

CASE 3489: Application of WILLIAM
A. & EDWARD R. HUDSON for a water
flood expansion, Eddy County.

CASE No.
3489

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

December 6, 1966

C
O
P
Y

Mr. Fred Watson
Watson & Watson
Attorneys at Law
Carper Building
Artesia, New Mexico

Dear Sir:

Reference is made to Commission Order No. R-3151, recently entered in Case No. 3489, approving the expansion of Hudson & Hudson's Maljamar Puckett Waterflood Project.

Injection is to be into two zones of the authorized water injection well, water being injected into the San Andres formation through tubing set in a packer at approximately 3600 feet, and into the Grayburg formation through the casing-tubing annulus.

As to allowable, as far as we can tell, no new 40-acre units will be added to the project area. Instead one extra well on an existing 40 is being added and the maximum allowable increased by 14 barrels per day.

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

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

-2-

Mr. Fred Watson
Watson & Watson
Artesia, New Mexico
December 6, 1966

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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/ir

cc: Mr. Frank Irby
State Engineer Office
Santa Fe, New Mexico

Oil Conservation Commission
Artesia, New Mexico



SKELLY OIL COMPANY

TULSA, OKLAHOMA 74102

PRODUCTION DEPARTMENT

C. L. BLACKSHER, VICE PRESIDENT
W. P. WHITMORE, MGR. PRODUCTION
W. D. CARSON, MGR. TECHNICAL SERVICES
ROBERT G. HILTZ, MGR. JOINT OPERATIONS
GEORGE W. SELINGER, MGR. CONSERVATION

October 31, 1966

Re: Case No. 3489
Application of William A. and
Edward R. Hudson

VIA AIR MAIL

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

Attention: Mr. Daniel Mutter

Gentlemen:

Skelly Oil Company has been advised by the applicant, William A and Edward R. Hudson, that they desire to drill an unorthodox water injection well, to be known as their Puckett "A" No. 30 well in Section 24, Township 17 South, Range 31 East, N.M.P.M. We understand applicant also seeks authority to expand their Puckett "A" waterflood project by injection of water into this well at an unorthodox location 1345' from the north line and 25' from the west line of said Section 24.

This is to advise that Skelly Oil Company as an offset operator has no objection, and in fact supports the application of the applicant, and urges the Commission to grant the relief requested.

Yours very truly,

George W. Selinger
by *R. J. J. J.*

RJJ:br

cc-via Air Mail

Mr. Neil B. Watson, Attorney
P. O. Drawer E
Artesia, New Mexico

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. 3489
Order No. R-3151

APPLICATION OF WILLIAM A. AND EDWARD R.
HUDSON FOR A WATERFLOOD EXPANSION, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 2, 1966,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 14th day of November, 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 the applicants, William A. and Edward R. Hudson,
seek permission to expand their Puckett "A" Waterflood Project
in the Maljamar Pool by the injection of water into the Grayburg-
San Andres formation through their Puckett "A" Well No. 30 to be
drilled at an unorthodox location 1345 feet from the North line
and 25 feet from the West line of Section 24, Township 17 South,
Range 31 East, MNPM, Eddy County, New Mexico.

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

(4) That the proposed expansion of the Puckett "A" Water-
flood Project should result in the recovery of otherwise
unrecoverable oil, thereby preventing waste.

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CASE No. 3489

Order No. R-3151

(5) That injection into the San Andres formation should be through 2 3/8-inch tubing installed in a packer set at approximately 3600 feet and into the perforated intervals from 3635 feet to 3655 feet and from 3875 feet to 3920 feet.

(6) That injection into the Grayburg formation should be through the annulus between the 2 3/8-inch tubing and the 5 1/2-inch casing and into the perforated interval at approximately 3550 feet.

(7) That the subject application should be approved and the expanded 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 applicants, William A. and Edward R. Hudson, are hereby authorized to expand their Puckett "A" Waterflood Project in the Maljamar Pool by the injection of water into the Grayburg-San Andres formation through their Puckett "A" Well No. 30 to be drilled at an unorthodox location 1345 feet from the North line and 25 feet from the West line of Section 24, Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico.

(2) That injection into the San Andres formation shall be through 2 3/8-inch tubing installed in a packer set at approximately 3600 feet and into the perforated interval from 3635 feet to 3655 feet and from 3875 feet to 3920 feet.

(3) That injection into the Grayburg formation shall be through the annulus between the 2 3/8-inch tubing and the 5 1/2-inch casing and into the perforated interval at approximately 3550 feet.

(4) That the expanded waterflood project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

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

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CASE No. 3489
Order No. R-3151

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

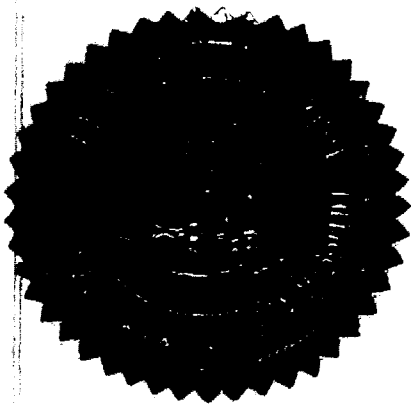
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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



esx/

Case 3489

Heard 11-2-60

Rec 11-4-66

1. Grant Hudson & Hudson permission to drill an additional injection well at an unorthodox location 1345/N, 25/E line sec. 24-17S-34E in their Puckett waterflood. Injection shall be ^{into the 3rd & 4th formation.} thru tubing & under a packer set at approx 3600'. Injection into the Grayhen formation will be thru the 2 $\frac{3}{8}$ x 5 $\frac{1}{2}$ inch ~~annulus~~ Annulus with Grayhen perforations are at 3550.

Thrust

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

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

November 14, 1966

Mr. Fred Watson
Watson & Watson
Attorneys at Law
Carper Building
Artesia, New Mexico

Re: Case No. 3489
Order No. R-3151
Applicant:

Wm. A. & Edward R. Hudson

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.
A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other Mr. Frank Irby



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

October 26, 1966

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

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

105 OCT 27 1966

Dear Mr. Porter:

Reference is made to the Application of William A. and Edward R. Hudson dated October 18, 1966 which seeks commission approval to drill an unorthodox well location for water injection service to be known as the Puckett "A" #30 well in Sec. 24, T. 17 S., R. 31 E.

This office offers no objection to the granting of this application provided the commission is convinced that the casing, cementing, tubing and injection program proposed by the applicant will adequately control the injected fluid and prevent the commingling of the fluids and gases from stratum to stratum.

It is noted that perforations are indicated above the packer, which in turn indicates this well will be used as a dual. If this is to be a dual completion of any sort, I would call to your attention that the 5½" casing will be the only protection against commingling of fluids and gases between the depths 600' and 3100' below land surface, and that no statement is made regarding the quality of the casing to be used in this new well.

FET/ma
cc-Hudson & Hudson
F. H. Hennighausen

Yours truly,

S. E. Reynolds
State Engineer

By: *Frank W. Trby*
Frank W. Trby,
Chief,
Water Rights Div.

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 2, 1966

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 3479: Application of Gulf Oil Corporation for an exception to Rule 8 of Order No. R-1638 and to Rule 301, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 8 of Order No. R-1638 and to Rule 301 of the Commission rules and regulations to permit discontinuance of individual gas-oil ratio tests in its West Bisti-Lower Gallup Sand Unit, Bisti-Lower Gallup Pool, San Juan County, New Mexico. Applicant proposes to report gas production and ratios on a unit-wide basis rather than individual well GOR data.

CASE 3480: Application of Tidewater Oil Company for a capacity allowable, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3097 which permitted its GO State "J" Well No. 1 located in Unit H of Section 7, Township 17 South, Range 33 East, Lea County, New Mexico, which directly offsets the Malmar Unit Waterflood Project, to be produced at capacity for a period not to exceed 90 days from date of said order. Applicant seeks additional time in which to produce said well at capacity and the establishment of an administrative procedure for further extensions.

CASE 3336 (Reopened)

In the matter of Case No. 3336 being reopened pursuant to the provisions of Order No. R-3005, which order established 80-acre spacing units for the East Hightower-Upper Pennsylvanian 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 3481: Application of Sinclair Oil & Gas Company for a non-standard gas proration unit and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the NW/4 of Section 7, Township 22 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to be dedicated to its State 157 "B" Well No. 1 located at an unorthodox location for said pool 330 feet from the North line and 2310 feet from the West line of said Section 7.

- CASE 3482: Application of Sinclair Oil & Gas Company for a special gas well test, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce and flare up to three million cubic feet of gas per day, for a maximum of 30 days, from its Hackberry Hills Unit Well No. 4 located in Unit F of Section 22, Township 22 South, Range 26 East, Eddy County, New Mexico, as a reservoir limit test to determine the economic feasibility of a pipeline connection to said well.
- CASE 3483: Application of H. S. Moss for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Wolfcamp formation in the interval from 9751 to 9850 feet in its D. P. Peck Well No. 1 located in Unit C of Section 26, Township 12 South, Range 37 East, Gladiola Field, Lea County, New Mexico.
- CASE 3484: Application of Phillips Petroleum Company for a pilot waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project by the injection of water into the Grayburg-San Andres formation through its Santa Fe Well No. 14 located in Unit P of Section 20, Township 17 South, Range 35 East, Vacuum Field, Lea County, New Mexico.
- CASE 3485: Application of Phillips Petroleum 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 Grayburg-San Andres formation through three injection wells located in Sections 8, and 9, Township 17 South, Range 33 East, Vacuum Field, Lea County, New Mexico.
- CASE 3486: Application of Shenandoah Oil Corporation 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 Grayburg-San Andres formation through four injection wells located in Sections 7, 8 and 16, Township 17 South, Range 33 East, Vacuum Field, Lea County, New Mexico.
- CASE 3487: Application of Amerada Petroleum Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its State "SN" Unit Area comprising 692 acres, more or less, of State land in Sections 3 and 4, Township 15 South, Range 33 East, Lea County, New Mexico.

CASE 3488: Application of Amerada Petroleum Corporation for a waterflood expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Saunders SB Waterflood Project by the injection of water into the Permo-Pennsylvanian zone through its Texaco-State "AQ" Well No. 2 located in Unit E of Section 3, Township 15 South, Range 33 East, Saunders Permo-Pennsylvanian Pool, Lea County, New Mexico.

CASE 3489: Application of William A. and Edward R. Hudson for a waterflood expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand their Puckett A Waterflood Project by the injection of water into the Grayburg-San Andres formation through their Puckett A Well No. 30 to be drilled at an unorthodox location 1345 feet from the North line and 25 feet from the West line of Section 24, Township 17 South, Range 31 East, Maljamar Pool, Eddy County, New Mexico.

CASE 3490: Application of Sunray DX Oil Company for pool redelineation, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks the redelineation of the Todd-San Andres Pool, Roosevelt County, New Mexico, into two separate pools: The Todd Upper-San Andres Gas Pool comprising that portion of the San Andres formation above the anhydrite bed found at 4200 feet in the Franklin, Aston and Fair Mark Federal Well No. 1 located in Unit M of Section 26, Township 7 South, Range 35 East, and the Todd Lower-San Andres Pool comprising that portion of the San Andres formation below said anhydrite bed, said Todd Lower-San Andres Pool to be governed by the existing rules for the present Todd-San Andres Pool. Also to be considered at said hearing will be such matters as the effective date of the aforesaid redelineation, the period of time in which to effect dual completion of the affected wells, the distribution of the affected wells' accumulated status in the present pool (overproduction and underproduction) to each of the new pools, and such other pertinent matters as may relate to the aforesaid pool redelineation. Also to be considered will be special pool rules for the proposed Todd Upper-San Andres Gas Pool, including 320-acre spacing for wells located therein.

BEFORE THE OIL CONSERVATION COMMISSION OF NEW MEXICO

APPLICATION OF WILLIAM A. & EDWARD R. HUDSON
FOR APPROVAL OF THE DRILLING OF AN UNORTHODOX
WELL LOCATION FOR WATER INJECTION WELL TO BE
KNOWN AS PUCKETT "A" NO. 30 WELL, AND FOR THE
APPROVAL OF WATER INJECTION INTO SAID WELL, ALL
IN THE WILLIAM A. & EDWARD R. HUDSON WATER FLOOD
PROJECT KNOWN AS THE PUCKETT "A" WATER FLOOD IN
THE MALJAMAR POOL, GRAYBURG-SAN ANDRES FORMATIONS,
EDDY COUNTY, NEW MEXICO.

Page 3489

A P P L I C A T I O N

COME NOW William A. and Edward R. Hudson and apply to the
Oil Conservation Commission of the State of New Mexico for the
following:

1. Approval of unorthodox well location for a water injection
well, said well to be known as Puckett "A" No. 30 Well, to be drilled
1345 feet from the North Line and 25 feet from the West Line of Section
24, Township 17 South, Range 31 East, N.M.P.M., Eddy County, New Mexico.

2. Approval of water injection to utilize the said well
for the injection of water. There is attached hereto and made a part
hereof a plat showing the location of the proposed unorthodox injection
well and the location of all other wells within a radius of two miles
from said proposed injection well. Said plat also shows the lessees
within said two-mile radius. Also attached hereto and made a part
hereof is a diagrammatic sketch of a typical injection well completion,
to be utilized in the event of approval of this Application.

By copy of this Application, notice has been given to the
Office of the State Engineer of the State of New Mexico, as required
by the rules of the Commission.

Water injection will be made into the Grayburg-San Andres
Formations at depths of approximately 3600 feet to 4000 feet. Source

of water is the Ogallala Formation, the water supplier being the Caprock Water Company. Estimated volume of water to be injected will vary between 200 barrels and 800 barrels of water per day.

Approval of this Application is in the interest of conservation, will permit the recovery of a maximum amount of oil, and is essential for the protection of correlative rights of the applicant and will not impair the correlative rights of offset operators.

WHEREFORE, applicants pray that this matter be set for hearing and that after notice and hearing as required by law, the Commission issue its Order approving the Application of William A. and Edward R. Hudson, as applied for herein.

Respectfully submitted,

WILLIAM A. & EDWARD R. HUDSON

By

WATSON & WATSON

By

Neil Blawie
Attorneys for Applicants,
P. O. Drawer E,
Artesia, New Mexico.

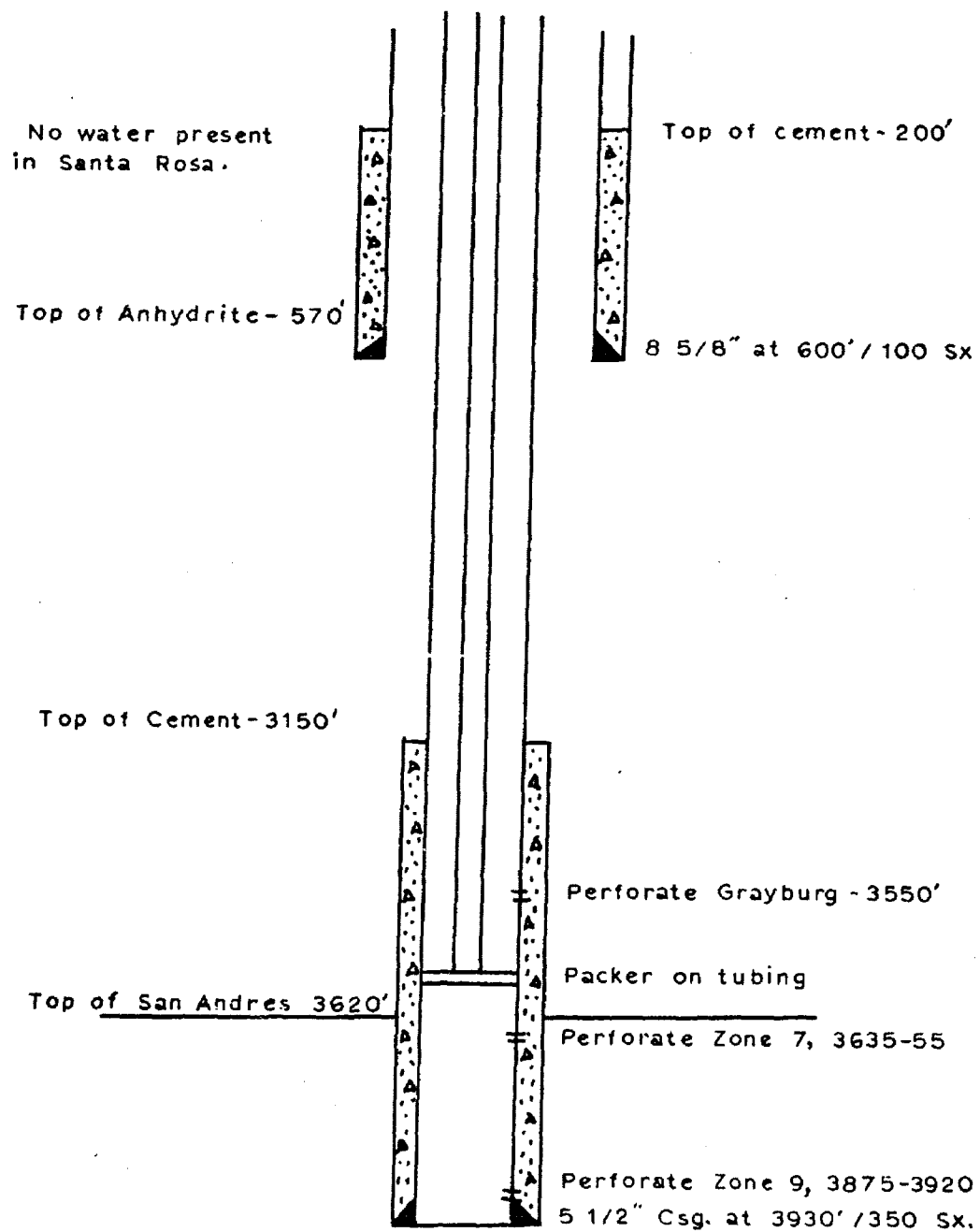
CERTIFICATE

The undersigned hereby certifies that he is one of the attorneys for William A. & Edward R. Hudson, the operators and applicants in the foregoing Application; that on the 18 day of October, 1966, he mailed a true and complete copy of this Application, together with all Exhibits, to the Office of the State Engineer, Capitol Building, Santa Fe, New Mexico.

DATED this 18 day of October, 1966.

Neil Blawie

DIAGRAMMATIC SKETCH
WILLIAM A. & EDWARD R. HUDSON
PUCKETT "A"-30
PROPOSED WATER INJECTION WELL



RALPH L. GRAY
PETROLEUM ENGINEERING

NEIL B. WATSON
FRED A. WATSON

LAW OFFICES
WATSON & WATSON
CARPER BUILDING - P. O. DRAWER E
ARTESIA, NEW MEXICO
88210

AREA CODE 505
746-4151 - 746-2201

October 18, 1966

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

Case 3489

Attention: Mr. Dan Nutter

Re: Application of William A. and Edward Hudson,
Puckett "A" No. 30 Water Injection Well.

EX-11 AM 8 11

I now enclose the original and two copies of the Application of William A. and Edward R. Hudson to drill their unorthodox water injection well, to be known as their Puckett "A" No. 30 Well in Section 24, Township 17 South, Range 31 East, N.M.P.M.

This is the Application that I discussed briefly with Mr. Nutter when he was here, and it is our understanding that the hearing will be held on Wednesday, November 2, 1966.

We would appreciate having a copy of the Notice of hearing.

Yours very truly,

Neil B. Watson
Neil B. Watson.

NEW:lve
enc.

✓ cc :Continental Oil Company,
Box 460,
Hobbs, New Mexico.

EX-11 AM 8 11

cc :Skelly Oil Company,
Box 38,
Hobbs, New Mexico.

cc :Office of the State Engineer,
Santa Fe, New Mexico.

(each with copy of Application)

DOCKET MAILED

Date 10-24-66
76

Page No. 2

cc :William A. and Edward R. Hudson,
1510 First National Building,
Fort Worth, Texas.

(with copy of Application)

cc :Mr. Ralph L. Gray,
Box 198,
Artesia, New Mexico.

BEFORE THE OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

M E M O R A N D U M

TO: Mr. Dan Nutter

Re. Application of William A. and Edward R. Hudson for drilling of unorthodox well location for water injection well, said well to be known as "Puckett A No. 30 Well", ¹³⁴⁵~~1320~~ feet from the north line and 25 feet from the west line of Section 24, Township 17 South, Range 31 East, N.M.P.M., and for approval of water injection into said William A. and Edward R. Hudson - Puckett A No. 30 Well, all in the William A. and Edward R. Hudson Water Flood Project known as the Puckett A Water Flood in the Maljamar Pool, Grayburg - San Andres Formations, Eddy County, New Mexico.

Name and address of the off-set operators: Skelly Oil Company and Continental Oil Company.

Neil B. Watson,
Watson and Watson,
Attorneys at Law,
P. O. Drawer E,
Artesia, New Mexico.

October 13, 1966

dearnley-meier reporting service, inc.

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

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



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 2, 1966

EXAMINER HEARING

IN THE MATTER OF:
Case No. 3489. Application of
William A. and Edward R. Hudson
for a water flood expansion,
Eddy County, New Mexico.

Case No. 3489

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: The hearing will come to order. Case 3489.

MR. HATCH: Case 3489. Application of William A. and Edward R. Hudson for a Water Flood Expansion, Eddy County, New Mexico.

MR. WATSON: Mr. Examiner, these are in order that they will be presented and they can be marked just like they have been marked on the front. One, two, three and four.

Fred Watson, of Watson & Watson, Artesia, Attorneys appearing for the applicants and there is one witness who should be sworn at this time.

RALPH GRAY called by the applicant, first having been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WATSON:

Q For the record, please state your name and your occupation and the particulars of your present employment in this case?

A I am Ralph L. Gray, Consulting Engineer. I represent William A. and Edward R. Hudson.

Q Mr. Gray, you have testified before the New Mexico Oil Conservation Commission on previous occasions?

A Yes, sir.

MR. WATSON: Are his qualifications acceptable?

MR. UTZ: Yes, sir. They are.

Q (By MR. WATSON:) The case involves an application of William A. and Edward R. Hudson for the approval of an unorthodox oil location for water injection well, to be known as Puckett A No. 30 Well, to be drilled thirteen hundred and forty-five feet from the north line and twenty-five feet from the west line of Section 24, Township 17 South, Range 31 East N.M., Eddy County, New Mexico and of course includes approval of water injection to utilize the well for the injection of water. Mr. Gray, I will refer you to what has been marked in this case, Exhibit "1", applicant's Exhibit "1" and will ask you if that exhibit was prepared by you?

A Yes, sir. It was.

Q And what does that exhibit depict?

A Exhibit "1" shows a map of the area. The location of Puckett A No. 30 is shown on the map by the red dot and the red arrow. Exhibit "1" also shows the project area for the Puckett A Water Flood and the present water injection wells are indicated on the map by the green coloring in circles.

Q You are familiar with the Puckett A lease water flood project?

A Yes, sir.

Q That is the project of the applicant Hudson and Hudson?

A Yes, sir.

Q Well, what does that project consist of?

A At the present time the applicant is injecting water into the San Andres formation. The Puckett A lease is the lease that is being water flooded. There are presently fourteen water injection wells and the approximate depth is thirty-six hundred to four thousand feet.

Q And what is your source of water?

A The source of water is the fresh Ogallala water which is purchased from the Double Eagle Water Company.

Q Now, then, I will hand you what has been marked as Applicant's Exhibit "2" and ask you if that was prepared by you?

A Yes, sir.

Q What does that exhibit purport to show?

A Exhibit "2" is a diagrammatic sketch of Puckett A No. 30, proposed water injection well. The figures that are indicated for various items on the sketch, are of course, estimated figures in as much as the well hasn't been drilled yet. The applicant proposes to cement eight and five-eighths casing at a depth of approximately six hundred feet which will be in the Russler Anhydrite section and this casing will be cemented with one hundred sacks. The top of the cement is estimated to come up to approximately two hundred feet from the surface. There is no water sand in this area, the Santa

Rosa formation being perfectly dry. In the injection stream will be five and a half, fifteen and a half pound J55 new casing which will be set through all of the pay zones at an estimated depth of thirty-nine hundred and thirty feet. And, this stream will be cemented with three hundred and fifty sacks, which should come up to approximately a depth of thirty-one hundred and fifty feet from the surface.

Then in completing the well, it is proposed to perforate a pay zone in the Grayburg formation at approximately thirty-five hundred and fifty feet. Also perforations will be made in the San Andres Zone, Seven, at an estimate interval of thirty-six, thirty-five to thirty-six, fifty-five. Also San Andres will be perforated in Zone Nine at an interval estimated to be thirty-eight seventy-five to thirty-nine twenty.

It is anticipated that the two and three-eighths inch tubing will be set between the Grayburg and the top zone in the San Andres on a packer, and water injection will be injected down the tubing which will go into the San Andres zone and we also propose to inject water down the casing which will be injected into the Grayburg sand. We propose to separate the Grayburg from the San Andres with the injection water since it has been found that the zones require different pressures and this will be the most efficient way to flood.

Also I might add that we have other similar wells completed in this project and we have a regular scheduled program. Once each month the valve on the Bradenhead between the eight and five-eighths casing, and the five and a half casing is opened up to check to see if there is any pressure, and of course should there be any kind of failure in the five and a half inch casing, this would be readily detected.

I believe that is all the comment I have on Exhibit "2".

Q Exhibit "3" is labeled "Well Test". Was this prepared by you?

A Yes, sir, it was.

Q And what does it reflect?

A Exhibit "3" shows well tests, oil and water production for the Puckett A Wells and for four wells on the Puckett B lease. The first column shows well tests made prior to injection. The middle column shows well tests in August 1966 and the third column shows well tests for September 1966.

In order to summarize this group of wells on the A lease, prior to water injection tested a hundred and thirty-four barrels of oil and forty-nine barrels of water. And, this same grouping September 1966 tested four hundred and eight-six barrels of oil and a hundred and forty-two barrels of water. This shows the response that has been obtained up

to the present time.

Q I will refer you to Applicant's Exhibit "4" in this case and ask you if that was prepared by you?

A Yes, sir, it was.

Q And what does that exhibit show?

A Exhibit Number "4" shows the performance, data for each of the producing wells and also for each of the injection wells within the flood area. On the injection wells, the daily average water injected is shown in the top left hand box for each well, and the average well-head pressure is shown in the upper right hand box. The cumulative water injected to date is indicated in the lower box. On the producing wells, the present average, daily oil production, is shown in the upper left hand box. The average daily water production is shown in the upper right hand box and the cumulative secondary oil recovered through September, is shown in the lower box.

In order to summarize the project through September 1966, the total water injected in the project was four million two hundred and thirty-four thousand, one hundred and thirty barrels. The oil produced from the project was four hundred and twenty-two thousand, seven hundred and twenty-one barrels and the water -- that's secondary oil and then the water produced is a hundred and fifty-eight thousand, five hundred and ninety-four barrels.

Q Mr. Gray, Skelly Oil Company offsets the location of the injection wells proposed to be drilled by this application, have you had any correspondence with, or information from Skelly as to their opinion with respect to this application?

A Yes, sir. We have had at least two meetings with the Skelly engineers, and we have had some tentative agreement on the injection patterns and plan of operation along this lease line. At the present time, we have a proposed lease line agreement with Skelly Oil Company which is being studied and, we believe at this time, that we will be able to sign a satisfactory agreement with Skelly in order to affect a lease-line agreement.

Q In your opinion, what result would this Puckett A 30 Well, if drilled in the proposed location, what affect would it have as to the recovery of oil from this water flood project?

A Well, we think the drilling of this well will make it possible to recover oil which otherwise would not be recovered. And, it is being drilled on the same pattern which is being used throughout this project.

Q I see. Will it protect the correlative rights involved in this matter?

A Yes, sir. The well will be twenty-five feet from

the lease line and that is one of our thoughts in drilling close to the lease line, is that this will be the best possible means to protect the correlative rights of both parties.

Q It will not result in an impairment of the other parties' correlative rights?

A No, sir.

Q Would it be your recommendation that this well be drilled?

A Yes, sir. We recommend it.

MR. WATSON: Mr. Examiner. We believe that the file will reflect a letter from the Honorable S. E. Reynolds by Mr. Frank E. Irby, stating that the State Engineer of New Mexico offers no objection to granting of the application, but setting forth certain precautionary matters upon which the Commission should satisfy itself.

MR. UTZ: Did you get your copy?

MR. WATSON: Yes, sir.

MR. UTZ: When was it written?

MR. WATSON: On October the 26th.

WITNESS: I might add --

MR. UTZ: You did say that the casing was new casing didn't you?

WITNESS: Yes, sir. I might add that after receiving

that letter I did have a discussion with Mr. Irby over the telephone and I explained some of these features that I am sure that was in his mind and he seemed to be satisfied with the proposal.

We propose to inject only fresh water down the casing in this well, so there will not be any chance for salt water to get out into any other formation foreign to the injection project.

MR. WATSON: If I might digress just a moment?

Q You, I believe testified, but I am not sure, that all four of the exhibits were prepared by you?

A Yes, sir.

MR. WATSON: The Applicant moves the introduction into the record of exhibits marked one through four.

MR. UTZ: Without objection, Exhibits One through Four will be entered into the record.

MR. WATSON: And that completes the Applicant's case.

CROSS EXAMINATION

BY MR. UTZ:

Q Well, let me be sure I understand this. You say you're going to inject fresh water through the casing tubing annulus?

A Yes, the packer on the tubing will be set between

the Grayburg perforation and the San-Andres perforation and then we will inject fresh water down the casing annulus which will enter the Grayburg formation. And the injection down the tubing will be in to the San-Andres formation.

Q What kind of water will that be?

A Fresh water. Both of them will be fresh water.

Q Now you mentioned that you open the valve between the eighth and five-eighths and five and a half inch casing once a month to check to see if there is any pressure in there, now there will be an open hole from six hundred feet down to thirty-one fifty, will there not?

A Approximately, yes, sir.

Q Well if there was any leak in the five and a half, isn't it likely that a good deal of that pressure could leak out into the formation rather than build up pressure?

A No. I will tell you. Our experience in this area is that that there is no formation exposed that will take fluids readily, so if there was any leakage of fluids into this open hole section, well it will circulate to the surface within a very short time.

Under the previous orders that have been issued on this project, the Commission has granted approval on other injection wells to inject down tubing without any packer in the holes, so that in most, in other injection wells, we do

have this pressure exposed in the casing, although we do have this means by which we can check each month to make sure that there is no failure of the pipe. The strength of fifteen and a half pounds J55 casing, this casing has an internal yield pressure of forty-eight hundred and ten pounds per square inch and, at the present time, the average well-head pressure is oh, approximately seventeen hundred and fifty pounds so -- and the project may go as high as twenty-four hundred pounds injection pressure in the latter part of the life. So, that gives us a safety factor of at least two on the strength of the pipe which we feel is sufficient.

Q Are the other injection wells in here set up to inject into both formations, the Grayburg and the San Andres?

A No, sir. Originally, when we came in with the pilot program for six injection wells, initially we did have the Grayburg open along with the San Andres although we didn't have any packers in those wells. We just injected with all zones open together. In time, we discovered that we were having some water breakthrough problems through the Grayburg and in order to remedy this, later we did pull the tubing and then run packers in the holes which we set down below the Grayburg perforation, and since that time we have been injecting into the San Andres formation only. We consider that on this property, that by far, the San Andres is the most important

oil producing formation. The reason that we are opening up the Grayburg on the line well is this -- that Skelly requested that we inject both into the Grayburg and the San-Andres along the line since they are injecting into the Grayburg on their lease or propose to do so. And, we had no objection to doing this on these line wells.

Q Is it your thought that there will be more of these line wells?

A Yes, sir. The tentative plan is for Skelly Oil Company to drill a line well approximately thirteen hundred and twenty feet south of our Well, No. 30 and of course twenty-five feet inside of their lease line, and then south from that point we get into a tighter, less prolific part of the reservoir and we anticipate that in the southern portion of this that we will probably use the old present producing wells as injection wells and this pattern will be a diagonal eighty acre five spot pattern.

Q You don't propose to drill any line wells north of your proposed Well No. 30?

A Not at the present time, at least. We may possibly convert our No. 14 Well which you will note in the northwest corner of this project and, Skelly may convert either their No. 8 Well directly off-setting or their No. 7 diagonally. We just haven't gotten that far in our agreement yet.

MR. UTZ: Are there other questions of the witness?
You may be excused. Statements?

MR. HATCH: I do have a letter here from the State Engineer's office dated October the 26th, 1966, by S. E. Reynolds, State Engineer and the contents of it have already been discussed. There is also a letter from Skelly Oil Company dated October 31st, 1966, signed by George W. Seelinger in support of the application.

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

MR. WATSON: Thank you.

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

IN WITNESS WHEREOF I have affixed my hand this 15th
day of November, 1966.

Court Reporter

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 3489,
heard by me on Nov. 2, 1966.
Edward J. [Signature], Examiner
New Mexico Oil Conservation Commission

DIAGRAMMATIC SKETCH
WILLIAM A. & EDWARD R. HUDSON
PUCKETT "A"-30
PROPOSED WATER INJECTION WELL

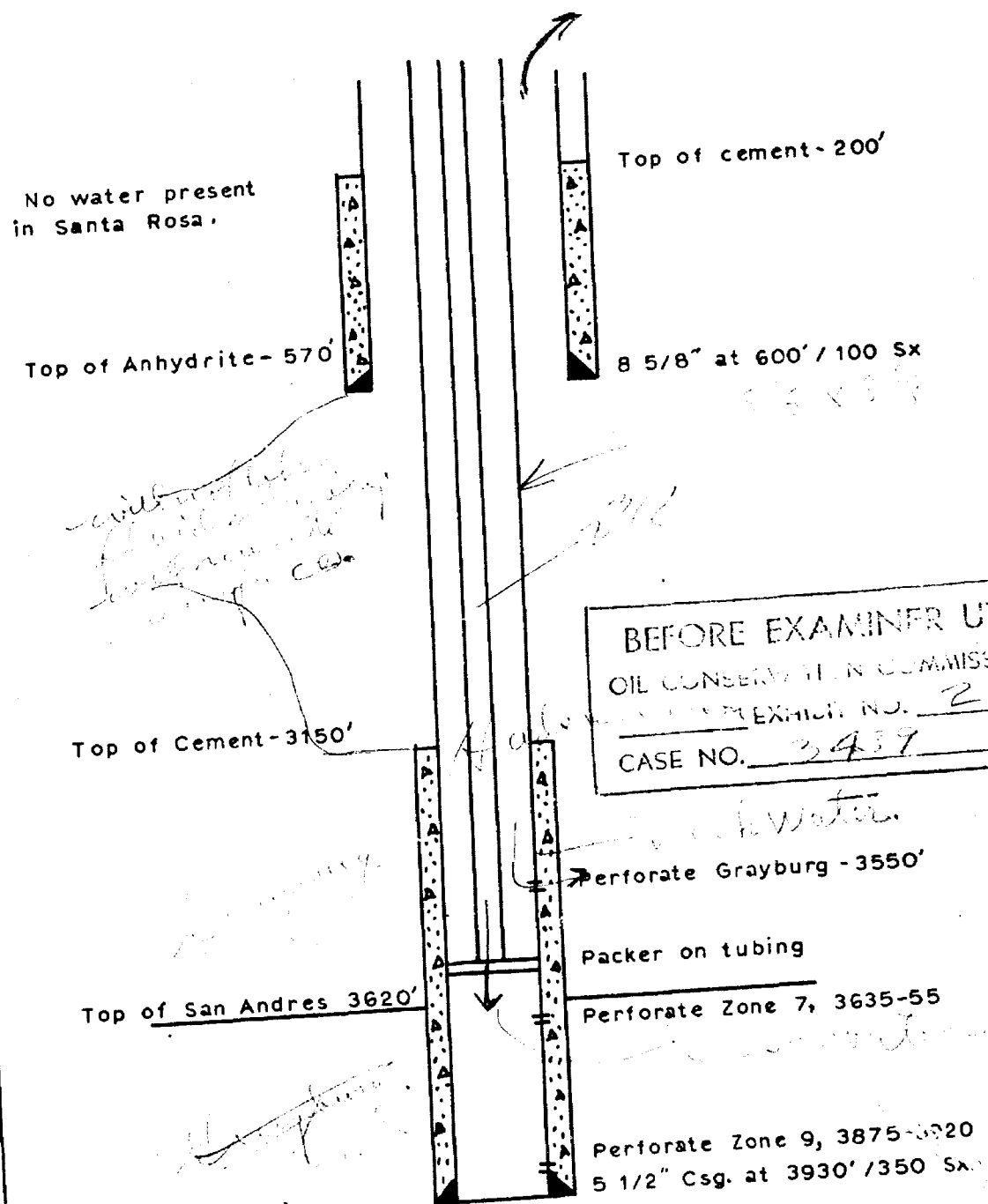


Exhibit #2

RALPH L. GRAY
PETROLEUM ENGINEERING

WELL TESTS
(WELLS OFFSET BY INJECTION WELL)

WELL	BEFORE INJECTION		AUGUST, 1966		SEPTEMBER, 1966	
	OIL	WATER	OIL	WATER	OIL	WATER
Puckett "A" #2*	11	3	25	8	32	7
#3*	7	0	12	3	12	1
#4	7	2	21	7	18	7
#5*	23	2	115	4	114	2
#6	13	1	55	1	61	1
#7*	11	25	35	60	41	60
#8	7	10	19	28	25	33
#9*	6	3	57	3	58	1
#10	7	0	37	11	39	6
#11	5	1	22	1	19	1
#12*	5	2	28	7	26	10
#13	6	0	4	17	7	12
#14	8	0	6	1	7	0
#15	4	0	7	0	8	0
#17	6	0	4	0	4	0
#18	<u>8</u>	<u>0</u>	<u>14</u>	<u>1</u>	<u>15</u>	<u>1</u>
	134	49	461	152	486	142
Puckett "B" #1	6	2	15	10	15	6
#2	6	2	5	3	7	1
#3	6	1	9	15	12	3
#5	<u>5</u>	<u>0</u>	<u>23</u>	<u>0</u>	<u>27</u>	<u>5</u>
	23	5	52	28	57	24

EXAMINER L
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 12
 3089

* Fully enclosed by injection wells.

Exhibit #3