

CASE 3110: Application of GEORGE
L. BUCKLES for a waterflood
project in Langlie-Mattix Pool.

CASE NO.

3110

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

DRAFT
JMD/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. 3110

Order No. R-2776

APPLICATION OF GEORGE L. BUCKLES COMPANY
FOR A WATERFLOOD PROJECT, LEA 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 day of October, 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, George L. Buckles Company,
seeks permission to institute a waterflood project in the

Langlie-Mattix Pool by the injection of water into the
Queen formation through two injection wells/~~in~~
/ on its Jamison Lease in
Sections 21 and 22, Township 24 ~~NORTH~~, Range
South
37 ~~West~~, NMPM, Lea County, New Mexico.
East

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

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

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

IT IS THEREFORE ORDERED:

(1) That the applicant, George L. Buckles Company, is hereby authorized to institute a waterflood project in the

~~in the~~ Langlie-Mattix Pool by the injection of water into the

to be drilled Queen formation through the following-described wells at unorthodox locations on its Jamieson Lease in Township 24 ~~North~~ South, Range 37 ~~West~~ East,

NMPM, Lea County, New Mexico:

Buckles-Jamieson #5 - 1325'/N, 1315'/E line sec. 21.
Buckles-Jamieson #6 - 1325'/N, 5'/E line sec. 21.

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

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and ¹¹¹⁹~~1120~~ of the Commission Rules and Regulations.

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

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

1964 SEP 6 PM 3 22

1964 SEP 6 PM 3 22

George L. Buckles Company

OIL PRODUCTION
CONSULTANTS - OPERATORS
Moulthans, Texas 79756

August 12, 1964

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

Gentlemen:

It is respectfully requested that a hearing be scheduled for application for permit to conduct secondary recovery operations by water injection on our Jamison lease in the Langlie-Mattix Field, in Lea County, New Mexico. The lease consists of the E/2 of the NE/4 of Section 21 and the W/2 of the NW/4 of Section 22, T-24-S, R-37-E and containing 160 acres more or less.

Enclosed is a plat colored in yellow showing the present status of the lease, the surrounding area and the location of the proposed injection wells. There are at the present time three producing wells located on 40-acre proration units.

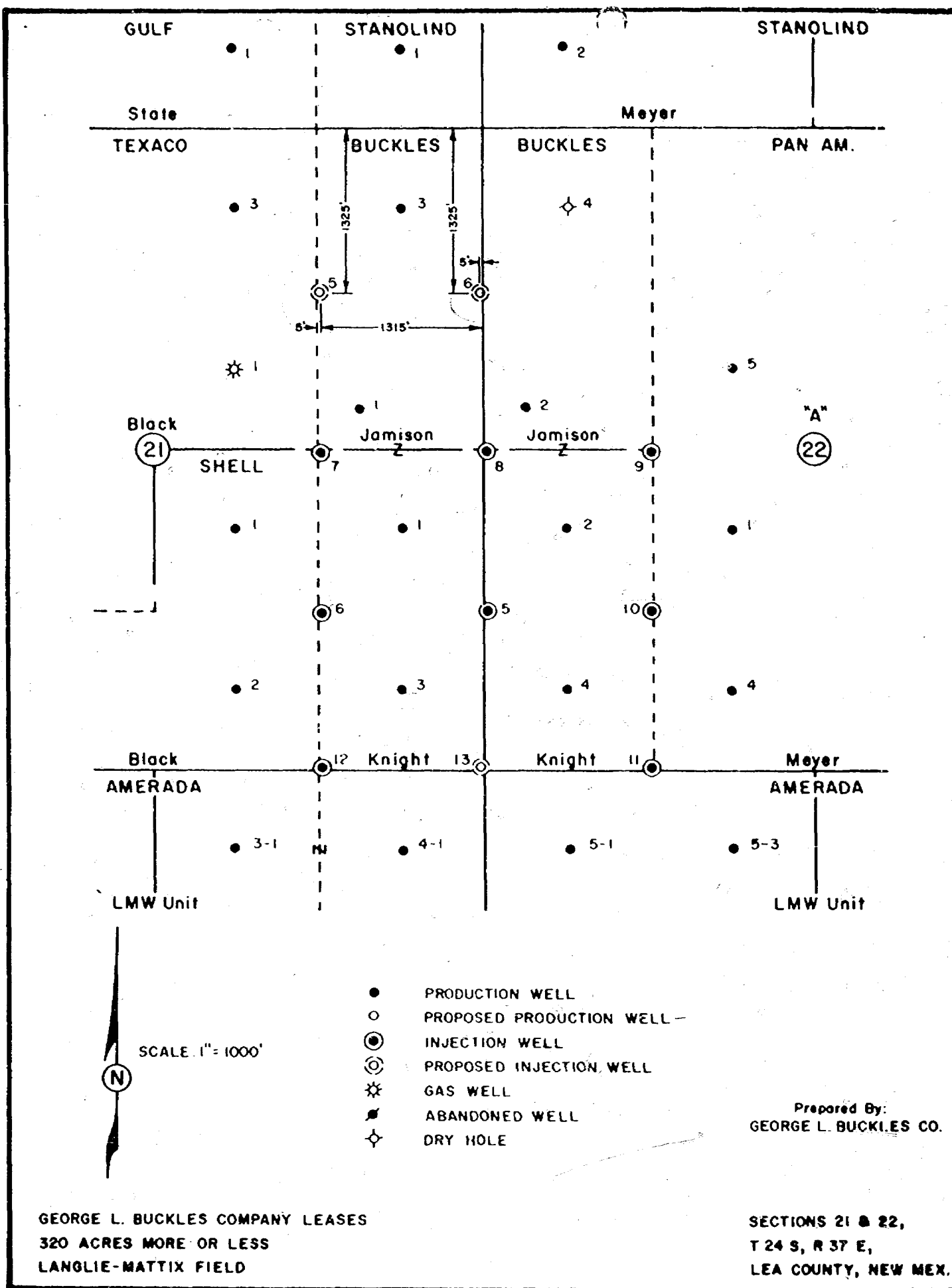
The Oil Conservation Commission issued Order No. R-2535, Case No. 2867 on July 31, 1963, approving the application of this company to conduct waterflood operations on its Knight lease, which is a direct offset to our Jamison lease to the south. This lease is shown on the enclosed plat colored in blue. After the permit was granted, we drilled eight water injection wells on our Knight lease at locations shown on the plat. Water injection was started into these eight wells on April 10, 1964.

As of August 10, 1964, the accumulated volume of water injected into each of these wells was as follows:

Well No. 5 - 14,068 barrels
Well No. 6 - 30,810 barrels
Well No. 7 - 24,181 barrels
Well No. 8 - 31,292 barrels

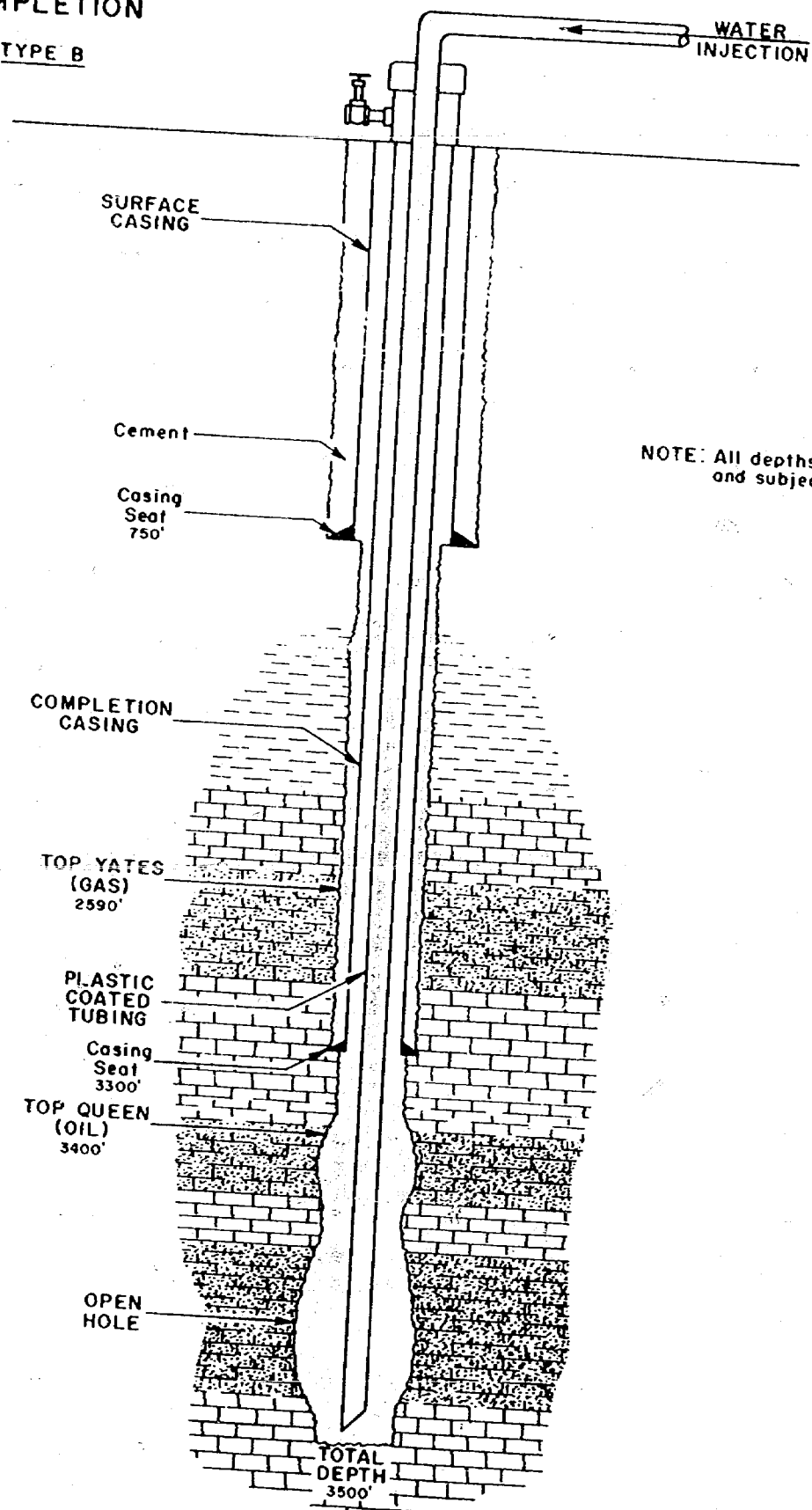
Well No. 9 - 27,696 barrels
Well No. 10 - 31,527 barrels
Well No. 11 - 15,566 barrels
Well No. 12 - 31,395 barrels.

The current rate for all wells is 1,628 barrels per day and the wellhead pressure ranges from 200 to 1,000 psig. No waterflood response has been noted and the performance to date has been according to our expectations.



TYPICAL INJECTION WELL COMPLETION

TYPE B



NOTE: All depths approximated
and subject to change.

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 30, 1964

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 3099: (Continued from the September 9, 1964, examiner hearing). Application of Leonard Nichols for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of the West Maljamar Unit Area comprising 440 acres more or less, of Federal and fee lands in Sections 4 and 9, Township 17 South, Range 32 East, Lea County, New Mexico.
- CASE 3100: (Continued from the September 9, 1964, examiner hearing). Application of Leonard Nichols for a waterflood extension, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the extension of the waterflood project which he operates in Sections 2, 3, 10, and 11, Township 17 South, Range 32 East, Maljamar Pool, Lea County, New Mexico, by the addition of 6 water injection wells in Sections 4 and 9, same township. The original flood was authorized as the Boller-Nichols Waterflood Project, Roberts Pool, by Order No. R-1538.
- CASE 3107: Application of Texas Pacific Oil Company for temporary special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of temporary special pool rules including a provision for 80-acre spacing for the North Bagley Middle Pennsylvanian Pool in Township 11 South, Range 33 East, Lea County, New Mexico.
- CASE 3108: Application of Monsanto Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Dagger Draw Well No. 1, located in Unit O of Section 6, Township 20 South, Range 25 East, Eddy County, New Mexico, to produce gas from the Strawn and Morrow formations through the casing-tubing annulus and through tubing, respectively.
- CASE 3109: Application of Phillips Petroleum 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 an 80-acre non-standard gas proration unit comprising the E/2 SW/4 of Section 35, Township 17 South, Range 34 East, Lea County, New Mexico, to be dedicated to its Hale Well No. 11 to be completed in an undesignated Yates gas pool at an unorthodox location 1980 feet from the South line and 2310 feet from the West line of said Section 35.
- CASE 3110: Application of George L. Buckles Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Langlie-Mattix Pool by the injection of water into the Queen formation through two wells at unorthodox locations on its Jamison Lease in Sections 21 and 22, Township 24 South, Range 37 East, Lea County, New Mexico.

CASE 3111: Application of Cities Service Oil Company for the expansion of a waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand the Drickey Queen Waterflood Project, Caprock Queen Pool, by the conversion to water injection of two wells in Units F and H of Section 22, Township 14 South, Range 31 East, Chaves County, New Mexico.

CASE 3112: Application of Continental Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to install dual-flow downhole commingling equipment in its dually completed Jicarilla 28 Well No. 1, located in Unit J of Section 28, Township 25 North, Range 4 West, Rio Arriba County, New Mexico. Said well is a Gallup-Dakota oil-oil dual completion.

CASE 3113: Application of BCO, Inc. for a unit agreement, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks approval of the Escrito Gallup Pool Unit Area comprising 3123.88 acres, more or less, of state and federal lands in Township 24 North, Ranges 7 and 8 West, San Juan and Rio Arriba Counties, New Mexico.

CASE 3114: Application of BCO, Inc. for a waterflood project, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Escrito Gallup Oil Pool in its Escrito Unit Area by the injection of water into the Gallup formation through three wells located in Sections 17 and 18, Township 24 North, Range 7 West, and Section 12, Township 24 North, Range 8 West, San Juan and Rio Arriba Counties, New Mexico.



STATE OF NEW MEXICO 1964 AUG 27 AM 7 40

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

August 26, 1964

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, N. M.

87501

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
Santa Fe, N. M.

Dear Mr. Porter:

Reference is made to the application of the George L. Buckles Company for permit to conduct secondary recovery operations in the Jameson Lease in the Langlie-Mattix Field, which was submitted on August 12, 1964.

After reviewing the application and diagrammatic sketch of the well and obtaining additional requested information from Mr. Buckles, it appears that no threat of contamination to any fresh waters which may exist in the area will occur. Therefore, this office offers no objection to the granting of the application.

Yours truly,

S. E. Reynolds
State Engineer

By: *Frank E. Irby*
Frank E. Irby
Chief
Water Rights Div.

FEI/ma
cc-F. H. Hennighausen
G. L. Buckles Co.

APPLICATION OF GEORGE L. BUCKLES COMPANY FOR A
WATERFLOOD PROJECT, LEA COUNTY, NEW MEXICO

CASE NO. 3110 - SEPTEMBER 30, 1964

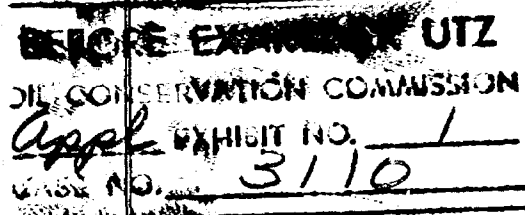
NAME OF FIELD - Langlie-Mattix.
LOCATION - Jamison Lease - Being the E/2 of the NE/4 of Section 21
and the W/2 of the NW/4 of Section 22, T-24-S, R-37-E,
and containing 160 acres, more or less.

RESERVOIR - Queen Sand.

PRESENT STATUS
OF THE LEASE - The lease now has three producing wells operated by
pumping units and gas engines. Current production is
6 barrels of oil per day and no water. Average depth
of the wells 3,550 feet. Casing setting on present
wells averaged 3,062 feet in wells 1 and 2 and 3,346
feet in well No. 3. Accumulated oil recovery from the
lease was 310,000 barrels at January 1, 1964. Gravity
of the oil is 36° API.

PLAN OF
DEVELOPMENT - Please note from the plat that three water injection wells
are being operated adjacent to the south line of the
Jamison lease. Also that Jamison wells 1 and 2 are
located 330 feet from the south line of the Jamison lease.

The plan is to drill two water injection wells on the Jamison
lease. Well No. 5 is to be located 1,325 feet south of the



north line and 1,315 feet west of the east line of Section 21. Well No. 6 is to be located 1,325 feet south of the north line and 5 feet west of the east line of Section 21. These two wells coupled with Knight wells 7 and 8 will enclose a 40-acre 5-spot around Jamison well No. 1. Knight wells 8 and 9 and Jamison No. 6 will enclose Jamison No. 2 in a 4-spot pattern. There is a porosity pinchout toward the north and east portion of the Jamison lease and it is felt the above two injection wells will satisfactorily flood the Jamison lease.

The two wells will be drilled with cable tools. Surface casing (8-5/8" OD) will be set at approximately 825 feet and cemented to the surface. This will protect all fresh water sands, including the Santa Rosa. The long casing string (4-1/2" OD) will be set just above the first oil sand in the Queen formation at an approximate depth of 3,400 feet.

We already have sufficient water at our Knight water plant to furnish water for the two wells to be drilled on the Jamison lease. The water is Rustler salt water encountered at a depth of 1,150 feet. If we are allowed to transport this water from our Knight lease to the Jamison lease, it will be used. If not, we plan to drill a fresh water well

on the Jamison lease to supply the water for the two injection wells.

Initial injection rates are expected to be 300 barrels per well per day at a maximum of 1,000 psi surface pressure.

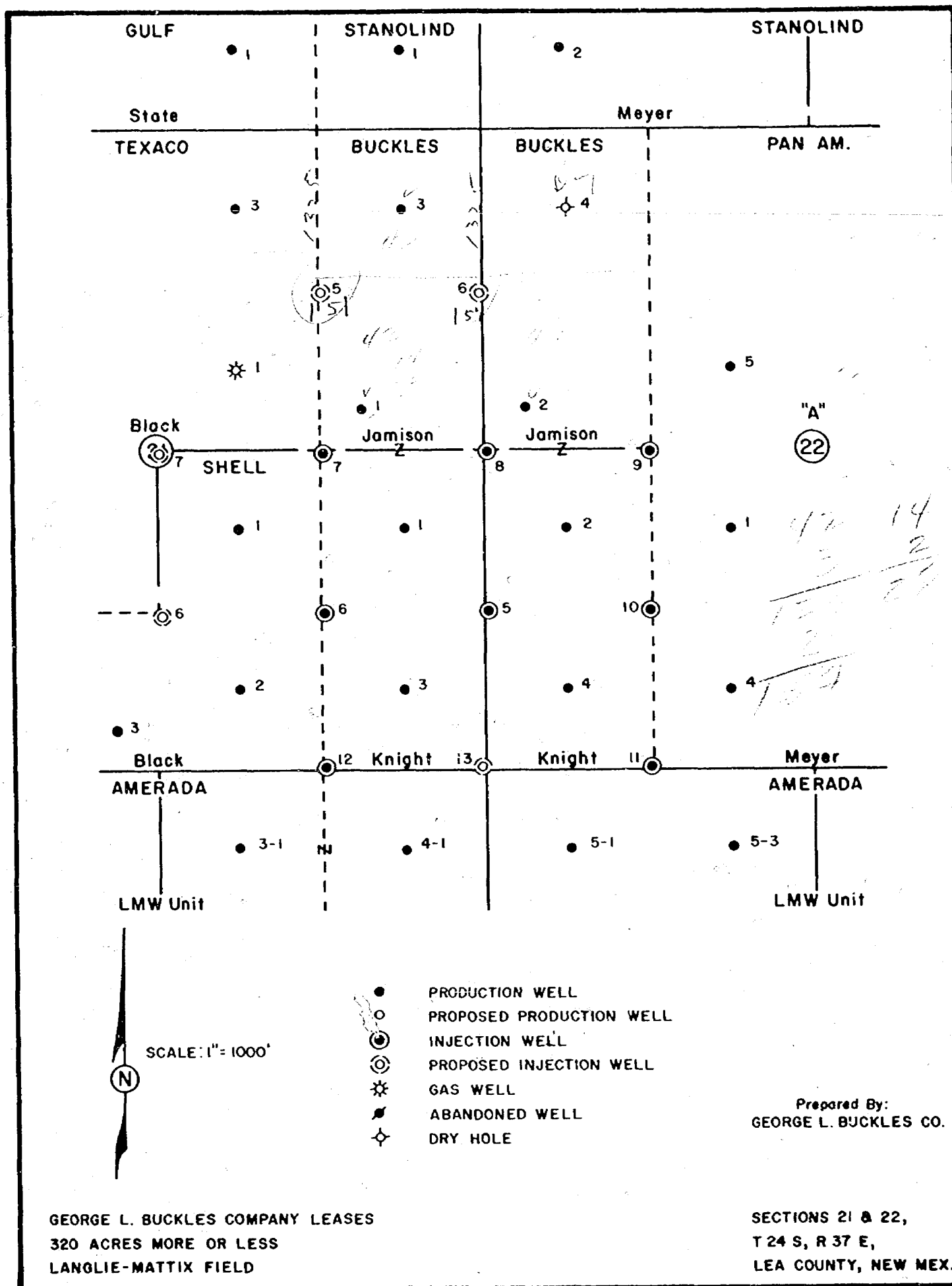
The present status of our Knight Waterflood (September 25, 1964) is as follows:

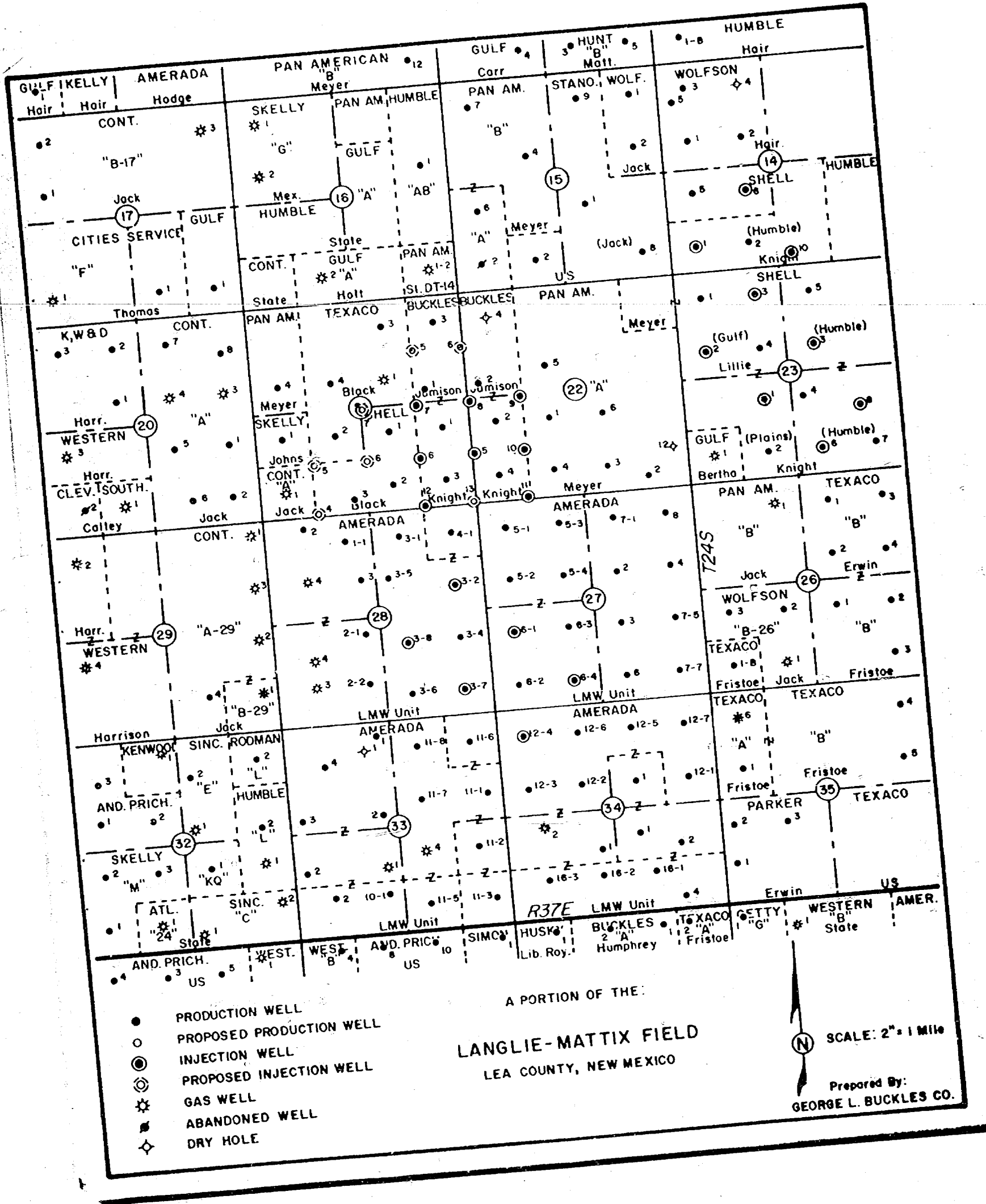
<u>Well</u>	<u>Current Daily Rate</u>	<u>Pressure</u>	<u>Accumulated Volume</u>
5	133	260	20,820
6	300	380	44,343
7	145	1,000	29,803
8	300	540	45,578
9	144	1,000	35,152
10	325	740	44,316
11	87	1,000	19,336
12	295	480	43,873

13 Drilling

No flood response has been noted from water injection on the Knight lease and no water is being produced with the oil.

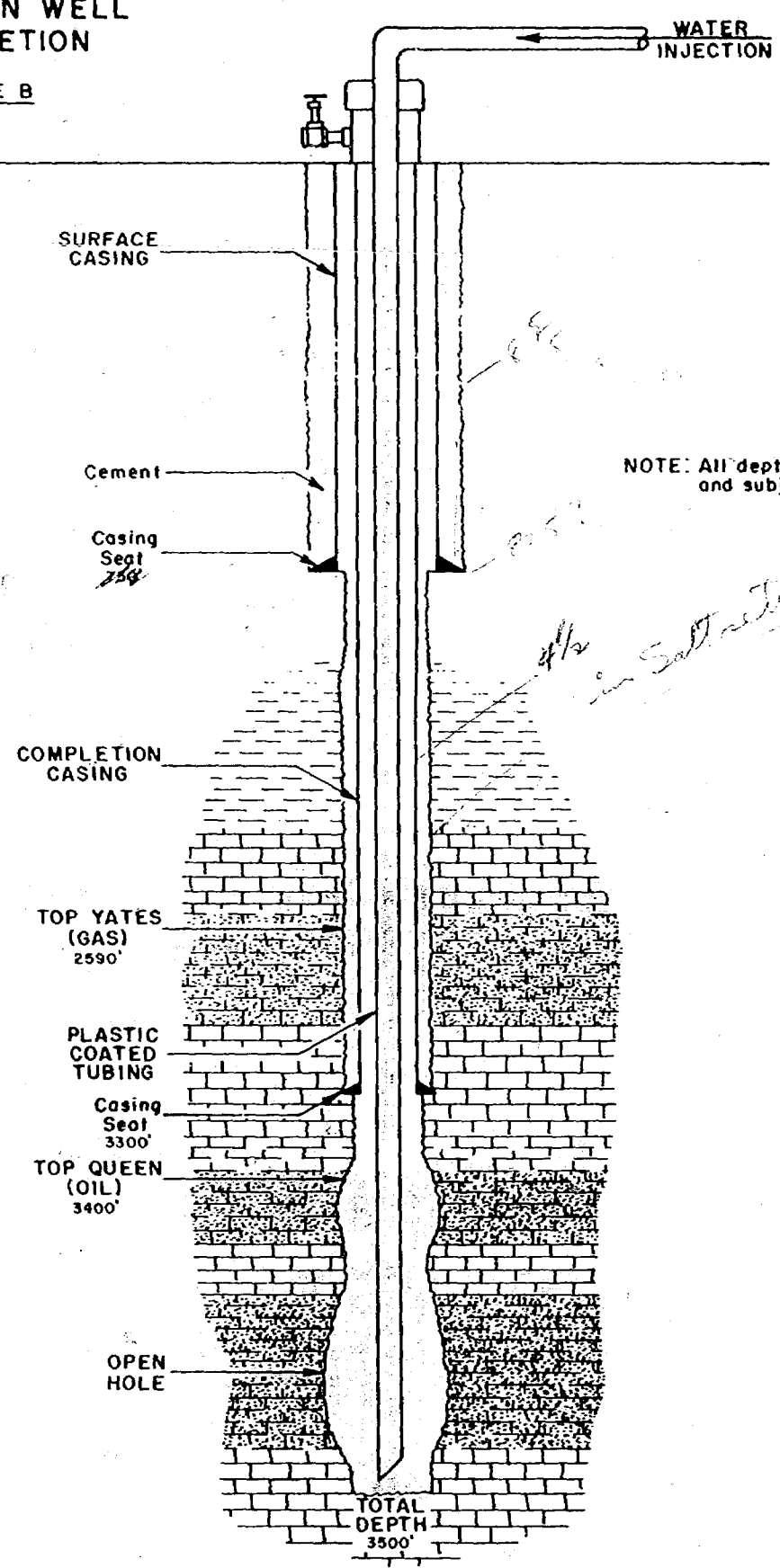
Because of the close spacing of Jamison wells 1 and 2 to the Knight lease line, it is requested that permit be granted as soon as possible to drill Jamison wells 5 and 6 to prevent a severe unbalanced flood condition on the Jamison lease.





TYPICAL
INJECTION WELL
COMPLETION

TYPE B



Cure 3110

Ward 9-30-64

Recd. 10-1-64

1. Grant George L. Buckles permission to conduct a waterflood on his Jamison lease consisting of. W/2 NW/4 sec. 22, and. E/2 NE/4 sec. 21, all in. 24S-37E.

2. Grant permission to ~~inject~~ drill two new injection wells as follows:
Buckles Jamison # 5 - 132S/N, 131S/E line sec. 21
" " # 6 - 132S/N, 5/E " " "
24S-37E.

Shoal

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

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

P. O. BOX 2088
SANTA FE
87501

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

19

Gentlemen:

Enclosed herewith is Commission Order No. R- 2776, entered in Case No. 3110, approving the Leo Buckles Langlie Mattie Jamison Water Flood Project.

as to allowable, indicate that
According to our calculations, when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 154 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 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.

Injection is to be through the two authorized injection wells which shall be equipped with surface casing set at approximately 825 feet and cemented to the surface and 4 1/2-inch long string set at approximately 3400 feet and cemented back into the hole.

cc: OCC - Hobbs
Frank Irby

Very truly yours,
Secretary-Director

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

October 2, 1964

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

O
Dear Sir:

Enclosed herewith is Commission Order No. R-2776, entered in Case No. 3110, approving the George Buckles Langlie-Mattix Jamison Water-flood Project.

P
Injection is to be through plastic-coated tubing in the two authorized injection wells which shall be equipped with surface casing set at approximately 825 feet and cemented to the surface and a 4 $\frac{1}{2}$ -inch long string set at approximately 3400 feet and cemented back into the salt.

Y
As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 154 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 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,

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

-2-

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/ix

cc: Oil Conservation Commission
Hobbs, New Mexico

Mr. Frank Irby
State Engineer Office
Santa Fe, 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. 3110
Order No. R-2776

APPLICATION OF GEORGE L. BUCKLES
COMPANY FOR A WATERFLOOD PROJECT,
LEA 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 1st day of October, 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, George L. Buckles Company, seeks permission to institute a waterflood project in the Langlie-Mattix Pool by the injection of water into the Queen formation through two injection wells to be drilled at unorthodox locations on its Jamieson Lease in Sections 21 and 22, Township 24 South, Range 37 East, NMPM, Lea County, New Mexico.

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

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

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

-2-

CASE No. 3110

Order No. R-2776

IT IS THEREFORE ORDERED:

(1) That the applicant, George L. Buckles Company, is hereby authorized to institute a waterflood project in the Langlie-Mattix Pool by the injection of water into the Queen formation through the following-described wells to be drilled at unorthodox locations on its Jamieson Lease in Township 24 South, Range 37 East, NMPM, Lea County, New Mexico:

Buckles-Jamieson Well No. 5, 1325 feet from the North line and 1315 feet from the East line of Section 21 and

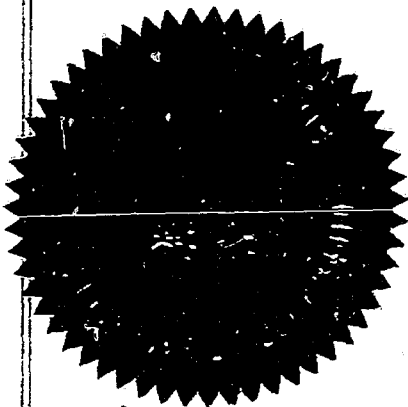
Buckles-Jamieson Well No. 6, 1325 feet from the North line and 5 feet from the East line of Section 21.

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

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1119 of the Commission Rules and Regulations.

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

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



esr/

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

E. S. Walker
E. S. WALKER, Member

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

dearnley-meier reporting service, inc.

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

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



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 30, 1964

EXAMINER HEARING

IN THE MATTER OF: Application of George L.)
Buckles Company for a waterflood project, Lea)
County, New Mexico. Applicant, in the above-)
styled cause, seeks authority to institute a)
waterflood project in the Langlie-Mattix Pool)
by the injection of water into the Queen)
formation through two wells at unorthodox)
locations on its Jamison Lease in Sections 21)
and 22, Township 24 South, Range 37 East, Lea)
County, New Mexico.)

Case No. 3110

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 3110.

MR. DURRETT: Application of George L. Buckles Company for a waterflood project, Lea County, New Mexico.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, New Mexico, representing the Applicant. We have one witness to be sworn.

(Witness sworn.)

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

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A George L. Buckles.

Q What connection do you have with the George L. Buckles Company, Applicant in Case Number 3110, Mr. Buckles?

A I am sole owner of the company.

Q In effect then you are the Applicant?

A Yes.

Q Have you testified before the Oil Conservation Commission and made your qualifications a matter of record?

A Yes, I have.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir, they are.



Q (By Mr. Kellahin) Mr. Buckles, what is proposed by your company in Case Number 3110?

A This application involves our recently acquired Jamison lease which consists of the east half of the northeast quarter of Section 21, and the west half of the northwest quarter of Section 22, Township 24 South , Range 37 East, containing 160 acres.

We already have a permit and are flooding our Knight Lease, which is the 160 acres adjoining the Jamison Lease to the south.

Q Is that shown on the plat which is attached to Exhibit Number 1?

A The Jamison Lease is shown colored in yellow, and the Knight Lease colored in blue. The Jamison Lease has three producing wells and one dry hole, and if you'll notice the plat the Jamison Wells 1 and 2 were drilled off location 330 feet from the south line of Jamison Lease.

We have three water injection wells five feet from the north line of the Jamison Lease, I mean from the south line of the Jamison Lease already taking water, and Wells 1 and 2 on the Jamison Lease are closer than a standard location to these injection wells.

Our general plan is to drill two water injection wells on the Jamison Lease through the Queen sand producing zone. These

wells are shown on the plat as being Wells 5 and 6. Both wells are shown 1325 feet south of the north line of the Jamison Lease; Number 5 is five feet from the west line of the lease; Number 6 is five feet west of the center of the lease. By drilling and injecting water into these two wells we close Jamison Well Number 1 in a 40-acre five-spot pattern in conjunction with Knight Wells 7 and 8, and it closes Well Number 2 in what we would consider a four-spot pattern composed of Jamison Well Number 6 and Knight Wells 8 and 9.

Now, we feel that since there's a porosity or a pinchout going northeast toward the dry hole Well Number 4, that we would not be justified in drilling another well on the east line of the Jamison Lease, that we would actually be flooding toward a pinchout, and we expect to recover most of the oil in that area in Jamison Well Number 2. Also, the production deteriorates going north beyond Well Number 3, and we feel that we would not be justified in drilling any wells along the north line of the lease unless we would have complete cooperation with all offset operators which has not been established at the present time.

Q Is it possible to use the Number 4 Well for water injection?

A According to the records we received regarding this well it has no shows of oil and gas in the Queen formation. It was tested in several places and acidized and there was no show

of oil or gas either, so we feel that this well can not be used for any purpose in the Queen sand.

Q How will the two proposed injection wells be drilled, Mr. Buckles?

A We plan to drill both wells from top to bottom with cable tools, set a string of 8 5/8's O. D. Casing through all water sands at an approximate depth of 325 feet, and cement to the surface. We plan to drill through the Rustler formation at about 1200 feet, and set an intermediate string of 7-inch casing merely to shut off the water so we can drill a dry hole from there to the bottom.

We are going to test all zones as we go through them for all possible oil and gas shows, and after we drill through the presently productive Queen zone in the area we will run a string of 4 1/2 O. D. casing and set it just above the first oil zone in the Queen and cement this pipe up through the Seven Rivers and Yates formations, up through the tansil lime and to the salt section. The 7-inch casing will then be pulled and we will leave the two strings, the 8 5/8's set through the fresh water and the long string at the top of the Queen pay formation.

Q Will that effectively protect all fresh water zones involved?

A Yes, sir.

Q Has this proposed completion been submitted to the

dearnley-meier (800) 768-2810

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

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



Office of the State Engineer?

A Yes, it has.

Q And do you know whether it was approved by the State Engineers Office?

A Yes, I have a letter from Mr. Irby that his office approves this method of completion.

Q Does that letter show a copy going to the Oil Conservation Commission?

A Yes, sir.

Q Mr. Buckles, what is the present status of the wells that are located on the Jamison Lease, as to their production?

A The three wells are now producing with individual pumping units and gas engines.

Q What volume of oil are they producing?

A Total lease produces approximately six barrels of oil per day and no water.

Q Would you say it is at an advance stage of depletion?

A Yes, sir, the lease was, until we acquired it, was making about three barrels a day, but we have recently put Wells Number 1 and 2, have installed pumping equipment, and have increased the production by about four barrels per day, but we would state that the status of the lease now is on the later stages of depletion from a primary producing standpoint.

Q Has the injection of the water in the Knight Lease

effectively increased the rate of production?

A No, sir.

Q You received no response as yet?

A That's right.

Q Is it important that water be injected on the Jamison Lease in the near future to protect the waterflood on the Knight Lease?

A We feel that if we do not drill Wells 5 and 6 on the Jamison Lease and start injecting water into them at an early date that the Jamison flood itself will be out of balance due to the early injection into the Knight Lease to the south. This is especially true since Wells 1 and 2 on the Jamison Lease were located off location, closer to the Knight injection wells than normal locations would be.

Q What will be your source of injection of water in the wells on the Jamison Lease?

A We have a water plant under operation on the Knight Lease. Our water is coming from the Rustler formation at about 1150 feet depth. It is a brine salt water. We have sufficient water from this source to flood the Jamison Lease. However, at the present time we do not have a permit from the land owner to move water from the Knight Lease to the Jamison Lease. If this can be acquired we plan to use the Rustler salt water to inject into the Jamison Wells 5 and 6. If we cannot secure this permit

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we will necessarily have to drill a well for source water on the Jamison Lease. In that event we will probably drill a fresh water well at a shallow depth and put in a small water plant and use fresh water to inject into Jamison Wells 5 and 6.

Q There is fresh water available in that area, is that correct?

A Yes, sir.

Q Is that located inside a declared water basin?

A No, sir, it is my understanding it is not.

Q What volumes of water do you anticipate you will inject?

A We hope to be able to inject 300 barrels of water per day per well, at approximately 1,000 pounds of pressure. However, to maintain a rate approaching this our plant will be constructed to handle pressure up to 2,000 pounds per square inch.

Q Was Exhibit Number 1 prepared by you or under your supervision, Mr. Buckles?

A Yes, sir, under my supervision.

MR. KELLAHIN: At this time I would like to offer in evidence Exhibit Number 1.

MR. UTZ: Without objection Exhibit Number 1 will be entered into the record.

(Whereupon, Applicant's Exhibit No. 1 was admitted in evidence.)

MR. KELLAHIN: That's all the questions I have on



direct examination.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Buckles, the surface casing is 8 5/8's, is that correct?

A Yes, sir.

Q I notice your diagram shows the seat at 750 and your description on Page 1 shows 825, which is correct?

A Since the drawing was made we've decided to set a minimum of 825 feet merely because we found a small thin fresh water zone below 700 feet in our Knight Well Number 6; so to be safe we plan to set a minimum of 825 feet. We may even set more than that, but that will be the minimum.

Q It will be circulated?

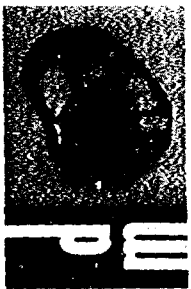
A Yes, sir.

Q Now, your 4 1/2 inch will be seated at approximately 3300, or top of the Queen?

A Yes, sir.

Q And what will be the top of the cement?

A We will calculate the volume required to come up through the tansil lime into the salt section, and then we will increase that by 50 percent, and since this is a new well with no thief zones encountered or any caving or anything like that, we have found that this will be adequate to protect the Yates



and any formations above the Queen up through the salt section.

Q Is your injection tubing two inch?

A Yes, sir, it's two inch O. D. tubing and it will be coated inside.

Q Coated inside?

A Yes.

Q Will there be a packer set?

A No, sir, we do not plan to set a packer because we feel that with brand new 4 1/2 O. D. casing cemented up through the tansil lime that it will adequately protect any formations; also, since we are having an openhole completion we want to be able to clean this well out by reversing water down the annulus and out the tubing as necessity requires without the necessity of moving in a rig and cleaning it out, or the necessity of removing the packer to do that.

We also found out that the water in the annulus between the tubing and the casing very quickly becomes sterile and is non-corrosive, so it will not effect the corrosion on the casing or the outside of the tubing. We found this out through experience because on tubing springs we have pulled we have found corrosion on the outside of the tubing up to the extent of where the water was going into the formation and none above that.

Q The annulus will set full of water however?

A Yes, sir.

Q The tubing will be plastic coated you say?

A Baked plastic on the inside, yes. In some cases we cement line, but in every case it's lined.

MR. UTZ: Any other questions of the witness?

Q (By Mr. Utz) I believe the plastic coating is necessary in your tubing because of the water being so-called fresh water?

A No, sir. We don't believe you can economically treat any water to make it non-corrosive; so we use the lining whether it's salt water or fresh water, in either case. We also coat all of our lines in the field, inside. Also, we plan to recycle the water that's being produced, and it, in every case, will be corrosive.

Q It's been your experience then that the water that sits in the annulus becomes non-corrosive?

A Yes, what corrosive properties it has, it will be used up by coming in contact with a metal, very readily, and there's no movement to this water, so what oxygen is there, for instance if it were, oxygen corrosion mainly goes into iron-oxide and is dissipated, so the water itself is sterile, even though it has certain saline content. At any rate that's been our experience.

We also keep our curves up to date on our injection on every well, versus pressure against time, and in the event there is any break in the pipe, or any failure, it becomes evident almost immediately from observing the curve, and in that event

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we will immediately take some remedial measures to protect the formations outside of the pipe, because we can't do any good injecting water except in the pay formations itself.

MR. UTZ: Any other questions of the witness?

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q The type of completion proposed here is the same completion approved by the Commission and the State Engineer on your Knight Lease, is it not?

A Yes, sir. We propose two proposed completions, at that hearing we had not drilled any wells and we were going to ascertain by drilling with cable tools whether or not there were any thief zones encountered below the top of the Queen zone. In the event we did not encounter any thief zones we were going to complete them as outlined in this application.

In the event we did we were going to set them and perforate. However, we did not encounter any thief zones whatsoever after we reached the top of the Queen, so we decided on an open hole completion because we have had so much better performance with an open hole completion in the event we had no thief zones to take the water.

MR. KELLAHIN: That's all.

MR. UTZ: Any other questions? The witness may be

excused.

(Witness excused.)

MR. UTZ: Any more statements in this case?

MR. KELLAHIN: If the Examiner please, the Examiner is probably familiar with the fact that the application originally filed, or forwarded in this case, apparently got lost at the post office, or somewhere else, so we have been under a considerable delay on account of this, through no fault of Mr. Buckles. In order to keep the drilling rigs busy that he has available, and also in order to get his water injected as soon as possible to back up the flood in the Jamison Lease as against the Knight Lease, we ask that an order be entered in this case as soon as possible.

MR. UTZ: You think you have covered yourself sufficiently about the loss of that application, the post office or somewhere else --

MR. KELLAHIN: I think so. I'll bring my secretary over to testify.

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

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STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, 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 and notarial seal this 10th day of October, 1964.

Ada Dearnley
Notary Public - Court Reporter

My Commission Expires:
June 19, 1967

I do hereby certify that the foregoing is a complete record of the proceedings in the Examined Hearing of Case No. 3110, heard on Sept. 30, 1964.
Thurs. A. [Signature] Examiner
New Mexico Oil Conservation Commission

APPLICATION OF GEORGE L. BUCKLES COMPANY FOR A
WATERFLOOD PROJECT, LEA COUNTY, NEW MEXICO

CASE NO. 3110 - SEPTEMBER 30, 1964

NAME OF FIELD -

Langlie-Mattix.

LOCATION -

Jamison Lease - Being the E/2 of the NE/4 of Section 21
and the W/2 of the NW/4 of Section 22, T-24-S, R-37-E,
and containing 160 acres, more or less.

RESERVOIR -

Queen Sand.

PRESENT STATUS
OF THE LEASE -

The lease now has three producing wells operated by
pumping units and gas engines. Current production is
6 barrels of oil per day and no water. Average depth
of the wells 3,550 feet. Casing setting on present
wells averaged 3,062 feet in wells 1 and 2 and 3,346
feet in well No. 3. Accumulated oil recovery from the
lease was 310,000 barrels at January 1, 1964. Gravity
of the oil is 36° API.

PLAN OF
DEVELOPMENT -

Please note from the plat that three water injection wells
are being operated adjacent to the south line of the
Jamison lease. Also that Jamison wells 1 and 2 are
located 330 feet from the south line of the Jamison lease.

The plan is to drill two water injection wells on the Jamison
lease. Well No. 5 is to be located 1,325 feet south of the

north line and 1,315 feet west of the east line of Section 21. Well No. 6 is to be located 1,325 feet south of the north line and 5 feet west of the east line of Section 21. These two wells coupled with Knight wells 7 and 8 will enclose a 40-acre 5-spot around Jamison well No. 1. Knight wells 8 and 9 and Jamison No. 6 will enclose Jamison No. 2 in a 4-spot pattern. There is a porosity pinchout toward the north and east portion of the Jamison lease and it is felt the above two injection wells will satisfactorily flood the Jamison lease.

The two wells will be drilled with cable tools. Surface casing (8-5/8" OD) will be set at approximately 825 feet and cemented to the surface. This will protect all fresh water sands, including the Santa Rosa. The long casing string (4-1/2" OD) will be set just above the first oil sand in the Queen formation at an approximate depth of 3,400 feet.

We already have sufficient water at our Knight water plant to furnish water for the two wells to be drilled on the Jamison lease. The water is Rustler salt water encountered at a depth of 1,150 feet. If we are allowed to transport this water from our Knight lease to the Jamison lease, it will be used. If not, we plan to drill a fresh water well.

George L. Buckles Company

on the Jamison lease to supply the water for the two injection wells.

Initial injection rates are expected to be 300 barrels per well per day at a maximum of 1,000 psi surface pressure.

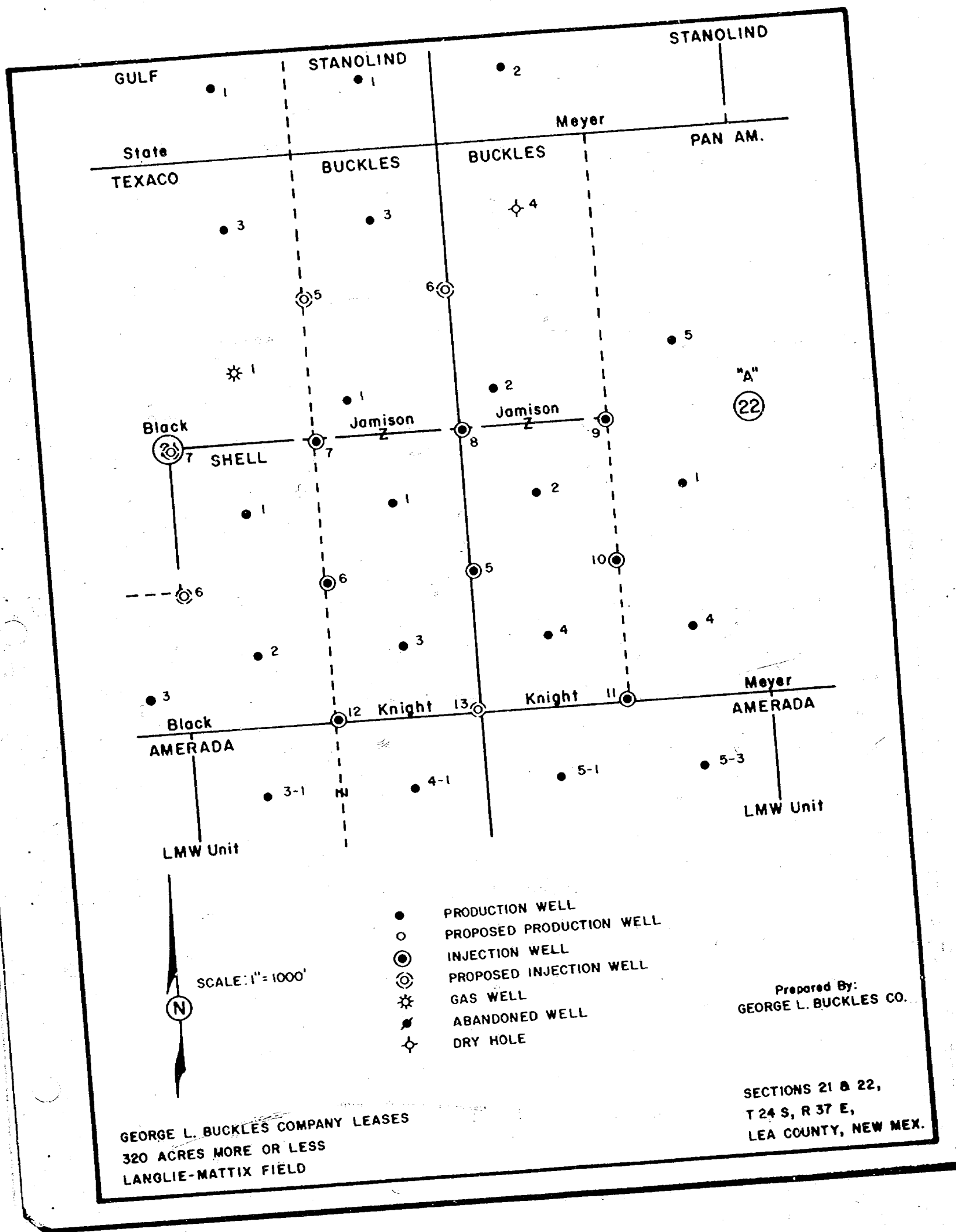
The present status of our Knight Waterflood (September 25, 1964) is as follows:

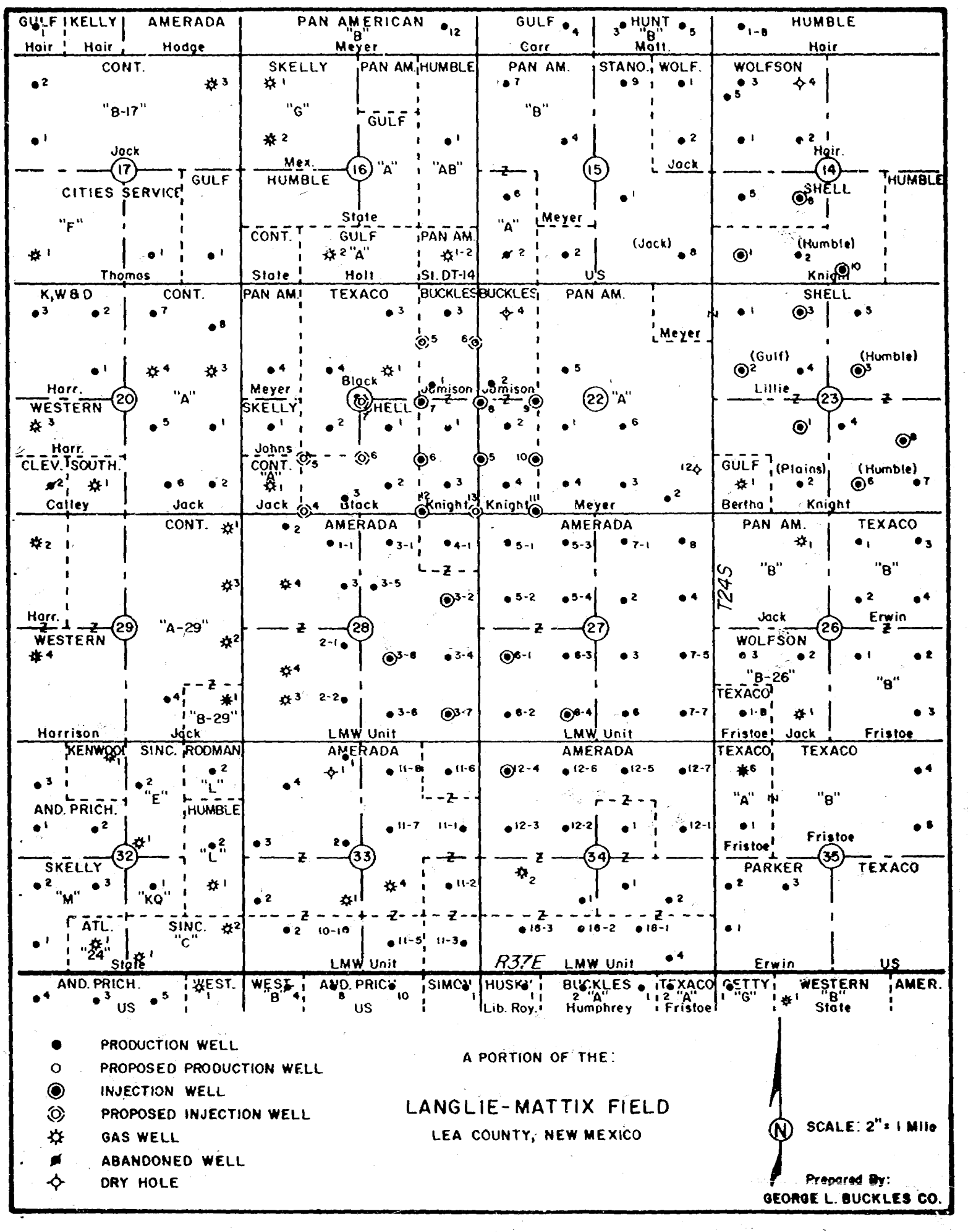
<u>Well</u>	<u>Current Daily Rate</u>	<u>Pressure</u>	<u>Accumulated Volume</u>
5	133	260	20,820
6	300	380	44,343
7	145	1,000	29,803
8	300	540	45,578
9	144	1,000	35,152
10	325	740	44,316
11	87	1,000	19,336
12	295	480	43,873
13	Drilling		

No flood response has been noted from water injection on the Knight lease and no water is being produced with the oil.

Because of the close spacing of Jamison wells 1 and 2 to the Knight lease line, it is requested that permit be granted as soon as possible to drill Jamison wells 5 and 6 to prevent a severe unbalanced flood condition on the Jamison lease.

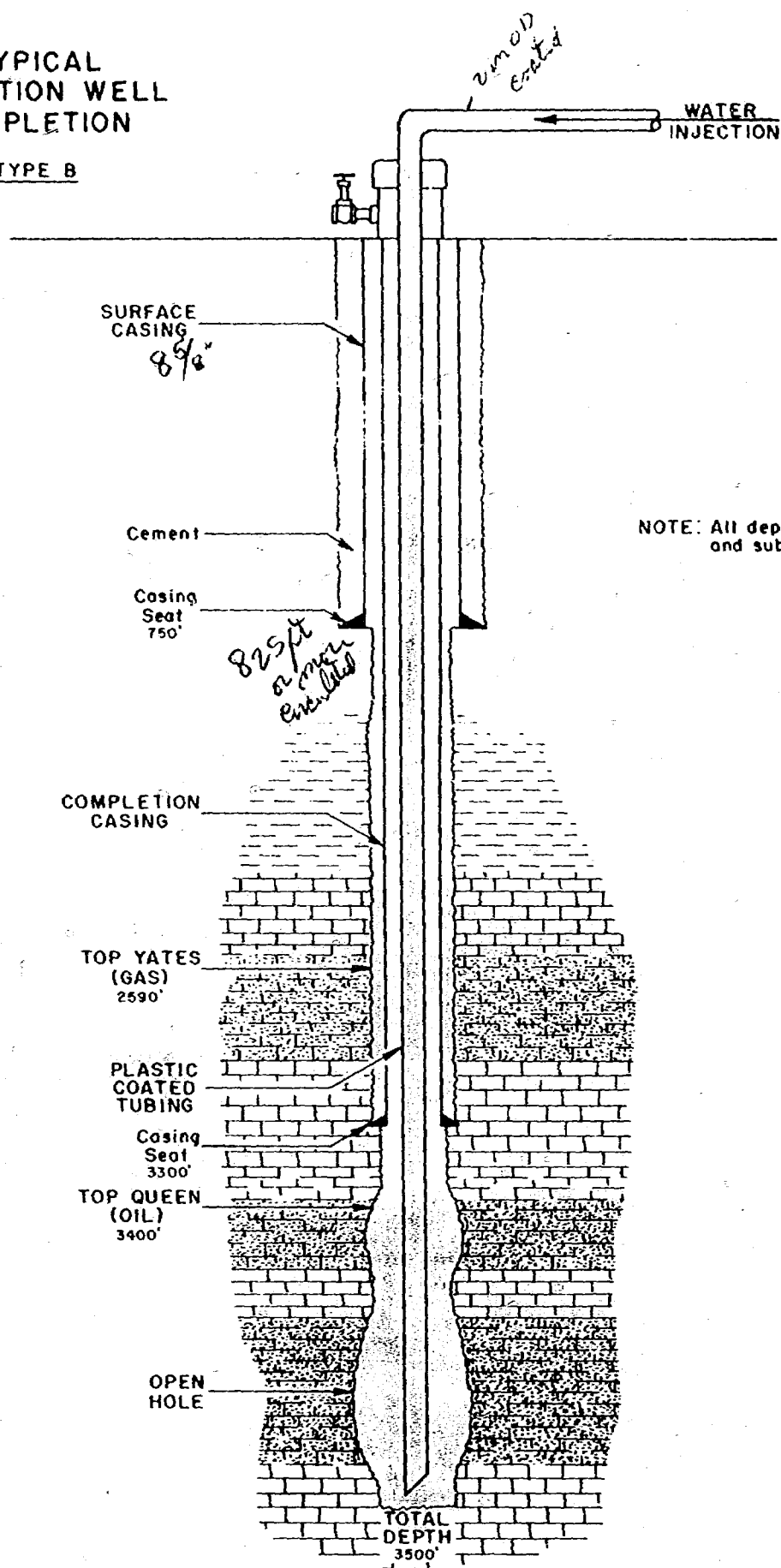
George L. Buckles Company





TYPICAL INJECTION WELL COMPLETION

TYPE B



NOTE: All depths approximated
and subject to change.