CASE 3395: Application of R.W. Warner for down-hole commingling, San Juan County, New Mexico.

ASE NO.

3395

pplication,
ranscripts,
mall Exhibits
ETC.

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

May 11, 1966

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

Re: Case No. 3395
Order No. R-3066
Applicant:

R. W. Warner

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC x

Other

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. 3395
Order No. R-3066

APPLICATION OF R. W. WARNER
FOR DOWN-HOLE COMMINGLING,
SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 27, 1966, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 11th day of May, 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 applicant, R. W. Warner, is the owner and operator of the Warner-Federal Well No. 1 located in Unit A of Section 10, Township 22 North, Range 8 West, NMPM, San Juan County, New Mexico.

(3) That said well was originally completed as a low-marginal pumping oil well and was subsequently plugged and abandoned.

(4) That the applicant, R. W. Warner, has re-entered said well and has established low-marginal production from an undesignated Gallup oil pool through perforations from 4768 feet to 4830 feet and from an undesignated Dakota oil pool through perforations from 5628 feet to 5635 feet.

(5) That the applicant proposes to produce and to commingle in the well-bore the marginal oil production from the aforesaid pools.

(6) That the production from neither of said zones, in itself, is sufficient to cover the operating costs of producing the well as a single completion. Further, that the production from both zones, combined, is insufficient to cover the cost of installing conventional dual completion equipment and the operating cost of the well.

(7) That the reservoir characteristics of each of the two zones are such that underground waste would not be caused by the proposed commingling in the well-bore.

(8) That approval of the proposal will prevent waste in permitting the production of otherwise unrecoverable oil and will not violate correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, R. W. Warner, is hereby authorized to complete his Warner-Federal Well No. 1 located in Unit A of Section 10, Township 22 North, Range 8 West, NMPM, San Juan County, New Mexico, in such a manner as to produce oil from an undesignated Gallup oil pool through perforations from 4768 feet to 4830 feet and from an undesignated Dakota oil pool through perforations from 5628 feet to 5635 feet, commingling the production from each of said zones in the well-bore.

(2) That the operator shall notify the Santa Fe Office of the Commission in the event that either or both of the perforated intervals in the subject well becomes capable, for any reason, of producing in excess of 10 barrels per day.

(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

esr/

P. O. Drawer 1857
Roswell, New Mexico 88201

'66 MAY 4 PM 1 27

May 2, 1966

Mr. R. W. Warner
906 N. Watson
Farmington, New Mexico

Attention: Mr. E. A. Clemont

Dear Sir:

Your letter of April 22 requests approval to commingle production from the Gallup and Dakota zones in your No. 1 Warner Federal located in the NENE section 10, T. 22 N., R. 8 W., San Juan County, New Mexico on Federal lease NM 948989.

The method you propose for the commingling of oil production is hereby approved. Form 9-361, Lessee's Monthly Report of Sales and Royalty, must show for each formation all computations used for allocating production to each zone.

You are requested to notify our Farmington office when the installation is completed so that a field inspection can be made.

Sincerely yours,

(ORIG. SGD.) BILLY J. SHOGER

BILLY J. SHOGER
Acting Oil and Gas Supervisor

cc:
Farmington
Roswell
Accounts
NMOCC

JLWard:nt

Docket No. 11-66

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 27, 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 3394: Application of Shell Oil Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the N/2 SW/4, SE/4 SW/4, and NW/4 SE/4 of Section 22, Township 21 South, Range 37 East, Blinebry Gas Pool, Lea County, New Mexico, said unit to be dedicated to applicant's Turner Well No. 13 located in Unit N of said Section 22.

CASE 3395: Application of R. W. Warner for down-hole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle in the well-bore marginal oil production from undesignated Gallup and Dakota Pools in his Warner-Federal Well No. 1 located in Unit A of Section 10, Township 22 North, Range 8 West, San Juan County, New Mexico.

CASE 3396: Application of Texaco Inc. for a non-standard oil proration unit and a non-standard location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of a 40-acre non-standard oil proration unit comprising the NE/4 SW/4 of Section 14, Township 12 South, Range 34 East, Ranger Lake-Pennsylvanian Pool, Lea County, New Mexico, said unit to be dedicated to its State of New Mexico "DA" Well No. 2 to be located 1980 feet from the South and West lines of said Section 14.

CASE 3397: Application of Texaco Inc. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Skaggs-Grayburg Unit Area comprising 880 acres, more or less, of Fee land in Sections 12 and 13, Township 20 South, Range 37 East, and Sections 7 and 18, Township 20 South, Range 38 East, Lea County, New Mexico.

CASE 3398: Application of Texaco Inc. 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 formation, Skaggs-Grayburg Pool, through eleven wells in its Skaggs-Grayburg Unit, Lea County, New Mexico.

CASE 3399: Application of Tenneco Oil Company for two non-standard gas proration units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of two non-standard gas proration units which would comprise all lands in the W/2 of Section 30, Township 30 North, Range 9 West, adjacent to a Blanco-Pictured Cliffs Pool, San Juan County, New Mexico.

CASE 3400: Application of Pan American Petroleum Corporation for creation of a new pool and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for its Big Eddy Unit Well No. 7 located in Unit O of Section 19, Township 20 South, Range 31 East, Eddy County, New Mexico, and for the promulgation of special rules therefor, including a provision for 160-acre oil proration units.

CASE 3002 (Reopened):

In the matter of Case No. 3002 being reopened pursuant to the provisions of Order No. R-2684-A, which order continued the original order for an additional year, establishing 320-acre spacing for the Fowler-Lower Paddock Gas Pool, Lea County, New Mexico. All interested parties may appear and show cause why said pool should not be developed on 160-acre spacing units.

POST OFFICE BOX 834
Zip Code 87401

THOMAS A. DUGAN

Registered Petroleum Engineer

709 BLOOMFIELD RD.
FARMINGTON, NEW MEXICO

TELEPHONE: 325-9184 *Office*
325-5694 *Home*
Area Code 505

April 22, 1966 APR 27 PM 3

File

Mr. A. L. Porter
Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Re: Case 3395

Dear Mr. Porter:

The application of R. W. Warner in case 3395 for down-hole commingling of a Gallup and Dakota oil well in the San Juan Basin is well-founded and I am very much in favor of having this application approved by the Commission.

As an independent producer in the San Juan Basin, I feel that the down-hole commingling of marginal oil zones, or marginal gas zones, could result in a great number of wells being commercial that would otherwise be abandoned and result in recovery of hydrocarbons that would otherwise remain unproduced.

The Oil and Gas Conservation Commission of the State of Colorado has approved the down-hole commingling of all gas zones above the base of the Dakota. This order has resulted in additional drilling and workovers in areas that were previously uncommercial.

Progressive action such as this is good for the economy of the state and good for the oil and gas business.

Sincerely,

Thomas A. Dugan

dw

cc: Emery Arnold

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

Case 3395

April 7, 1966

Mr. E. A. Clement
906 North Watson
Farmington, New Mexico

DOCKET MAILED
Date

Dear Mr. Clement:

Your application for hearing of R. W. Warner's proposal to commingle Gallup and Dakota production in the well-bore of his Warner-Federal Well No. 1 located in Unit A of Section 10, Township 22 South, Range 8 West, San Juan County, New Mexico, has been docketed for 9 a.m. on April 27, 1966, at the Oil Conservation Commission Conference Room, State Land Office Building, Santa Fe, New Mexico.

In order to obtain approval of an application of this nature, it will be necessary for you to establish that the economics of the subject well are such as to preclude a normal dual completion. It would also be necessary for you to prove that no reservoir loss will result, i.e., that no oil from either zone will be lost to the other zone and that the proposed completion can be made and operated efficiently.

It will be necessary to be represented by an attorney.

Very truly yours,

DANIEL S. NUTTER
Chief Engineer

DSN/ir

APR 4 AM 7 58

906 North Watson
Farmington, New Mexico
April 1, 1966

Case 3395

Mr. Daniel S. Nutter, Chief Engineer
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Dear Mr. Nutter:

Thank you for your letter dated March 31, 1966, in reply to our application to commingle Gallup and Dakota production in the R. W. Warner, No. 1 Warner Federal well, located in Unit A, Section 10, T22N, R8W, San Juan County, New Mexico.

We do desire a hearing on this request and will appreciate your scheduling it at your earliest convenience. We would also appreciate information concerning the procedure of this hearing, information and data which we should have available, and if it is necessary that we be represented by an attorney.

Sincerely,

E. A. Clement

E. A. Clement
Agent for R. W. Warner

cc: R. W. Warner
414 Brady Street
Davenport, Iowa

DOCKET MAILED
Date 4-15-66

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

March 31, 1966

COPY

Mr. E. A. Clement
906 North Watson
Farmington, New Mexico

Dear Mr. Clement:

Reference is made to your application dated March 24, 1966, for authority to commingle Gallup and Dakota production in the well-bore of the R. W. Warner, et al., Warner Federal Well No. 1, located in Unit A of Section 10, Township 22 North, Range 8 West, San Juan County, New Mexico.

The rules of the New Mexico Oil Conservation Commission do not provide administrative procedures for approving down-hole commingling. Such commingling could be approved only after notice and hearing.

Please advise if you do desire a hearing on this matter and we shall be happy to set it for hearing on the first docket available.

Very truly yours,

DANIEL S. NUTTER
Chief Engineer

DSN/esr

cc: Mr. R. W. Warner
414 Brady Street
Davenport, Iowa

[illegible]

Subject: [illegible]

[illegible]:

Originally completed [illegible] Chaco. [illegible] with 650 sacks [illegible]. A drill stem test [illegible] run from 5637' to 5644' in the Dakota formation with the following pressures: [illegible] Flow Pressure [illegible] p.s.i.; Final Flow Pressure [illegible] p.s.i.; Shut In Pressure 240 p.s.i. Another drill stem test from 4707' to [illegible] the Gallup formation had the following pressures: Initial Flow Pressure 50 p.s.i.; Final Flow Pressure [illegible] p.s.i.; Shut In Pressure 50 p.s.i. The well was completed in the [illegible] Dakota from perforations at 5637' to 5644' on September [illegible], 1957, as a pumping oil well. Initial Potential 10 BOPD with 4 BWPD. Production was [illegible] barrels in September, 1957, and 101 barrels in October, 1957. The well was then plugged and abandoned.

Well was re-entered by [illegible] Warren, [illegible], on April [illegible], [illegible], and the Dakota sandstone was [illegible] 1056 barrels of oil. [illegible] June 9, 1958, [illegible] well was completed as a [illegible] oil well from perforations at 5629' to 56[illegible]'. Initial Potential 17 [illegible]. Production was as follows: July, [illegible] barrels; August, [illegible] barrels; September, 101 barrels.

After this [illegible] a cast iron [illegible] was set at [illegible] between the Gallup and Dakota [illegible] perforated and sand oil fractured [illegible] barrels of oil. [illegible] pumped back by January [illegible], the well was completed as a Gallup pumping oil well from perforations at 4702' to [illegible]. Initial Potential [illegible] BOPD with [illegible] BWPD. The well produced 100 barrels in January and [illegible] barrels in February, 1959.

After this test of both the Gallup and Dakota formations, it is not considered to be economically feasible to dual complete this well and produce the zones separately. The investment in equipment, cost of installation and operating the well after installation would not be profitable on the expected 200 to 250 barrels per month of production.

It is also not considered to be feasible to produce either of the formations alone on the expected 100 to 125 barrels per month of production. In either event, dual completing or producing one formation, the operator could not realize a profit and would necessarily have to plug and abandon the well.

We are therefore making this application for authorization to drill the plug now separating the Gallup and Dakota formations, set a pump at the Dakota level, and produce the oil from both formations together.

With the low pressures in the Gallup and Dakota formations, as shown on the drill stem tests by Humble Oil & Refining Co., it is not believed either will be over-come, and oil forced from one formation into the other. There are no other producing wells in the area to be affected by this type of completion. A dry hole was recently drilled 1975 feet southwest of this well, which somewhat limits the lateral extent of the oil bearing formations. Should this application be approved, oil will be produced and marketed, which otherwise would most probably be left in the ground.

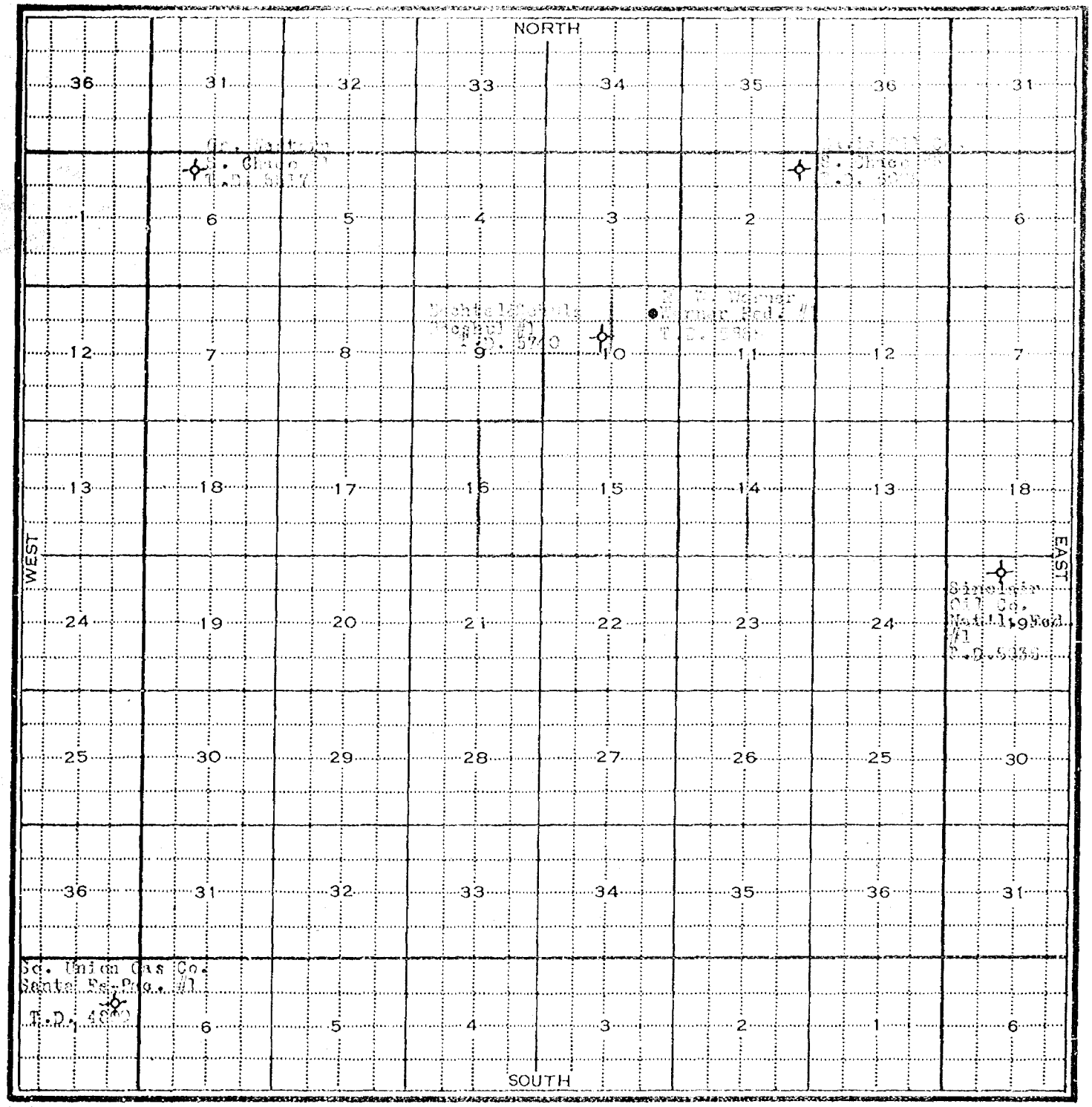
E. A. Clement,
Agent for R. W. Warner

906 North Watson
Farmington, New Mexico

1 Encl.
CC; R. W. Warner
414 Brady Street
Davenport, Iowa

NO. 720 SURVEYORS TOWNSHIP PLAT

TOWNSHIP NO. [illegible] RANGE NO. [illegible] COUNTY [illegible] STATE [illegible]



LEDGEND

R. W. Warner acreage

SCALE, ONE INCH = ONE MILE

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. 3112
Order No. R-2824-A

APPLICATION OF CONTINENTAL OIL
COMPANY FOR DOWNHOLE COMMINGLING,
RIO ARRIBA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on July 28, 1965, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 16th day of August, 1965, 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 this case has been reopened pursuant to the provisions of Order No. R-2824 to permit the applicant to show cause why the authority granted under Order No. R-2824 should not be terminated.

(3) That the applicant has established that the Gallup and Dakota zones in the subject well are marginal and that it is not economically feasible to equip these zones for conventional operation.

(4) That the applicant has established that continued use of the dual-flow downhole choke assembly in the subject well will permit the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the applicant has established that correlative rights will be protected by allocating production from the subject well to each zone by periodic production tests utilizing the subtraction method.

IT IS THEREFORE ORDERED:

(1) That the authority granted under Order No. R-2824 is hereby continued in full force and effect;

PROVIDED HOWEVER, that a production test shall be conducted annually and production allocated to the Gallup and Dakota zones of the subject well by the subtraction method until further order of the Commission.

(2) 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

S E A L

esr/

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. 3112
Order No. R-2824

APPLICATION OF CONTINENTAL OIL
COMPANY FOR DOWNHOLE COMMINGLING,
RIO ARRIBA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 30, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 7th day of December, 1964, 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, Continental Oil Company, seeks authority to install a dual-flow downhole choke assembly in its Jicarilla 28 Well No. 1, located in Unit J of Section 28, Township 25 North, Range 4 West, NMPM, Rio Arriba County, New Mexico, to produce oil from the Gallup formation and to produce oil from the Dakota formation through one string of 2 3/8-inch tubing, with separation of zones by said choke assembly set at approximately 6500 feet and a packer set at approximately 7317 feet.

(3) That the applicant proposes to commingle the Gallup and Dakota production in the 2 3/8-inch tubing above the dual-flow downhole choke assembly and to determine production from each zone by periodic production tests.

(4) That the proposed dual completion should be approved for a six-month period in order to determine the feasibility of authorizing such completions in this area.

(5) That since the Gallup and Dakota formations in the subject well are marginal, the applicant should be authorized to determine production from each zone by periodic production tests witnessed by the Commission.

IT IS THEREFORE ORDERED:

(1) That the applicant, Continental Oil Company, is hereby authorized to install a dual-flow downhole choke assembly in its Jicarilla 28 Well No. 1, located in Unit J of Section 28, Township 25 North, Range 4 West, NMPM, Rio Arriba County, New Mexico, to produce oil from the Gallup formation and to produce oil from the Dakota formation through one string of 2 3/8-inch tubing, with separation of zones by said choke assembly set at approximately 6500 feet and a packer set at approximately 7317 feet;

PROVIDED HOWEVER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order.

(2) That the applicant shall take a packer-leakage test prior to installation of the downhole choke assembly and upon termination of the six-month test period authorized by this order.

(3) That upon installation of the dual-flow downhole choke assembly and upon termination of the six-month test period authorized by this order, the applicant shall conduct tests to determine packer leakage or seal leakage in the dual-flow downhole choke assembly in either direction, and shall notify the Supervisor, District 3, Oil Conservation Commission, Aztec, New Mexico, of the exact date and time said tests are to commence in order that the Commission may witness the same.

(4) That the applicant is hereby authorized to determine production from each zone of the subject well by periodic production tests and shall notify the Supervisor, District 3, Oil Conservation Commission, Aztec, New Mexico, of the date and time said tests are to commence in order that the Commission may witness the same.

(5) That this case shall be reopened at an examiner hearing in June, 1965, at which time the applicant may appear and show cause why the authority granted under this order should not be terminated.

(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, Chairman

E. S. WALKER, Member

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

S E A L

esr/

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 27, 1966

EXAMINER HEARING

IN THE MATTER OF:

Application of R. W. Warner for down-hole commingling, San Jaun County, New Mexico.

Case No. 3395

BEFORE:

Elvis A. Utz, Gas Engineer

TRANSCRIPT OF HEARING

MR. UTZ: Call Case 3395. Application of R. W. Warner for down-hole commingling, San Juan County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, we have one witness I would like to have sworn, please.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 10 marked for identification.)

* * *

E. A. C L E M E N T, a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A E. A. Clement.

Q What business are you engaged in?

A Consulting geologist.

Q C-l-e-m-e-n-t?

A Yes, sir.

Q Where are you located?

A Farmington.

Q How long have you worked as a consulting geologist?

A Seven and a half years.

Q In connection with your work as a consulting geologist have you had anything to do with the R. W. Warner Federal Number 1 Well?

A Yes, since he first started working on it.

Q Have you ever testified before the Oil Conservation Commission of New Mexico?

A No, sir.

Q For the benefit of the Examiner, would you outline your education and experience as a geologist?

A Received a D.S. in Geology from the University of Oklahoma in 1949 and I have been in Farmington since that time. To add to that, I had a year of graduate work and then moved to Farmington in 1950; worked a year for Southern Union; four years for El Paso; three years Delhi Taylor; and the last seven and a half years as a consultant.

Q In these positions with Delhi Taylor in El Paso were you a geologist?

A Yes, sir.

MR. KELLAHIN: Are the witnesses qualifications acceptable?

MR. UTZ: They are acceptable.

Q (By Mr. Kellahin) You said you sat on the well for R. W. Warner, the well which is the subject of the present application, is that correct?

A Yes, sir.

Q Referring to Exhibit Number 1, would you outline briefly the history of this well?

A The well was first drilled by Humble Oil and Refining Company as their Number 4 South Chaco Unit, and they drilled the well down and ran several drill stem tests, two of them which overlaped the areas of the zones that we're going to talk about here this morning; and did an expensive coring on the well. And they went on and completed the well on September 16, 1957 as a pumping oil well. The well had an initial potential of 10 barrels of oil and 4 barrels of water a day, and as I say, that was on September 16th, and during the remainder of September they produced 13 barrels of oil; during the next month of October, 164 barrels of oil, and then they considered the well not to be a commercial well, plugged and abandoned it, and dropped the acreage.

The present operator, Mr. Warner, picked up the acreage, acquired the lease, and he held it for several years. And on April 17, 1965 he re-entered the well and perforated, logged the well and perforated and sand oil fractured the Dakota Formation. The zone that was perforated and fractured was the same zone that Humble had produced out of prior to this completion. After the fracture treatment the load oil

was pumped back, and then by June 9th, 1965 the well was tested for an initial potential of 17 barrels of oil and 3 barrels of water per day, and the gas was too small to measure.

The production on the well for the next three months was 220 barrels for July; 108 for August; 101 for September; and the average gravity of the oil was 37.5 degrees.

Now, at this point he decided to go up the hole and try a Gallup completion. So a plug was set in the well at 4871 between the Gallup and Dakota Formations, and the Gallup was perforated and sand oil fractured.

After the draining oil was pumped back from this job the well was tested, gas-oil ratio tested with an initial potential of 9 barrels of oil per day and 2 barrels of water per day, and the gas was too small to measure. The well production for three months was; January, 100 barrels; February, 129 barrels; March, 107 barrels; and the average gravity of the oil was 38.9 degrees.

We feel that we had a fair test of the Gallup and Dakota Formations and each one of them, the last month of production, have made a little more than a hundred barrels a month. And Mr. Warner doesn't consider this to be an economically feasible venture to dual complete the well. With this small amount of production he could expect a little over two hundred barrels a month, and neither does he

consider it profitable to produce one formation by itself alone.

Q What is the present state of the well?

A Producing from the Gallup Formation.

Q And the plug?

A Between the Gallup and Dakota.

Q What do you propose to do?

A We would like to drill the plug between the two formations and set our pump in the bottom of the well and produce the two formations together by gravity drainage.

Q And the manner of production will be shown by the later exhibits, is that correct?

A Yes, sir.

Q Do you have the logs on the well, Mr. Clement?

A Yes, sir, I have the original Humble log here, marked Exhibit 2, and on it I have marked the zones that have been perforated and sand oil fractured by Mr. Warner. And I might point out at this time, that our correlation log, which we ran prior to our perforating, is marked Exhibit 3, "Jet Tech Services". It shows it to be 9 feet higher in the Jet Tech Log than this log. I have referred to the zones from the original well and forgot about the depths on the Jet Tech Log. It's simply a matter of two logging companies making two different measurements.

Q Your testimony is that the application is based on the depths shown on the Schlumberger Log?

A Yes, sir. The depth I talk about will be based on this log.

Q Referring to Exhibit 4, would you describe that exhibit, please?

A That is a Gallup drill stem test which was run by Humble on the original completion, and it was run on June 16, '57. It's the middle test there on Exhibit Number 4; DST #6, and these are copies of this drill stem test record as they filed them with the U.S.G.S.

Q What does that show as pressure in the Gallup Zone?

A Shut in build up pressure after 30 minutes, of 50 pounds on this zone testing.

Q Referring to Exhibit Number 5, would you identify that exhibit?

A That's the drill stem test record, again, that Humble ran on the Dakota Section, which we perforated and fractured.

Q What is that pressure?

A 240 pounds of pressure.

Q Is that after 30 minutes?

A That is after 30 minutes.

Q On the basis of your experience with the well,

would you say that the pressures shown on the drill stem tests reflect the condition of the well today?

A That's on the basis of my -- of what I figured on. However, I would believe the pressures were much lower. From our experience, after three months of producing, we haven't found any pressures at all, but we will base our testimony on these figures here.

Q Although actually, in your opinion, is the pressure of 240 pounds per square inch high for the Dakota, as of today?

A I feel sure that is much more pressure than we have as of today.

Q Would you refer to Exhibit Number 6 and identify that, please?

A That's our gas-oil ratio test on the Gallup Formation.

Q And what does it reflect?

A We show 9 barrels of oil; 2 barrels of water; gas, TSTM; so there would be no gas-oil ratio.

Q Refer to Exhibit 7 and explain what it reflects as a gas-oil ratio for the Dakota?

A That's the same gas-oil ratio test on the Dakota, same thing; 17 barrels of oil; 3 barrels of water; gas, TSTM.

Q Have you prepared a schematic diagram?

A Yes, sir.

Q Is that Exhibit Number 8?

A That is Exhibit Number 8.

Q Would you discuss that exhibit?

A In this diagram this is our proposed completion. We have planned to set the top of our pump 6 feet below the bottom perforation and that way the oil can drain down the pipe of the Gallup and the Dakota and we can keep it pumped out.

Q What is to prevent the Dakota oil from entering the Gallup Formation?

A The Dakota oil, it would be the oil, Gallup and Dakota mixed if it goes up in the hole, and we have come up with a figure of .361 pounds per square inch of pressure for each foot of oil by using an average oil gravity of the mixed oil of 388.2. This can further be calculated from using 240 pounds of bottom hole pressure, that if left alone a colume of oil would raise 665 feet from the bottom of the well, from the top perforations in the Dakota to the top -- to the bottom of the Gallup is 798 feet, therefore we don't expect any difficulty in the Dakota oil entering the Gallup Formation by rising up and gravity-flowing into it.

MR. PORTER: In other words, under the pressure,

existing pressure it wouldn't raise the oil that high?

THE WITNESS: No, sir, it would like some hundred feet getting it high enough to reach the Gallup perforations.

Q (By Mr. Kellahin) This would be under shut in conditions?

A This would be under shut in conditions.

Q As a matter of fact, the well being produced, the column of oil would be considerably lower?

A Yes. In addition, I might add, we have planned to set a regulator at the surface for 15 pounds of pressure which will be on the gas between the tubing and annulus, and that way there would never be enough gas pressure to go into the Gallup perforations either.

Q You say there would be not enough pressure to enter the gas either?

A That is correct.

Q To summarize your testimony on Exhibit 8, would the gas from either zone enter the other if this well was completed and produced as you propose?

A No, sir, I don't see any possibility.

Q Have you taken into consideration the effect of this type of completion on offset operators?

A Yes, sir. The nearest producing well is 7 1/2 miles away.

Q Would you refer to Exhibit 9 and identify that, please?

A Exhibit 9 is a well map which I have drawn out to the nearest producing wells and into the Northeast it's 7 1/2 miles and to the Southeast it's 7 1/2 miles to the nearest producing wells. All of these wells are Gallup producers. We have dry holes between our well and the producing wells. Therefore, I don't see that there could be any effect on their wells in any way from what we want to do here.

Q Would you anticipate there will be any further development in the area of your well?

A I wouldn't think so with the amount of dry holes in the area. It would be my opinion that no one --

MR. PORTER: You wouldn't recommend an offset?

THE WITNESS: I certainly wouldn't.

Q (By Mr. Kellahin) Where is the nearest Dakota production?

A Ten miles away, and 24 North, 7 West, Section 25.

Q Is that Dakota oil or gas?

A Dakota gas.

Q Have you made a study of the economics of producing this well under various conditions?

A Yes, sir.

Q Referring to what has been marked as Exhibit Number

10, would you discuss that exhibit?

A I based my pay-out period on what I believe to be a fair judgment of what the well will produce. I took the last two months, the last month on each zone and in the Dakota there was 101 barrels and 107 barrels from the Gallup. I don't believe the well would get any bigger but I based it on that, which would be 208 barrels per month.

Each zone was produced three months and I feel that they were stabilized and show that would be a fair figure on what the production would be.

The average gravity of the oil has been; Dakota, 37.5 degrees; Gallup, 38.9 degrees, and this mixed oil being about the same amount of oil in each case would have an average gravity of 38.2 degrees.

The price of the oil itself, and Inland Crude, Inc. has made a contract with Mr. Warner to take his oil for $2.40 a barrel. Therefore, we're not going to get any change in price by this little change in gravity.

Back to the 208 barrels a month, expected production at $2.40 a barrel would give us an aniticpated gross monthly income of $499.20. We have an aniticpated monthly operating expense of $175.00 which is based on our actual expense of operating the well.

With these figures we have an anticipated monthly

net profit of $324.20. If we should have to dual complete the well I have calculated an expected total completion cost of $16,215.00. And with these figures that would give us a 50 month pay-out should the well maintain its present level of production. And my experience with marginal wells, small wells, indicates that this well will gradually decline and the pay-out period will be actually longer than that.

Mr. Warner has in excess of $35,000.00 invested in the well at the present time and his reluctance to invest further can be understood.

Q Is this well in a designated oil pool for the Dakota and Gallup formations?

A No, sir, undesignated.

Q Are you familiar with the allowable assigned to the well?

A Base of 70 barrels.

Q Would this well be able to make the allowable for a single completion?

A No, sir, it would never make an allowable of 70 barrels a day.

Q You're not asking for an assignment of the allowable from the Dakota and Gallup?

A No, sir.

Q Will the completion of the well as proposed by Mr.

Warner, in your opinion, result in the production of oil that would not otherwise be recovered?

A I believe it will. Mr. Warner will operate the well, I'm sure, a while longer, but in the Gallup Formation it's been a losing proposition. He's had to buy butane to run his engine, and so on, and it will just be a matter of a few months until he plugs the well. I don't know that it would be a larger amount but it would be oil produced. But I don't believe anyone else will build a well in that area.

Q Would leaving that oil in the ground constitute waste?

A Yes, sir.

Q Would the Correlative Rights of the other operators in the area be effected by this case?

A No, sir.

Q Were Exhibits 1 through 10 prepared by you or under your supervision?

A Prepared by me.

MR. KELLAHIN: We offer Exhibits 1 through 10, inclusive.

(Whereupon, Applicant's Exhibits 1 through 10 offered into evidence.)

MR. UTZ: If there are no objections the exhibits will be admitted.

(Whereupon, Applicant's Exhibits 1 through 10 admitted into evidence.)

MR. KELLAHIN: That's all I have on direct examination.

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Clement, in referring to your Exhibit 5, which is Humble's 9-331a Report, I notice at the end of the first paragraph they say that build up after 30 minutes is 1260 pounds. Is that part of the Dakota Zone?

A That zone included a zone which we perforated, plus quite a bit more lower than that. In other words, that was the water. You notice the test there, they recovered quite a bit of water, then the next test they ran they isolated this zone and shut off the water and had a 240 build up on the oil zone.

Q Is it your opinion that the 1260 is the bottom hole pressure of the water pool?

A Yes, sir, the two zones together.

Q Then it's your opinion that the bottom hole pressure of the Dakota Zone is approximately 240 pounds?

A Yes, sir, I would base it on that.

Q Do you have any opinion as to what the bottom hole pressure of the Gallup Zone is?

A 50 pounds, as shown on this test. However, if you would go back to Exhibit 2, you will notice the test didn't cover all of our perforated zone. It liked 14 feet covering the bottom of the zone; 31 feet. Through the Gallup on most all the tests, the pressures vary very little, so just by the fact that we didn't, the bottom of our perforated zone was not included in the tests, I don't believe -- I feel quite sure there would be no higher pressures because of our experience in producing the well.

Q But you're producing capacity of the Gallup Zone is about 107 barrels a month, and 101 on the Dakota?

A Yes, sir, that was based on the last two months of the production.

Q Somewhere between 3 and 4 barrels a day as compared with the normal allowable of 70 barrels?

A Yes, sir.

Q I think on your addage, probably, in your opinion, you're calling the base on the Dakota Zone a wildcat well, and actually it may be, but it's still within the horizontal limits of the base of the Dakota Well, so we're going to have to call it the basic Dakota Well. On that basis, I presume that we will have to have production reports for each zone. Now, how do you propose to determine how much oil comes from each zone?

A There wouldn't be any way of determining it with

this type of production, the amount of oil from each zone.

Q Right now you're producing from the Gallup Zone, are you not?

A Yes, sir.

Q Do you know how much oil you're producing with the Gallup Zone at the present time?

A Last month it was 117 barrels.

Q When you open this well up to both zones, then the total present production would give a good indication of what the Dakota Zone is?

A Yes, sir. Last month it was 101. I don't think it's going to vary too much from that.

Q After you have filled out your cast iron plug at 4871' it's going to be rather difficult to make any segregated zone tests, isn't it?

A Yes, sir, it would be.

Q If the Commission can devise a sort of a ratio to report on you would be willing to make these reports each month, would you not, for each zone?

A Yes, sir. I do all the reporting on the well at the time. I have since it was drilled, the Gallup oil is, what, 38.9, the average has been 38.9.

Q And the Dakota is 37.5?

A The Dakota is 37.5, yes, sir.

Q You would no each month which batch of oil you sold, what the actual gravity would be on that batch of oil?

A Yes, sir, the crew could run gravity tests on it when they picked the gravity up.

MR. UTZ: Any other questions of the witness?

CROSS-EXAMINATION

BY MR. PORTER:

Q I notice, Mr. Clement, that you had produced two barrels of water on this gas-oil ratio test in the Gallup Zone?

A Yes, sir.

Q Do you anticipate that the water production would substantially increase in this zone?

A No, sir, in the Gallup Zone it's decreased. We turned this in as it was produced but the fellow who pumps the well thought it was acid water which we had put it in ahead of our perforation.

Q It wasn't formation water?

A We had no way to compare it, it did have an acid smell.

Q You wouldn't anticipate any danger of the water from the Gallup Zone ever flooding out the Dakota?

A No, sir, I don't believe we'll ever have any

water problem at all from the Gallup.

MR. UTZ: Any other questions of the witness. The witness may be excused. Are there any further statements in this case? The case will be taken under advisement. The hearing will be adjourned for lunch until 1:30 P.M.

(Whereupon, the hearing was recessed until 1:30 P.M.)

I N D E X

E X H I B I T S

NUMBER	MARKED FOR IDENTIFICATION	OFFERED	ADMITTED
Applt's. 1	2	14	15
Applt's. 2	2	14	15
Applt's. 3	2	14	15
Applt's. 4	2	14	15
Applt's. 5	2	14	15
Applt's. 6	2	14	15
Applt's. 7	2	14	15
Applt's. 8	2	14	15
Applt's. 9	2	14	15
Applt's. 10	2	14	15

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, BOBBY J. DAVIS, 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 13th day of May, 1966.

Bobby J. Davis
NOTARY PUBLIC

My Commission Expires:

March 13, 1969.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3795, heard by me on Apr. 27, 1966.

Examiner
New Mexico Oil Conservation Commission

March 24, 1966

Mr. A. L. Porter, Jr.
Box 2088
Santa Fe, New Mexico

Subject: Application for authorization to produce oil from the Gallup and Dakota formations without segregation, in the R. W. Warner, Warner Federal No. 1, located in the NE¼ of NE¼ of Section 10, T22N, R8W, San Juan County, New Mexico.

WELL HISTORY:

Originally completed as Humble Oil & Refining Co., No. 4 South Chaco. T.D. 5855'; P.B.T.D. 5668; 5½" casing at 5854', cemented with 650 sacks cement. A drill stem test was run from 5637' to 5644' in the Dakota formation with the following pressures; Initial Flow Pressure 00 p.s.i.; Final Flow Pressure 100 p.s.i.; Shut in Pressure 240 p.s.i. Another drill stem test from 4707' to 4808' in the Gallup formation had the following pressures; Initial Flow Pressure 50 p.s.i.; Final Flow Pressure 50 p.s.i.; Shut in Pressure 50 p.s.i. The well was completed in the middle Dakota from perforations at 5637' to 5644' on September 16, 1957, as a pumping oil well. Initial Potential 10 BOPD with 4 BWPD. Production was 13 barrels in September, 1957, and 164 barrels in October, 1957. The well was then plugged and abandoned.

Well was re-entered by R. W. Warner, etal, on April 17, 1965, and the Dakota sandstone was re-perforated and sand oil fractured with 1556 barrels of oil. Load oil was recovered by June 9, 1965, and the

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 1
CASE NO. 3391

well was completed as a pumping Dakota oil well from perforations at 5628' to 5635'. Initial Potential 17 BOPD with 3 BWPD. Production was as follows; July, 220 barrels; August, 108 barrels; September, 101 barrels. Average gravity of oil 37.5 degrees.

After this completion and test of the Dakota sandstone, a cast iron plug was set at 4871' between the Gallup and Dakota formations and the Gallup formation was perforated and sand oil fractured with 1335 barrels of oil. All load oil was pumped back by January 3, 1966, and the well was completed as a Gallup pumping oil well from perforations at 4768' to 4830'. Initial Potential 9 BOPD with 2 BWPD. Production was as follows: January, 100 barrels; February, 129 barrels; March, 107 barrels. Average gravity of oil 38.9 degrees.

After this test of both the Gallup and Dakota formations, it is not considered to be economically feasible to dual complete this well and produce the zones separately. The investment in equipment, cost of installation and operating the well after installation would not be profitable on the expected 208 barrels per month of production.

It is also not considered to be feasible to produce either of the formations alone on the expected 101 to 107 barrels per month of production. In either event, dual completing or producing one formation, the operator could not realize a profit and would necessarily have to plug and abandon the well.

We are therefore making this application for authorization to drill the plug now separating the Gallup and Dakota formations, set a pump at the Dakota level, and produce the oil from both formations

together.

With the low pressures in the Gallup and Dakota formations, as whown on the drill stem tests by Humble Oil & Refining Co., it is not believed either will be over-come, and oil forced from one formation into the other. There are no other producing wells in the area to be affected by this type of completion. A dry hole was recently drilled 1975' southwest of this well, which somewhat limits the lateral extent of the oil bearing formations. Should this application be approved, oil will be produced and marketed, which otherwise would most probably be left in the ground.

E. A. Clement
Agent for R. W. Warner

906 North Watson
Farmington, New Mexico

Additional Information:

After this request was written, it was realized and should be pointed out that the zone re-perforated in the Dakota, (5628'to 5635'), as shown on the enclosed Jet Tech Services correlation log which was run before re-perforating, correlates with, and is the same zone shown on the original Schlumberger log as 5637' to 5644'. In addition, the Gallup zone perforated by the Jet Tech log as 4768' to 4830' correlates with and is the same zone as shown on the Schlumberger log as 4777' to 4839'. This is due to a difference in measurements from the surface to the subject zones by the two different logging companies.

Form 9-331a
(Feb. 1951)

APPROVED
JUN 24 1957
SAMUEL G. SUMNER
ACTING DISTRICT ENGINEER

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

Land Office SF 077853 077755

Lease No. .....

Unit .....

RECEIVED
JUN 21 1957
U. S. GEOLOGICAL SURVEY
FARMINGTON, NEW MEXICO

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY DST	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

SOUTH CHACO UNIT Farmington, New Mexico June 20, 19 57

Well No. 4 is located 1130 ft. from {N/S} line and 1130 ft. from {E/W} line of sec. 10

NE/4 of NE/4 (¼ Sec. and Sec. No.) T-22-N (Twp.) R-8-W (Range) (Meridian)

Morrison W/C (Field) San Juan (County or Subdivision) New Mexico (State or Territory)

The elevation of the derrick floor above sea level is 6858 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

15

6-12-57: DST #5 from 4644 to 4706 w/1" TC & 3/4" BC. TO 30 min. Very weak blow & died in 2 min. Rec. 10' slightly oil & gas cut mud. In. mud 2540#, min. & max. fl. 35#, Final 2540#, BU after 30 min. - 35#.

6-16-57: DST #6 from 4707 to 4808 w/1" TC & 3/4" BC. TO 30 min. Weak blow for 5 min. & died. Rec. 25' of slightly O & G cut mud. In. mud 2480#, min. & max. fl. 50#, Final 2460#. BU after 30 min. 50#.

6-20-57: DST #7 from 5252 to 5350 w/1" TC & 3/4" BC. TO 30 min. Weak blow for 8 min. & died. Rec. 15' very slightly oil & gas cut mud. In. mud 2750#, min. & max. fl. 35#, Final 2750#. BU after 30 min. 35#.

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 4
CASE NO. 3391

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Humble Oil & Refining Company

Address Box 1268

Farmington, New Mexico

COPY ORIGINAL SIGNED: R. M. LILLY

By Russell M. Lilly

Title Dist. Supt.

U.S. GOVERNMENT PRINTING OFFICE : 1956—O-363360

AW/

Form 9-881a
(Feb. 1951)

APPROVED
JUL 4 1957
SAMUEL L. PLUMMER
ACTING DISTRICT ENGINEER

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

Land Office SF-078853 078855

Lease No. .....

Unit .....

RECEIVED
JUL 2 7 1957
U. S. GEOLOGICAL SURVEY
FARMINGTON, NEW MEXICO

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY DST	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

SOUTH CHACO UNIT — Farmington, New Mexico June 26, 1957

Well No. 4 is located 1130 ft. from {N/S} line and 1130 ft. from {E/W} line of sec. 10

NE/4 of NE/4 (¼ Sec. and Sec. No.) — T-22-N (Twp.) — R-8-W (Range) — (Meridian)

Morrison W/C (Field) — San Juan (County or Subdivision) — New Mexico (State or Territory)

The elevation of the derrick floor above sea level is 6858 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

6/26/57: DST #9 from 5636' - 5675' (2nd. bench Dakota). 1" TC. 3/4" BC. TO 1½hrs. Good blow thruout test, too weak to measure. Gas to surface in 40 min. Rec. 60' HOGCM, 480' 36.1 corr. grav. free oil, 310' CGCMFW, 20' HOGCMFW, Chloride content 400 PPM, I & F mud 2800#, IF 30#, FF 240#, BU after 30 min. 1260#.

Straddle tested w/DST #10 from 5637' - 5644' to isolate water. 1" TC, 3/4" BC. TO 1½ hrs. Good blow thruout test. Gas to surface in 21 minutes. Rec 35' HOGCM, 400' free oil, IM 3040#, IF 0#, FM 2820#, FF 100#. BU after 30 min. 240#, Corr. grav. 43. No water.

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 3371

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Humble Oil & Refining Company

Address Box 1268

Farmington, New Mexico

By COPY ORIGINAL SIGNED: R. M. LILLY
Russell M Lilly

Title Dist. Supt.

U.S. GOVERNMENT PRINTING OFFICE: 1956—O-383540

AW/

NEW MEXICO OIL CONSERVATION COMMISSION
GAS-OIL RATIO TESTS

C-116
Revised 1-1-65

Operator: R. W. WARNER, ETAL | Pool: UNDESIGNATED GALLUP | County: SAN JUAN

Address: 416 Brady Street, Davenport, Iowa | TYPE OF TEST - (X): Scheduled ☐ Completion ☒ Re-work Special ☐

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL
WARNER FEDERAL	1	A	10	22N	6W	1/3/66	P				24	2	37	9	TSTM	

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 3393

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

(Signature)

(Title)

1-15-66
(Date)

NEW MEXICO OIL CONSERVATION COMMISSION
GAS – OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
R. W. WARNER, etal	WILDCAT DAKOTA	SAN JUAN

Address: 414 BRADY STREET, DAVENPORT, IOWA

TYPE OF TEST – (X): Scheduled ☐ Completion ☒ Special ☐

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST: WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT/BBL.
WARNER FEDERAL	1	A	10	22N	8W	6/9/65	S	Pump	--		24	3	38.0	17	TSTM	-

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 7
CASE NO. 3375

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

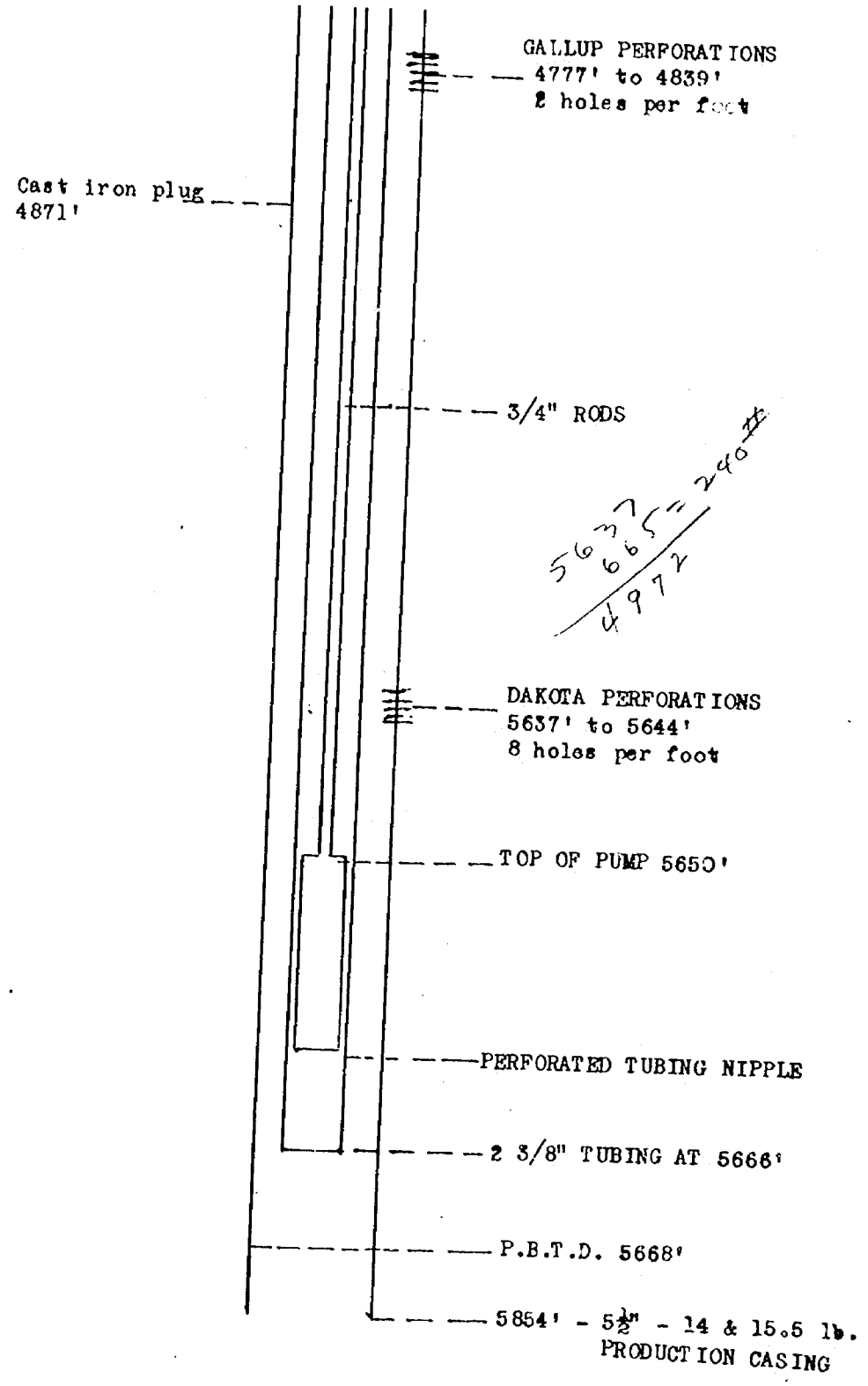
Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

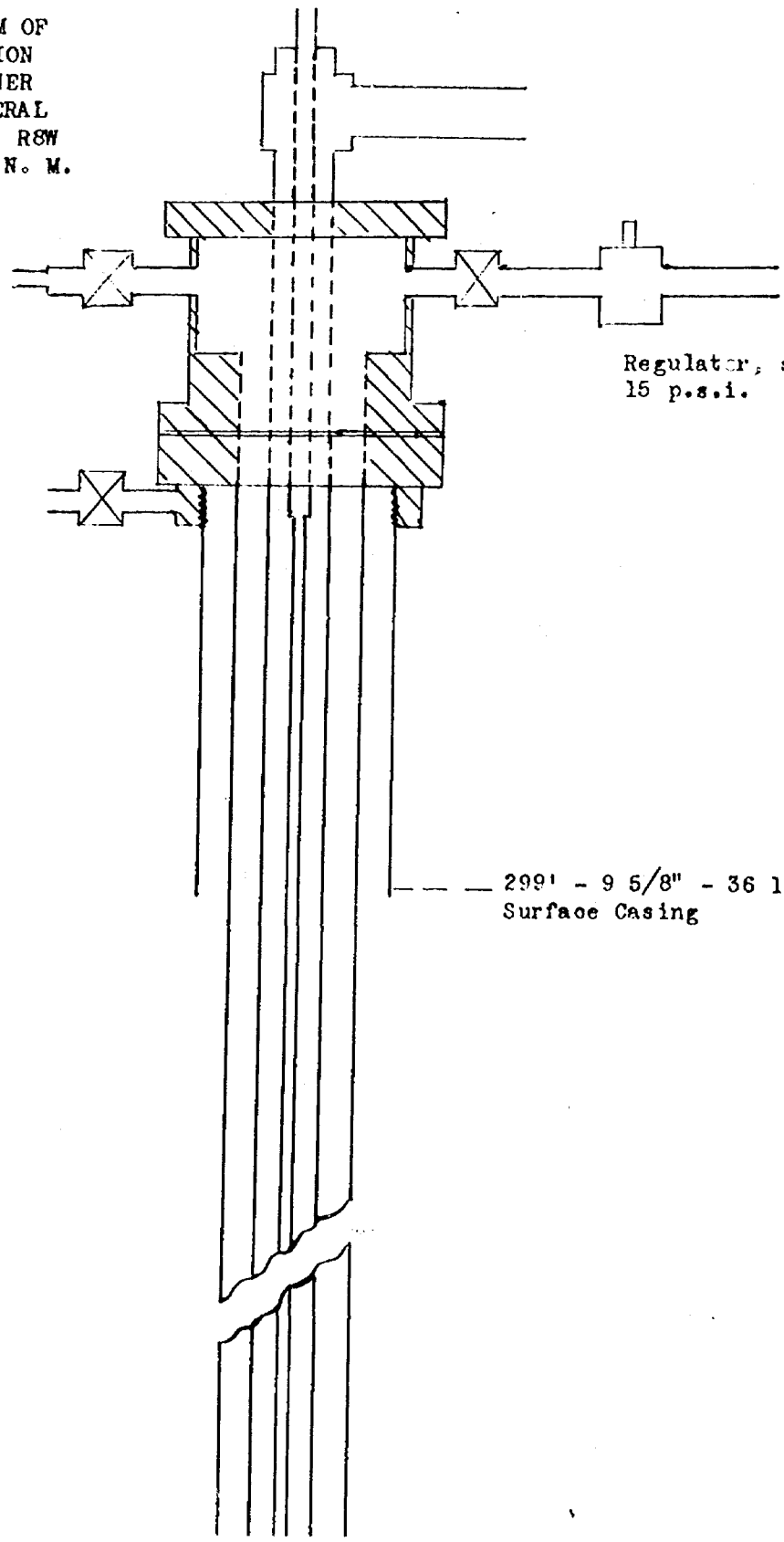
Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

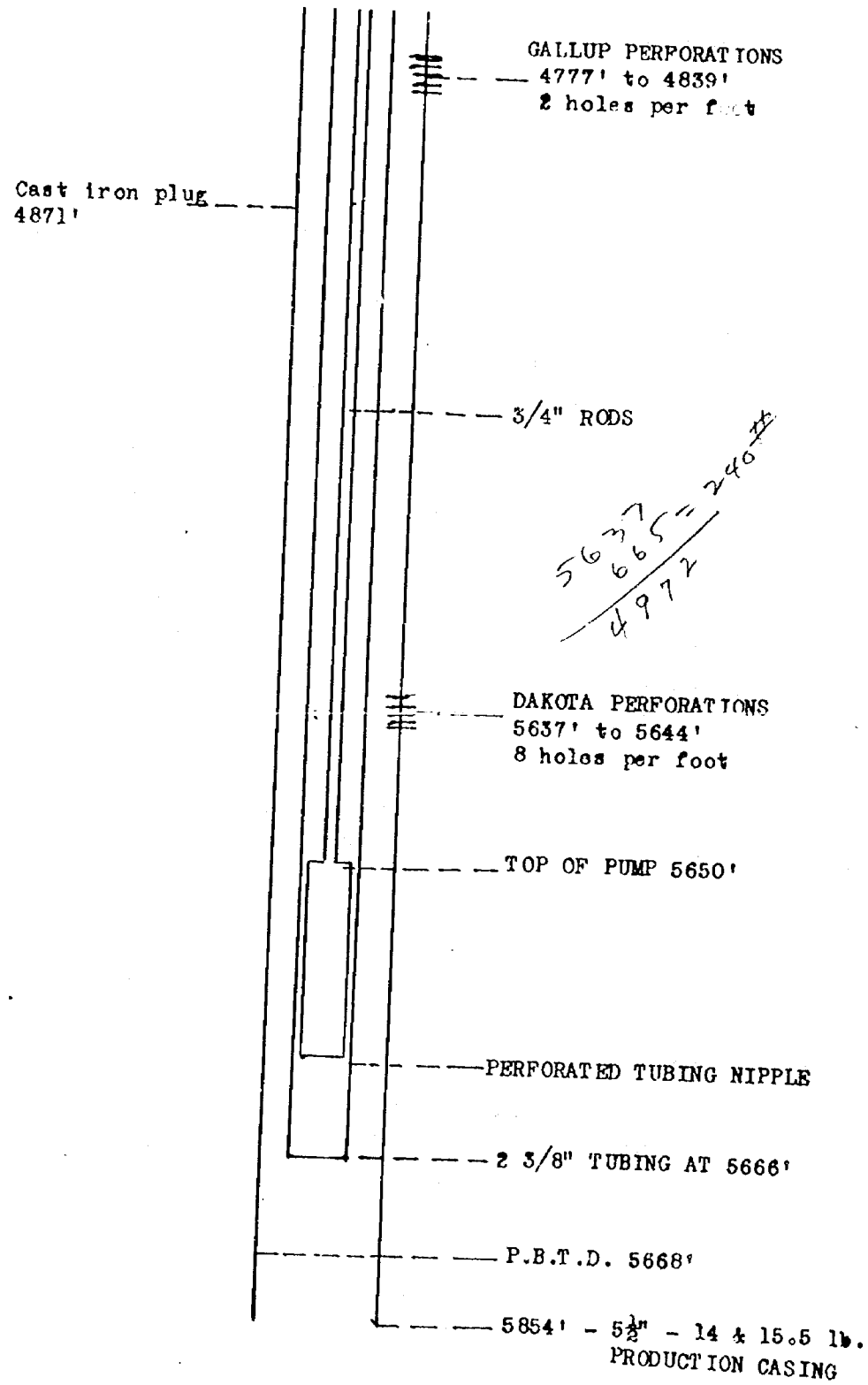
I hereby certify that the above information is true and complete to the best of my knowledge and belief.

E. A. Clement (Signature)
Agent for R. W. Warner (Title)
6/18/65 (Date)


GALLUP PERFORATIONS
4777' to 4839'
2 holes per foot
Cast iron plug
4871'
3/4" RODS
5637
665
4972
240#
DAKOTA PERFORATIONS
5637' to 5644'
8 holes per foot
TOP OF PUMP 5650'
PERFORATED TUBING NIPPLE
2 3/8" TUBING AT 5666'
P.B.T.D. 5668'
5854' - 5½" - 14 & 15.5 lb.
PRODUCTION CASING

SCHEMATIC DIAGRAM OF
PROPOSED COMPLETION
OF THE R. W. WARNER
No. 1 WARNER FEDERAL
Section 10, T22N, R8W
San Juan County, N. M.




GALLUP PERFORATIONS
4777' to 4839'
2 holes per foot
Cast iron plug
4871'
3/4" RODS
5637 - 5665 = 240 #
4972
DAKOTA PERFORATIONS
5637' to 5644'
8 holes per foot
TOP OF PUMP 5650'
PERFORATED TUBING NIPPLE
2 3/8" TUBING AT 5666'
P.B.T.D. 5668'
5854' - 5½" - 14 & 15.5 lb.
PRODUCTION CASING

ECONOMICS

The last month of production on each zone was 101 barrels from the Dakota and 107 barrels from the Gallup. It is believed the zones were stabilized after each was produced for 3 months and it is anticipated that total production from both zones will be 208 barrels per month.

Average gravity of the oil has been; Dakota 37.5 degrees; Gallup 38.9 degrees. As approximately the same amount of oil is expected to be produced from each zone, the expected gravity of the mixed oil is 38.2 degrees.

Price of all oil sold to date has been $2.40 per barrel. It is therefore not expected that the price will change, as a result of mixing the oils.

Anticipated Gross Monthly Income from Both Zones

208 barrels @ $2.40 per barrel - - - - -$499.20

Anticipated Monthly Operating Expense

Operating Personnel	$110.00
Supplies, minor repairs, misc.	30.00
Depreciation, paraffin removal, major repairs	35.00
Total	$175.00

Anticipated Monthly Net Profit - - - - - $324.20

Expected Total Dual Completion Cost - - - - - - - - - - - - -$16,215.00

Pumping Unit	$2,700.00	Packer	850.00
Pump	300.00	Tanks	1,200.00
Rods	800.00	Setting pkr.	325.00
2 strings tbng. 11,200' @ .70	7,740.00	Rig expense	900.00
		Supervision	300.00
Head	600.00	Trucking, misc.	500.00

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 10
CASE NO. 3391

With the listed cost of $16,215.00 to dual complete this well and the anticipated income of $324.20 per month, a pay-out of 50 months could be expected, should the production maintain the present level. Past experience on marginal wells indicated the production will gradually decline, thus further prolonging the pay-out period.

The operator has in excess of $35,000.00 invested in this well at the present time and his reluctance to invest further can be understood.

RESERVOIR LOSS

It is not expected that oil will be lost from one formation to the other, due to the existing low pressures in the Gallup and Dakota formations. As evidence of these pressures, copies of the drill stem test records on the subject zones, as filed with the U.S. Geological Survey by Humble Oil & Refining Co, are attached.

The Dakota productive zone, which is now perforated, indicated a pressure of 240 p.s.i. on the original drill stem test taken when the well was drilled. By using an average oil gravity of 38.2, it is found that .361 p.s.i. of pressure is exerted for each foot of oil, which is calculated further to find that 240 p.s.i. of bottom hole pressure will raise a column of oil 665'. As it is 798' from the top perforation of the Dakota to the bottom perforation of the Gallup, it is not expected that the oil would rise high enough to enter the Gallup formation. It is further planned to set the pump below the Dakota

perforations, in order to keep the oil pumped out as it enters the well bore and drains by gravity to the bottom of the hole.

It is planned to maintain a gas pressure of 15 p.s.i. in the annulus between the tubing and the casing by installing a regulator at the surface, thereby eliminating the possibility of the Gallup being over-come by Dakota gas pressure.

According to the attached record of a drill stem test on the Gallup zone, the shut in pressure was 50 p.si., therefore, it is not anticipated that a problem will be encountered in the Gallup pressure overcoming the Dakota formation.

COMPLETION

The completion and operation of this well as shown on the attached diagram should not present a problem, as all operations planned are quite standard. Tubing, pump and rods will be pulled from the well and the plug now present at 4871', which separates the Gallup and Dakota, will be drilled. Tubing, pump and rods will be re-run, with the top of the pump placed 6 feet below the bottom Dakota perforation. Gas from the well will be used as fuel for the unit engine.