

Gentlemen:

This is to advise that Atlantic Richfield Company started injecting water into the recently drilled Panco Federal No. 4 on December 2, 1969. This well has 5-1/2" O.D. casing set at 3529' and cemented with 300 sacks. The injection formation is the Queen with perforations 3449' to 3459'. Injection is down 2-3/8" O.D. tubing with a packer set at 3396'.

The use of this well for water injection was authorized by Commission Order No. R-3743 and Administrative Order No. WFX-323.

Yours very truly,

W. P. Tomlinson
W. P. Tomlinson

MAO:jcb

cc: United States Geological Survey
P. O. Drawer "U"
Artesia, New Mexico 88210

New Mexico Oil Conservation Commission
P. O. Drawer "DD"
Artesia, New Mexico 88210

DEC 10 1969



File Carey
4110
no.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

April 29, 1969

Mr. Clarence Hinkle
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Dear Sir:

Enclosed herewith is Commission Order No. R-3743, entered in Case No. 4110, approving the Atlantic Richfield Panco Shugart Waterflood Project.

Injection is to be through the one authorized water injection well which is to be equipped with tubing set in a packer at approximately 3345 feet. The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface to facilitate detection of leakage in the tubing or packer.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 84 barrels per day when the South-east New Mexico normal unit allowable is 42 barrels per day or less.

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.

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.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

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Mr. Clarence Hinkle
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

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/DSH/ir

cc: Oil Conservation Commission
Hobbs and Artesia, New Mexico

U. S. Geological Survey
Artesia, New Mexico

Mr. D. E. Gray
State Engineer Office
Santa Fe, New Mexico

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BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 4110
Order No. R-3743

APPLICATION OF ATLANTIC-RICHFIELD
COMPANY FOR A WATERFLOOD PROJECT
AND AN UNORTHODOX INJECTION WELL
LOCATION, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 23, 1969,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 28th day of April, 1969, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Atlantic-Richfield Company, seeks
permission to institute a pilot waterflood project in the Shugart
Pool by the injection of water into the Queen formation through
an injection well to be drilled at an unorthodox location 100
feet from the North line and 100 feet from the West line of
Section 23, Township 18 South, Range 31 East, NMPM, Eddy County,
New Mexico.

(3) That the wells in the project area are in an advanced
state of depletion and should properly be classified as "stripper"
wells.

(4) That the proposed pilot waterflood project should result
in the recovery of otherwise unrecoverable oil, thereby preventing
waste.

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CASE No. 4110
Order No. R-3743

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Atlantic-Richfield Company, is hereby authorized to institute a pilot waterflood project in the Shugart Pool by the injection of water into the Queen formation through an injection well to be drilled at an unorthodox location 100 feet from the North line and 100 feet from the West line of Section 23, Township 18 South, Range 31 East, NMPM, Eddy County, New Mexico.

(2) That the subject pilot waterflood project is hereby designated the Atlantic Richfield Shugart Panco Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the pilot waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


ALEX J. ARMILLO, Member


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


esr/

ROUGH DRAFT FOR WATERFLOOD DETAILS

Mr. Clarence Hinkle
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Dear Sir:

Commission Order No. R-3743 entered in Case No.
4110, approving the Atlantic Richfield Pecos Shugart
Waterflood Project.

*Injection is to be through the one authorized
water injection well which is to be equipped
with tubing set in a packer at approximately
3345 feet. The casing-tubing annulus shall
be loaded with an inert fluid and equipped
with a pressure gauge at the surface to facilitate
detection of leakage in the tubing or packer*

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 84 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

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.

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

cc: OCC: Hobbs X
Artesia X
Aztec

USGS X Artesia

Mr. Frank Irby, State Engineer Office, Santa Fe, New Mexico
Mr. D. E. Gray

Case 4110

Heard 4-23-69

Rec. 4-24-69.

Grant Atlantic Rich - permission
to drill an unorthodox water
injection well 100' N & W line
sec. 23-185-31E, the yard -
Y-SR-Q-G. pool.

Pilot flood unit shall
be $N\frac{1}{2}$ $N\frac{1}{4}$ sec. 23.

Injection shall be done
 $2\frac{3}{8}$ tubing under a packer
set at approx. 3345 into
the Q. flr. then perforate
3420-3440.

Fresh water plus
some prod. water from the
flood tier sec. 14-185-31E
will be used.

— Stuart R. [Signature]

Docket No. 12-69

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 23, 1969

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

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

- CASE 4079: (Continued from the March 26, 1969, Examiner Hearing)
Application of Robert B. Holt for the creation of a new pool, assignment of a discovery allowable, and the promulgation of special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Middle Pennsylvanian oil pool for his Aztec State Well No. 2 located in Unit A of Section 26, Township 13 South, Range 32 East, Lea County, New Mexico, and for the assignment of an oil discovery allowable in the amount of approximately 48,715 barrels to said well. Applicant further seeks the promulgation of special pool rules for said pool, including a provision for 160-acre proration units and the assignment of 80-acre allowables.
- CASE 4106: Application of Southland Royalty Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Permo-Pennsylvanian formation in the perforated interval from approximately 9485 feet to 9713 feet in its Guye Well No. 4 located in Unit F of Section 12, Township 11 South, Range 33 East, Inbe Permo-Pennsylvanian Pool, Lea County, New Mexico.
- CASE 4107: Application of Coastal States Gas Producing Company for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the West Sawyer-San Andres Pool, Lea County, New Mexico, including a provision for 80-acre spacing and proration units.
- CASE 4108: Application of Humble Oil & Refining Company for the rededication of acreage, Lea County, New Mexico. Applicant, in the above-styled cause, seeks to recomplete its New Mexico "V" State Well No. 5, a non-commercial Wantz-Abo oil producer, to a Tubb gas producer and to consolidate the 40 acres presently dedicated to said well with the 120 acres presently dedicated to its New Mexico "V" State Well No. 11, a Tubb gas producer, to form a standard 160-acre proration unit comprising the SW/4 of Section 10, Township 21 South, Range 37 East, Tubb Gas Pool, Lea County, New Mexico. Applicant further seeks authority to produce the allowable assigned to said unit from either of said wells in any proportion.
- CASE 4109: Application of Humble Oil & Refining Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the South Lea Unit Area comprising 8,324.16 acres, more or less, of State, Federal, and Fee lands in Township 26 South, Range 36 East, Lea County, New Mexico.

CASE 4110: Application of Atlantic-Richfield Company for a waterflood project and unorthodox injection well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project by the injection of water into the Queen formation through one well to be drilled at an unorthodox location 100 feet from the North and West lines of Section 23, Township 18 South, Range 31 East, Shugart Pool, Eddy County, New Mexico.

CASE 4111: Application of Tenneco Oil Company for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Morton Federal Well No. 1, located in Unit A of Section 12, Township 9 South, Range 35 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Vada-Pennsylvanian Pool and the disposal of produced salt water through the intermediate casing-production casing annulus into the San Andres, Abo and possibly other formations in the open-hole interval from approximately 4050 feet to 8120 feet.

CASE 4112: Application of P-M Drilling Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Delaware formation in the perforated interval from approximately 5062 feet to 5100 feet in its James Federal Well No. 1 located in Unit A of Section 35, Township 23 South, Range 32 East, Triste Draw-Delaware Pool, Lea County, New Mexico.

CASE 4113: Application of Texas Pacific Oil Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks to substitute its State "D" A/c-1 Well No. 1 located in Unit A of Section 2, Township 12 South, Range 33 East, in lieu of its State "C" A/c-1 Well No. 1 located in Unit B of said Section 2 as the producing well for the proration unit comprising the N/2 NE/4 of said Section 2, Bagley-Siluro-Devonian Pool, Lea County, New Mexico.

CASE 4114: Application of Gulf Oil Corporation for two unorthodox oil well locations and amendment to Order No. R-2729, Lea County, New Mexico. Applicant in the above-styled cause, seeks authority to drill two producing oil wells at unorthodox locations in Township 19 South, Range 35 East, as infill wells in the West Pearl Queen Unit Waterflood Project, Pearl Queen Pool, Lea County, New Mexico, said wells to be located as follows:

West Pearl Queen Unit Well No. 164 to be located 1325 feet from the North line and 2635 feet from the West line of Section 32;

West Pearl Queen Unit Waterflood Well No. 165 to be located 1420 feet from the South line and 1325 feet from the West line of Section 29;

(Case 4114 continued)

Applicant also seeks the amendment of Order No. R-2729, which order authorized the aforesaid waterflood project, to establish a procedure whereby additional injection wells and producing wells at unorthodox infill locations, as may be necessary to complete an efficient injection and producing pattern, may be approved administratively.

CASE 4115: Application of Southern Union Production Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the W/2 of Section 16, Township 29 North, Range 9 West, Basin-Dakota Pool, San Juan County, New Mexico. Said acreage to be dedicated to a well to be drilled at a standard location in the W/2 of said Section 16. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4116: Application of Tesoro Petroleum Corporation for the amendment of Order No. R-2797 and for the extension of the South Hospah-Upper Sand Pool, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-2797, which order approved the Hospah Unit Agreement, to delete from said unit agreement 233.87 acres in the Southeast portion of Section 1, Township 17 North, Range 9 West, McKinley County, New Mexico. Applicant also seeks the extension of the South Hospah-Upper Sand Pool to include a portion of the Southeast quarter of said Section 1.

CASE 4117: Application of Eastern Petroleum Company for special pool rules, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special rules for the Rattlesnake-Dakota Pool, San Juan County, New Mexico, permitting the drilling of wells on 2 $\frac{1}{2}$ -acre spacing provided that no well be located nearer than 50 feet to the outer boundary of the quarter-quarter section and no nearer than 165 feet to another well producing from the same pool, and provided further, that a 40-acre proration unit would be subject to a 40-acre allowable regardless of the number of wells on the unit.

CASE 4118: Application of Dugan Production Corporation for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle gas production from undesignated Fruitland and Pictured Cliffs gas pools in the well-bore of its Federal "I" Well No. 4, located in the NE/4 NW/4 of Section 1, Township 29 North, Range 14 West, San Juan County, New Mexico.

CASE 4096: (Continued from the April 3, 1969, Examiner Hearing)

Application of Kersey & Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority

-4- Examiner Hearing - April 23, 1969

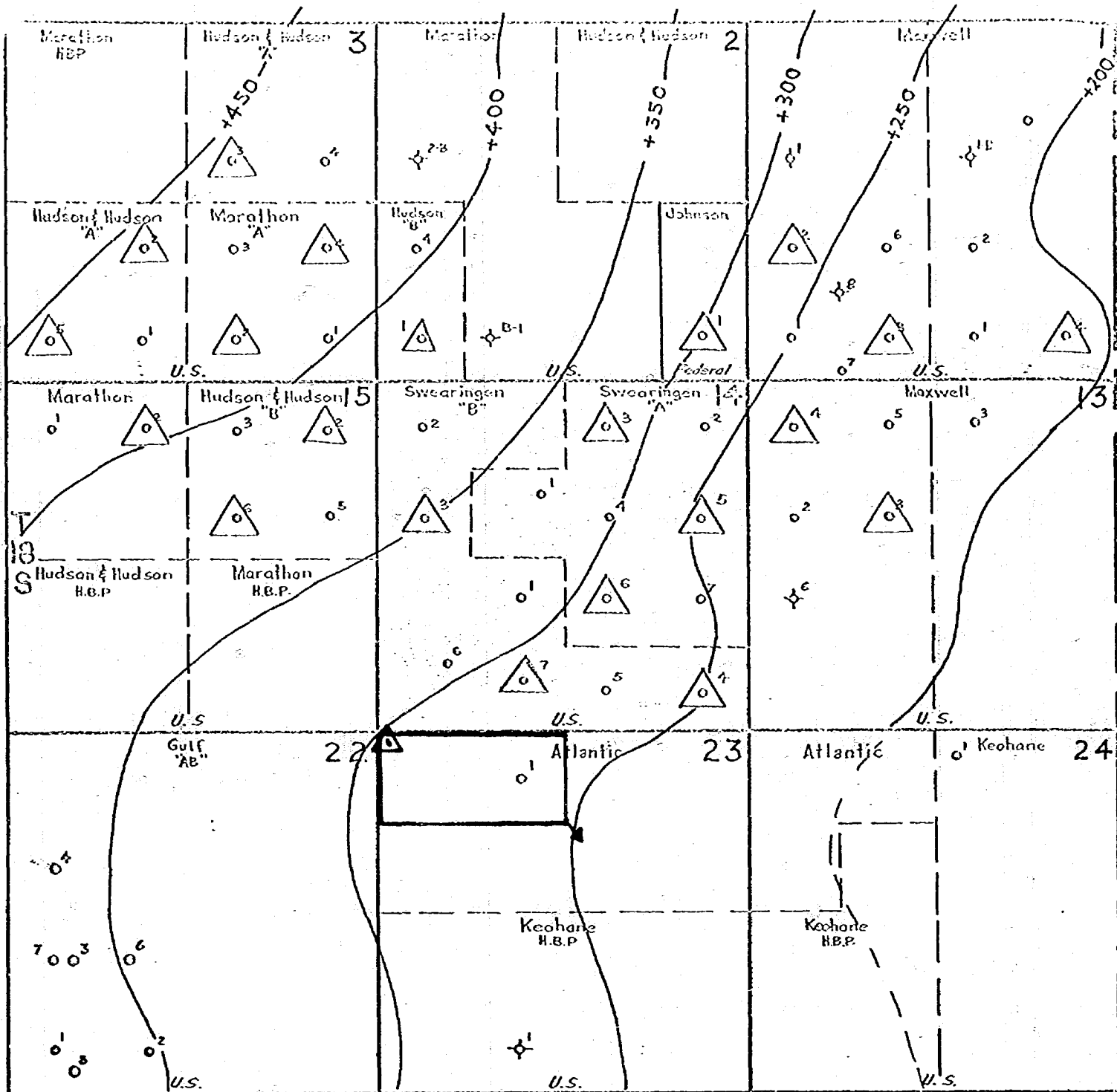
Docket No. 12-69

to institute a waterflood project by the injection of water into the Seven Rivers formation through four wells located in Units C, D, and F of Section 25, Township 17 South, Range 28 East, Aid (Yates-Seven Rivers) Pool, Eddy County, New Mexico.

CASE 4078: (Continued from the April 9, 1969, Examiner Hearing)

Application of J. Gregory Merrion for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Devils Fork-Gallup Pool and an undesignated Mesaverde oil pool in the well-bore of his NCRA State Well No. 3 located in Unit L of Section 16, Township 24 North, Range 6 West, Rio Arriba County, New Mexico.

R-31-E

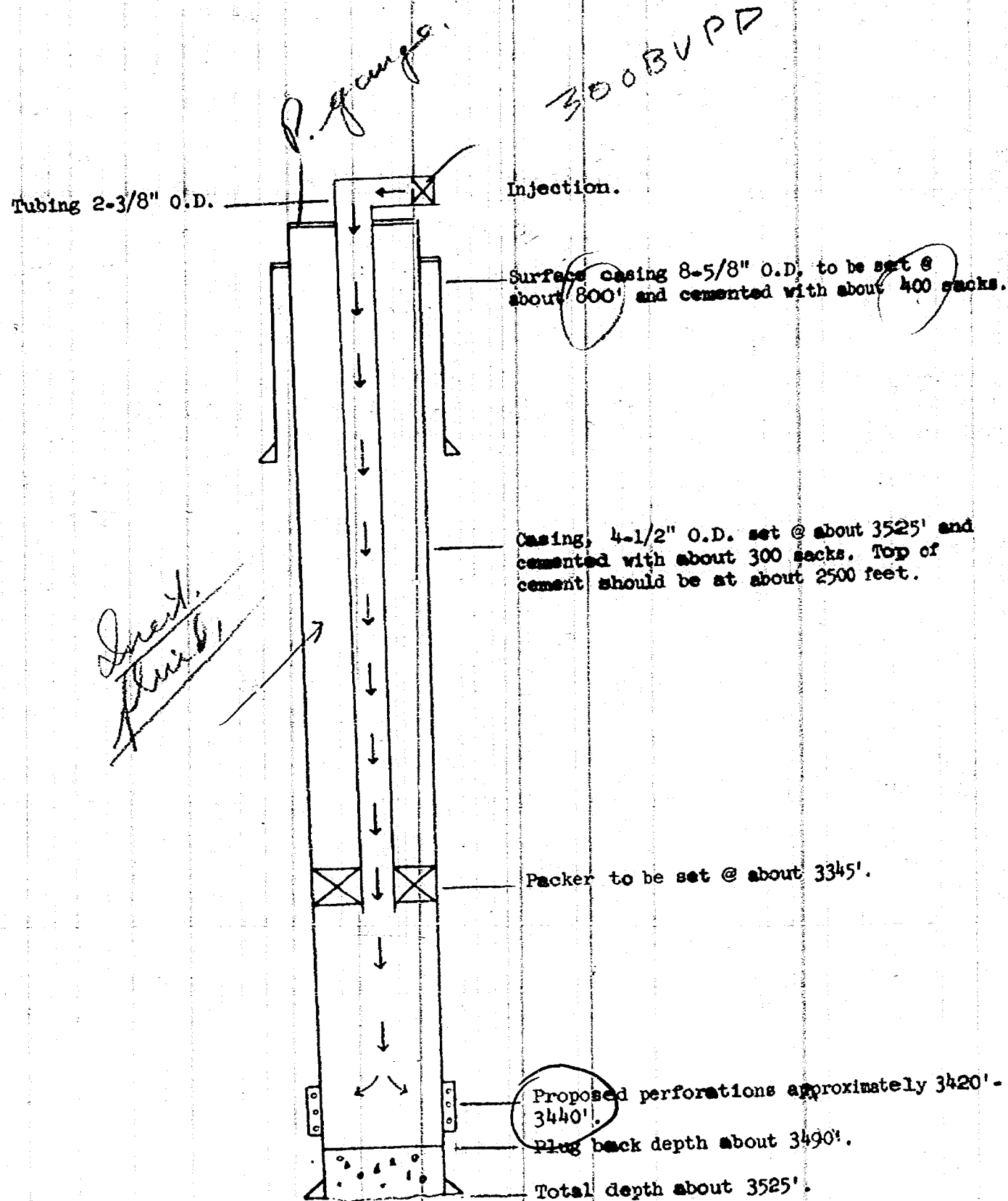


ATLANTIC RICHFIELD COMPANY
STRUCTURE MAP
CONTOURED ON QUEEN SAND
SHUGART FIELD
EDDY COUNTY, NEW MEXICO

EXHIBIT NO. 2

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
App. EXHIBIT NO. 2
CASE NO. 4110

ATLANTIC RICHFIELD COMPANY
SCHEMATIC DRAWING
PROPOSED PANCO FEDERAL NO. 2
STUART FIELD
EDDY COUNTY, NEW MEXICO
EXHIBIT NO. 4



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
App. EXHIBIT NO. 4
CASE NO. 4110

Atlantic Richfield Company North American Producing Division
New Mexico-Arizona District
Post Office Box 1978
Roswell, New Mexico 88201
Telephone 505 622 4041
W. P. Tomlinson
District Engineer

Exhibit 5



March 31, 1969

Gulf Oil Corporation ✓
P. O. Box 1933
Roswell, New Mexico 88201
Attention: Mr. M. I. Taylor

Marathon Oil Company
P. O. Box 552
Midland, Texas 79701
Attention: Mr. B. G. Howard

Re: Unorthodox Well Location
Panco Federal No. 2
100' FNL & 100' FWL, Sec. 23-138-31E
Eddy County, New Mexico

Gentlemen:

Atlantic Richfield Company plans to drill the above described well to a depth of approximately 3550' and complete it as a water injection well in the Queen sand. We expect to inject about 250 BWPD into this well with a surface pressure of approximately 1500 psi.

As shown on the attached map, this well would be drilled in an unorthodox location. We are currently filing applications with the New Mexico Oil Conservation Commission for authority to drill this well in the proposed unorthodox location and to conduct a waterflood on the Panco Lease. A hearing on these applications will probably be held on April 23, 1969. Attached for your reference is a copy of the exhibits we plan to present at the hearing.

If you have no objections to these applications, we would appreciate your signing and returning one copy of this waiver to the undersigned for presentation at the hearing.

Respectfully yours,

W. P. Tomlinson
W. P. Tomlinson

Company GULF OIL CORPORATION
Signed By *M. I. Taylor*
Date District Production Manager
April 1, 1969

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
App. EXHIBIT NO. 5
CASE NO. 110

CLARENCE E. HINKLE
W. E. BONDURANT, JR.
S. B. CHRISTY IV
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
MICHAEL R. WALLER
STUART D. SHANOR
C. D. MARTIN
PAUL J. KELLY, JR.

LAW OFFICES
HINKLE, BONDURANT & CHRISTY
600 HINKLE BUILDING
ROSWELL, NEW MEXICO 88201

April 7, 1969

MIDLAND, TEXAS OFFICE
521 MIDLAND TOWER
(915) MU 3-4891
OF COUNSEL: HIRAM M. DOW

TELEPHONE (505) 822-6510
POST OFFICE BOX 10

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico

Gentlemen:

We enclose herewith in triplicate application of Atlantic Richfield Company for approval of a pilot waterflood project in the Shugart Pool, Eddy County.

We would appreciate your placing this on the examiner's docket for April 23, 1969.

Yours very truly,

HINKLE, BONDURANT & CHRISTY

By

Clarence E. Hinkle
CH

CEH:cs
Enc.

DOCKET IN 100

Date 4-10-69

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Case #110

*Too late for 23 - let
for 7th of May*

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF ATLANTIC RICHFIELD COMPANY)
FOR APPROVAL OF PILOT WATERFLOOD PROJECT)
CONSISTING OF THE N $\frac{1}{2}$ NW $\frac{1}{4}$ SECTION 23, TOWN-)
SHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M.)
EDDY COUNTY, NEW MEXICO AS TO THE QUEEN)
SAND FORMATION, SHUGART POOL, AND APPROVAL)
OF UNORTHODOX LOCATION OF AN INJECTION)
WELL TO BE LOCATED 100 FEET FROM THE NORTH)
AND WEST LINES OF SAID SECTION 23)

Case 4110

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Comes Atlantic Richfield Company, acting by and through the undersigned attorneys, and hereby makes application for approval of a pilot waterflood project consisting of the N $\frac{1}{2}$ NW $\frac{1}{4}$ Section 23, Township 18 South, Range 31 East, N.M.P.M. Eddy County, New Mexico as to the Queen Sand formation, Shugart Pool, and approval of an unorthodox location of an injection well to be located 100 feet from the North and West lines of said Section 23, and in support thereof respectfully shows:

1. That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "A", a plat showing the proposed pilot waterflood project area consisting of the N $\frac{1}{2}$ NW $\frac{1}{4}$ Section 23, Township 18 South, Range 31 East. Applicant has a well located in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ said Section 23, being in the proposed project area, producing from the Queen Sand formation. Atlantic Richfield is also the owner of the oil and gas lease covering all of the N $\frac{1}{2}$ Section 23 and in addition the leases covering all of Section 14 adjoining Section 23 to the north. Exhibit "A" also shows all wells within more than a 2 mile radius of the proposed project area.

2. The proposed injection well will be located 100 feet from the North and West lines of said Section 23 and there is attached hereto, made a part hereof, and for purposes of identification marked Exhibit "B", a schematic drawing showing all casing strings, including diameters and setting depths, quantities used and tops of cement, proposed perforated interval, tubing strings, including diameters and setting depths, and the location of the packer.

3. There is also filed herewith a log of Atlantic Richfield's Panco-Federal No. 1 well located 1980 feet from the West line and 660 feet from the North line of said Section 23, being the producing well above referred to located on the project area.

4. Applicant will furnish copies of this application to the offset lease owners.

5. The proposed project area is to be a separate project area and not supplemental to the waterflood project covering Section 14, Township 18 South, Range 31 East, and applicant desires that an allowable be assigned to the project area in accordance with Rule 701 of the Commission.

6. In the opinion of applicant, the proposed pilot waterflood project will be in the interest of conservation and prevention of waste and will promote the greatest ultimate recovery from the proposed project area.

7. Applicant requests that this matter be placed on the examiner's docket for hearing on April 23, 1969.

Respectfully submitted,

ATLANTIC RICHFIELD COMPANY

By Clarence E. Hinkle

Member of the Firm of
HINKLE, BONDURANT & CHRISTY
Box 10
Roswell, New Mexico
Attorneys for Applicant

ATLANTIC RICHFIELD COMPANY
 SCHEMATIC DRAWING
 PROPOSED PANCO FEDERAL NO. 2
 SHUGART FIELD
 EDDY COUNTY, NEW MEXICO
 EXHIBIT NO. B

Tubing 2-3/8" O.D.

Injection.

Surface casing 8-5/8" O.D. to be set @ about 800' and cemented with about 400 sacks.

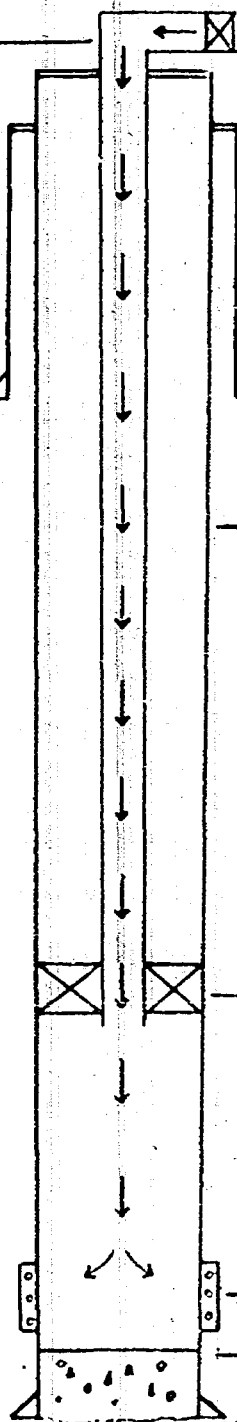
Casing, 4-1/2" O.D. set @ about 3525' and cemented with about 300 sacks. Top of cement should be at about 2500 feet.

Packer to be set @ about 3345'.

Proposed perforations approximately 3420'-3440'.

Plug back depth about 3490'.

Total depth about 3525'.



DRAFT

GMH/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

DNA
E
IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING: *gda-spec ltr*
Jan

ALP
CASE No. 4110

Order No. R-3743

APPLICATION OF ATLANTIC-RICHFIELD COMPANY
FOR A WATERFLOOD PROJECT AND AN UNORTHODOX
INJECTION WELL LOCATION, EDDY COUNTY, NEW
MEXICO. *4-25-69*

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 23, 1969,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of April, 1969, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Atlantic-Richfield Company, seeks
permission to institute a pilot waterflood project in the Shugart
Pool by the injection of water into the Queen formation through
an injection well to be drilled at an unorthodox location 100
feet from the North line and 100 feet from the West line of
Section 23, Township 18 South, Range 31 East, NMPM, Eddy County,
New Mexico.

(3) That the wells in the project area are in an advanced
state of depletion and should properly be classified as "stripper"
wells.

(4) That the proposed ^{pilot} waterflood project should result in
the recovery of otherwise unrecoverable oil, thereby preventing
waste.

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Atlantic-Richfield Company,
is hereby authorized to institute a ^{pilot} waterflood project in the
===== Unit Area Shugart Pool
by the injection of water into the Queen formation
~~through the following described wells in Township~~ XXXXXXXXXXXX
~~North, South, Range~~ XXXXXXXXXXXX ~~West, East, NPM,~~ XXXXXXXXXXXX
~~County, New Mexico~~

through an injection well to be drilled at an unorthodox location
100 feet from the North line and 100 feet from the West line of
Section 23, Township 18 South, Range 31 East, NPM, Eddy County,
New Mexico.

(2) That the subject ^{pilot} waterflood project is hereby designated
the Atlantic Richfield Shugart Pauso Waterflood Project and shall
be governed by the provisions of Rules 701, 702, and 703 of the
Commission Rules and Regulations.

(3) That monthly progress reports of the ^{pilot} waterflood project
herein authorized shall be submitted to the Commission in accor-
dance with Rules 704 and 1120 of the Commission Rules and Regula-
tions.

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

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

400' water " proj.

Shaw's Rockfield Co.

Pied Mt. Hld.

N/2 NW/4 23 18S 31E Eddy Co.

Queen sand

Shugart Pool

unworked in well loc

100' FNL & 100' FWL 23

called in by Clarence Hinkle 4/1/69