

FORM 1044: AQUA, INC. FOR THE
PURCHASE OF ORDER NO. R-5137,
NEW CANE, NEW ENGLAND

CASE NO.

5644

APPLICATION,
TRANSCRIPTS,
SMALL EXHIBITS,
ETC.

Mobil Oil Corporation

P. O. BOX 633
MIDLAND, TEXAS 79701



March 5, 1976

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

Attention: Mr. Joe D. Ramey

APPLICATION OF AQUA, INC.
FOR THE AMENDMENT OF
ORDER R-5137
LEA COUNTY, NEW MEXICO
CASE 5644, MARCH 10, 1976
DOCKET

Gentlemen:

Mobil Oil Corporation, as a participant in the Aqua Blinebry-Drinkard SWD System, recommends that the Commission approve the amendment of Order No. R-5137 to provide for injection pressures up to 1200 psi in Aqua's Well No. A-22, as requested in Case No. 5644 on the March 10, 1976 hearing docket.

The production from many wells in the Eunice Area depends upon the disposal capacity of the Aqua Blinebry-Drinkard SWD System. We believe that injection of salt water into Well No. A-22 at pressures up to 1200 psi is necessary and can be accomplished without harm to producing reservoirs by the proper operation and monitoring of the subject well.

Yours very truly,

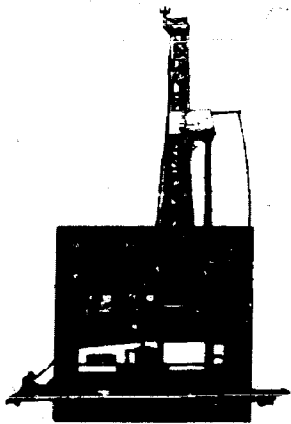
A handwritten signature in dark ink, appearing to read "L. A. Davis".

L. A. Davis
Area Operations Engineer

JHSerrey/gb

cc: New Mexico Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico 88240

Aqua, Inc.
P. O. Box 1978
Hobbs, New Mexico 88240



MORANCO

RECEIVED
OIL CONSERVATION COMM.
Santa Fe

P. O. BOX 1860 HOBBS, NEW MEXICO 88240 (505) 397-3511 (915) 563-0562

March 4, 1976

Case 5644

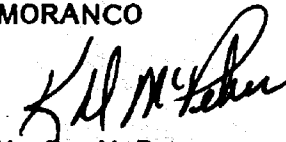
Mr. Joe D. Ramey
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Sir:

This letter is to indicate our support of Agua, Inc. in Case 5644,
scheduled March 10, 1976. We urge the Commission to approve
the injection pressure of 1200 psi.

Yours very truly,

MORANCO

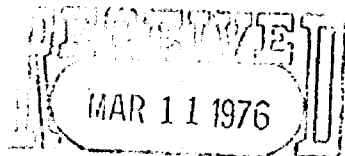

K. D. McPeters
Vice President

KDMC/d


The More Hole Per Dollar People!

Tenneco Oil
A Tenneco Company

Suite 1200
Lincoln Tower Building
Denver, Colorado 80203
(303) 292-9920



OIL CONSERVATION COMM.
Santa Fe

March 4, 1976

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

Attention: Mr. J. D. Ramey

RE: Application for Amendment
of Order No. R-5137
Case 5644

Gentlemen:

Tenneco Oil Company, as an interest owner in the Blinebry-Drinkard
SWD System, wishes to support the cause of the applicant, Agua, Inc.,
in Case 5644.

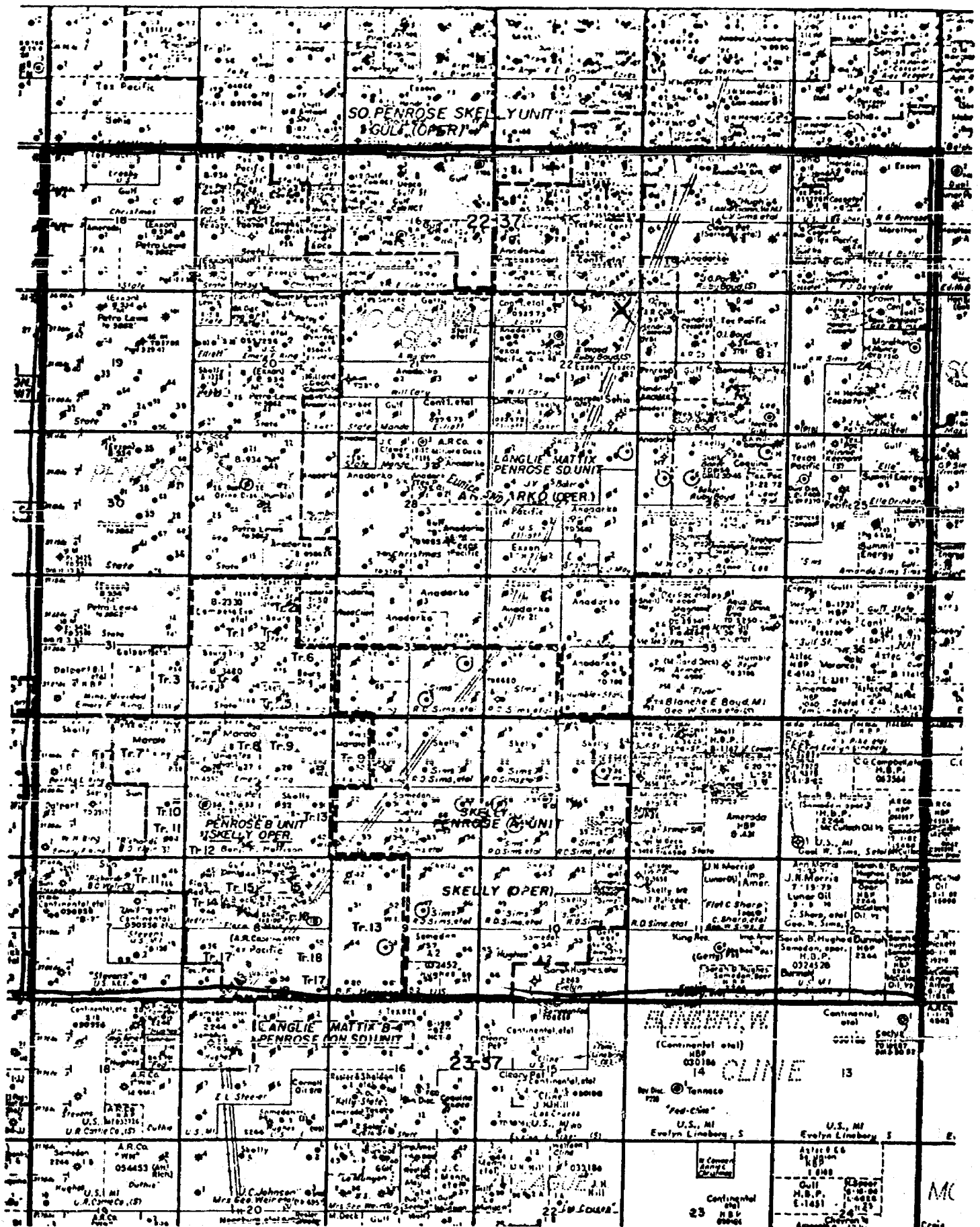
Yours very truly,

TENNECO OIL COMPANY

D. D. Myers
Division Production Manager

SJR/m

S OH-37E BEFORE THE
 74 CONSERVATION COMMISSION
 Santa Fe, New Mexico
 Case No.
 Submitted by
 Hearing Date



LEA COUNTY, NEW MEXICO

T-22-S R-37-E & T-23-S R-37-E
NOVEMBER 19, 1974

EXHIBIT "A"
CASE NO. 5377

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

Agua EXHIBIT NO. 10
CASE NO. 5644

Hearing Date 3/10/76

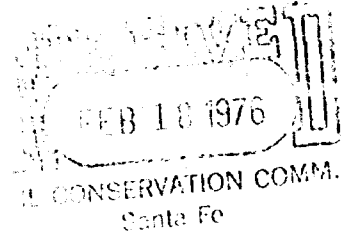
Case No. 5377
Submitted by [Signature]
Hearing Date [Signature]

AGUA, INC.

POST OFFICE BOX 1978
HOBBS, NEW MEXICO
88240

February 16, 1976

TELEPHONE: 505 393-6188



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

Attn: Joe D. Ramey,
Secretary-Director

Re: Order No. R-5137
Blinebry-Drinkard SWD Well No. A-22

Gentlemen:

Blinebry-Drinkard Salt Water Disposal Well No. A-22 was drilled to a Total Depth of 4965' and 7" casing was set at a depth of 3865' and cemented to the surface of the ground, with 250 sx. of cement to the surface. The Top of the San Andres formation was picked at 3800' (-437').

The open-hole interval (4965-3865) was initially treated w/10,000 gals. 15% HCl acid at 6-1/2 BPM at an average pressure of 2000 psi; ISIP 1200 psi and 45 min. 150 psi. The open-hole interval was re-treated w/10,000 15% acid at an average injection pressure of 1200 psi, ISIP 1000 psi, 15 minute 300 psi.

AGUA, INC., as Operator of the Blinebry-Drinkard Salt Water Disposal System, respectfully requests approval of the Secretary-Director to inject waste waters into Blinebry-Drinkard Salt Water Disposal Well No. A-22 at a surface injection pressure not to exceed 1,200 psi.

Yours very truly,

AGUA, INC.

W. G. Abbott
Manager

*called Jim Jennings
advised him admin.
approval cannot be
given. Consider this
as appl for reg?
yes. Will
set for
committee
W.G. 3/10/76
2/23/76
10:00 am*

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. 5644
Order No. R-5137-B

APPLICATION OF AGUA, INC., FOR
THE AMENDMENT OF ORDER NO. R-5137,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 10, 1975, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 3rd day of August, 1976, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That by Commission Order No. R-5137, dated December 17, 1975, the applicant, Agua, Inc., was authorized to dispose of produced salt water into the San Andres formation through the open-hole interval from approximately 4,000 feet to 5,000 feet in its Blinebry-Drinkard SWD System Well No. A-22, located 817 feet from the North line and 965 feet from the East line of Section 22, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That in order to ensure that the disposed water would remain confined to the San Andres formation and not migrate through fractures or otherwise into other formations, said Order No. R-5137 required that the aforesaid Well No. A-22 be equipped with a pop-off valve or acceptable substitute which would limit the wellhead injection pressure to no more than one hundred (100) psi.

(4) That the applicant herein seeks the amendment of said Order No. R-5137 to permit disposal into Well No. A-22 at a surface injection pressure not to exceed 1200 psi.

(5) That the applicant proposes to dispose of up to 12,000 barrels of produced salt water per day in the subject Well No. A-22.

-2-

Case No. 5644
Order No. R-5137-B

(6) That the subject well is located within an area where vertical formation fracturing is suspected to exist.

(7) That formation fracturing occurs as the result of large volumes of fluid being injected into the formation at high pressure.

(8) That disposal of large volumes of water at 1200 psi as sought by the applicant would likely tend to create vertical fractures in the formation or to enlarge existing fractures, if they already exist, thereby permitting the disposal water to migrate into other formations, possibly resulting in the loss of underground reserves, thereby causing waste, or in injury to offsetting leases or properties.

(9) That insofar as the Commission can now determine, a surface wellhead injection pressure of approximately 800 psi will not cause formation fracturing, and will not result in loss of underground reserves nor injury to offsetting leases or properties, nor otherwise cause waste or violate correlative rights.

(10) That the applicant's request for the amendment of Commission Order No. R-5137 to permit disposal of produced salt water in its Well No. A-22 at a surface injection pressure not to exceed 1200 psi should be denied, but said Order No. R-5137 should be amended to permit such disposal at surface injection pressures up to 800 psi, provided proper safeguards are taken that such pressure not be exceeded.

IT IS THEREFORE ORDERED:

(1) That the application of Agua, Inc., for the amendment of Commission Order No. R-5137 to permit disposal of produced salt water into the San Andres formation through the open-hole interval from approximately 4,000 feet to 5,000 feet in its Blinebry-Drinkard SWD System Well No. A-22, located 817 feet from the North line and 965 feet from the East line of Section 22, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, at a surface injection pressure not to exceed 1200 psi is hereby denied.

(2) That Order No. (2) of Commission Order No. R-5137 is hereby amended to read in its entirety as follows:

"(2) That the injection well or system shall be equipped with a pop-off valve or acceptable substitute which will limit the wellhead injection pressure on the injection well to no more than eight hundred (800) psi."

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

-3-
Case No. 5644
Order No. R-513/-B

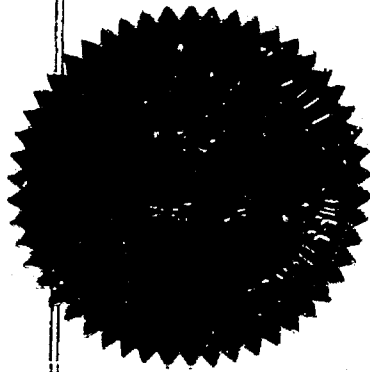
DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Phil R. Lucero
PHIL R. LUCERO, Chairman

Emery C. Arnold
EMERY C. ARNOLD, Member

Joe D. Ramey
JOE D. RAMEY, Member & Secretary



S E A L

dr/

NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARING

SANTA FE, NEW MEXICO

Hearing Date

MARCH 10, 1976

TIME: 9:00 A.M.

NAME	REPRESENTING	LOCATION
W.G. Abbott	AGUA, INC	Hobbs
John Jennings	Jerry Chisholm, Opp/P	Roswell
DAN KERNAGHAN	Anadarko	Houston
Rub Anderson	Anadarko	Eunice N.M.
Irby Bonnette	Anadarko	Houston, Tex.
John Kellahin	Kellahin & Co	Santa Fe
Les Clements	N.M.O.C.E.	Harlingen, 17M
A.E. Kenyon	John H. Hendrix Prod.	midland, Texas
R.L. Cassey, Jr	Anadarko	Houston, TX.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 10, 1976

COMMISSION HEARING

IN THE MATTER OF:

Application of Agua, Inc. for the
amendment of Order No. R-5137, Lea
County, New Mexico.

CASE
5644

BEFORE: Joe D. Ramey, Director
Phil Lucero, Member
Emery Arnold, Member

Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission: William F. Carr, Esq.
Legal Counsel for the Commission
State Land Office Building
Santa Fe, New Mexico

For the Applicant: James T. Jennings, Esq.
JENNINGS, CHRISTY & COPPLE
Attorneys at Law
1012 Security National Bank Bldg.
Roswell, New Mexico

For Anadarko Production Co.: W. Thomas Kellahin, Esq.
KELLAHIN & FOX
Attorneys at Law
500 Don Gaspar
Santa Fe, New Mexico

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General Court Reporting Service
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501
Phone (505) 982-9212

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1 MR. RAMEY: The hearing will come to order. We
2 will call Case 5644.

3 MR. CARR: Case 5644, application of Agua, Inc.
4 for the amendment of Order No. R-5137, Lea County, New Mexico.

5 MR. RAMEY: We ask for appearances at this time.

6 MR. JENNINGS: James T. Jennings of Jennings,
7 Christy and Copple for Agua.

8 MR. KELLAHIN: Tom Kellahin of Kellahin and Fox,
9 Santa Fe, appearing on behalf of Anadarko Production Company.

10 MR. CARR: William F. Carr appearing for the
11 Commission.

12 MR. RAMEY: Any other appearances? Would all of
13 the witnesses stand at this time and be sworn?

14 (THEREUPON, the witnesses were duly sworn.)

15 MR. RAMEY: Okay, I will ask Mr. Nutter to make a
16 short statement for the record.

17 MR. NUTTER: If the Commission please, my name is
18 Dan Nutter, Chief Engineer for the Oil Conservation Commission.

19 I would like to make a preliminary statement regard-
20 ing the application here today. Not so much the application
21 itself, but the area in which the application is concerned.

22 Originally on December 3, 1974, the Commission
23 called a hearing to consider why the continued injection of
24 water for secondary recovery or disposal purposes into any
25 formation from the surface of the ground down to and including

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1 the Drinkard formation, should be permitted in Sections 13
2 through 36 of Township 22 South, Range 37 East, and Sections 1
3 through 12 of Township 23 South, Range 37 East, all in Lea
4 County, New Mexico.

5 The reason the Commission called this hearing, there
6 had apparently been some water break through, from either
7 disposal wells or water flood injection wells into some of the
8 upper formations in that general area and the Commission
9 called the hearing to investigate what was causing the problem
10 and what could be done about the problem and what steps should
11 be taken.

12 On December 5th, 1974, the Commission entered
13 Order No. 4936 in which certain steps were taken to simplify
14 the -- well, I won't say it would simplify -- it was to try
15 to rectify the problems in the area. Among the steps that
16 were taken was the lessening of the salt water disposal programs
17 and the curtailment of water flood programs and a complex
18 system for surveying wells to see if there were leaks in the
19 wells, to see if the cement jobs and the casing programs were
20 adequate in the well and a continuing surveillance was to be
21 taken.

22 The case was again called for hearing in January of
23 1975 and Order No. R-5003 was entered in which certain wells
24 were ordered to be repaired and continued surveillance
25 mandated, as well as continued curtailment of injection for

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1 disposal and water flood purposes. There was a salt water
2 disposal well which later developed as a problem well in
3 Section 35 of Township 22 South, Range 37 East. This salt
4 water disposal well was suspected of being one of the wells
5 in the area which may be contributing to the problem and the
6 Commission ordered that well shut in. As a result of that
7 well being shut in, the Applicant applied for and received
8 approval to drill a substitute salt water disposal well in
9 the general area which was covered by the original cases
10 on the Order and that well is the subject of the hearing
11 today.

12 MR. RAMEY: Thank you, Mr. Nutter. Mr. Jennings,
13 you may proceed at this time.

14 MR. JENNINGS: Well, before proceeding I would just
15 like to clarify our status here. Order No. 5137 provides
16 that the Secretary-Director may grant administrative approval
17 to increase the pressure. Pursuant thereto on February 16th,
18 1976, Agua, the Applicant herein, did file such a request
19 and no action was taken on that request but the Commission
20 has set this matter down for a hearing for an application
21 as an application to amend Order No. 5137. Is that the
22 proper context we are here in?

23 MR. RAMEY: I would think so, yes, sir.

24 MR. JENNINGS: Before proceeding, could I make one
25 inquiry of, two inquiries of Mr. Nutter, to clarify the record?

1 First, has the remedial work that was outlined in
2 Order No., I believe it was 5003, entered in Case No. 5403
3 been completed?

4 MR. CARR: Dan, we plan to call Les Clements in to
5 give us a status report on this at a later time.

6 Mr. Jennings, we have a summary well by well that
7 we will introduce at that time.

8 MR. JENNINGS: Fine. One additional question. Was
9 any order or decision ever entered in Case 5403 after the
10 November 19, 1975 hearing?

11 MR. RAMEY: Not at this time.

12 MR. NUTTER: November of '75?

13 MR. JENNINGS: Yes, November 19, 1975.

14 MR. RAMEY: I think that is still under consideration.

15 MR. NUTTER: What was the case number?

16 MR. JENNINGS: 5403, the same case. It was
17 reopened, 5403 was reopened on November 19, 1975 and I took
18 additional testimony.

19 MR. RAMEY: I think you have that on your desk at
20 this time.

21 MR. NUTTER: The case was reopened, but I didn't
22 think it was that date but there has not been an order entered
23 in the most recent reopening of the case, no.

24 MR. JENNINGS: Is one contemplated?

25 MR. NUTTER: Yes.

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1 MR. JENNINGS: I think, Mr. Carr, you are going to
2 call some witnesses. Do you desire us to proceed or do you
3 wish to proceed with your witnesses?

4 MR. CARR: We can go in any order. Mr. Jennings,
5 all we are simply going to do is give a progress report of
6 the effort that has been made down there to comply with the
7 original Order 5003. We can go now if you would prefer, it
8 is very short.

9 MR. JENNINGS: Well, we will proceed.

10 MR. CARR: Fine.

11
12 W. G. ABBOTT

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

15
16 DIRECT EXAMINATION

17 BY MR. JENNINGS:

18 Q Would you state your name, place of residence and
19 occupation, please, sir?

20 A W. G. Abbott from Hobbs, New Mexico and I'm Manager
21 of Agua, Incorporated.

22 Q Mr. Abbott, did you appear before this Commission
23 in the original hearing on this well which was in Case No. 5592
24 on November 19, 1975 and testify?

25 A Yes, sir.

1 Q And have you testified on many previous occasions
2 before this Commission?

3 A Yes, sir.

4 MR. JENNINGS: Do you wish me to further qualify
5 Mr. Abbott?

6 MR. RAMEY: I don't think it's necessary, the
7 Commission is familiar with Mr. Abbott.

8 Q (Mr. Jennings continuing.) Mr. Abbott, you have
9 Mr. Nutter's statement concerning the history of why we are
10 here. Do you have any additional facts that you would like to
11 add from Agua's standpoint?

12 A Yes, sir. The most important thing I remembered
13 in Case 5377, that was the original case held December 3rd,
14 1974, was various testimony by the Commission, by Agua, by
15 operators of salt water disposals and also operators of
16 pressure units in the area. I remember too, an Anadarko man
17 was questioned as to if disposal water could be used in lieu
18 of this imported water that they were using for water flood
19 and they went into great detail that the water was compatible
20 and could be used, they ran tests. Of course, after that
21 hearing there was a change in their field manager and also
22 other changes in the Anadarko operation and after we pursued
23 this we were sort of stymied and we couldn't get together
24 with Anadarko at that time.

25 The next hearing, April 29th, 1975, Case 5403, the

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1 thing that --

2 Q Mr. Abbott, I believe that hearing was on January 22nd,
3 was it not? And the order came out, maybe I'm wrong,
4 excuse me.

5 A I don't know. It was the next case to do with this
6 thirty-six section problem area.

7 Q The hearing, Mr. Nutter just called my attention
8 to it, was January 22nd.

9 A January 22nd? The order was issued in April, is
10 that right, April 29th?

11 Q Right.

12 A In the findings for this case, it was specifically
13 stated that Agua could continue to dispose in their SWD Well
14 H-35. The only restriction, I believe there was a restrict-
15 ion of so many barrels a day, fifty-three hundred or fifty-five
16 hundred barrels a day but it specifically cited Agua's
17 continuing disposal.

18 The next hearing, of course, that really got the
19 attention of the Blinbry-Drinkard SWD System operated by
20 Agua, was the directive of August 22nd of the same year,
21 1975, that shut in H-35. In this directive, it was a letter
22 directive, that stated that there was communication between
23 the tubing and the casing in the well. Well, I hope there
24 is communication, there is no packer in the well and anything
25 put in the tubing will reflect in the casing. I believe they

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1 were ill-informed or misinformed by their field personnel in
2 that this was a pressure-injection well and with two triplex
3 pumps on it and at the time a pressure check was made of the
4 various casing strings, of course, the well was pumping and
5 the pressure gauges were pulsating. He interpreted this to
6 be a leak somewhere, I don't know exactly where, although
7 there is or was, five hundred pounds of pressure on the surface
8 casing in this well. The surface casing is set at eleven
9 hundred and eighty pounds and it is very common to have pressure
10 on the surface casing in this area. But the order, this
11 letter directive, ordered us to shut in the well.

12 Q What date was it to be shut in?

13 A The directive was issued the twenty-second of
14 August, 1975 and we had to shut the well in by September 26th,
15 1975.

16 Q What was it necessary for you to do between
17 August 22nd and September 26th?

18 A We had to dispose of the water in some fashion so
19 we had to lay a temporary line from our H-35 well to an
20 existing salt water disposal well, SWD C-2.

21 Referring to one of our exhibits, this meant
22 laying a temporary line up a so-called county road, up to
23 this point and then over to the SW C-2. This was very
24 difficult in that this paved so-called county road we found
25 out wasn't owned by the county, although they were maintaining

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1 it and we had to deal with the land owner to buy a right-of-
2 way to lay this temporary line in a bar ditch along side of
3 this road. We laid about six miles of six-inch plastic pipe
4 just barely under the ground. We covered it so it wouldn't
5 be affected by heat from the sun and we used the existing
6 triplex pumps at H-35 to kick this water up there.

7 It cost the System and the parties to the System,
8 in excess of a hundred thousand dollars to run that line. We
9 are still using the line. At the same time we had to go to
10 the Commission to get permission to open up some other zones
11 in this SWD C-2 through perforations in the seven-inch casing
12 from forty-two, thirty to forty-three, twenty and the
13 Commission issued their Order R-4495-A which stated that we
14 could use these perforations, plus the original open hole
15 in this well, until February 7th. That was four months after
16 the hearing and at the end of that time we would have to
17 blank off the perforations and just use the open hole.

18 This order was later amended so it now reads that
19 we can use those perforations until May 7th, 1976.

20 At the present time this well is taking four hundred
21 barrels per hour by gravity. The last check I had on it was
22 the day before yesterday and the twenty-four hour average
23 was four hundred and four barrels per hour.

24 It is necessary that we acidize this well frequently
25 to keep up this high injectivity.

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1 Q Mr. Abbott, a little more history, I don't think
2 that all the members of the Commission are familiar with this.
3 What function does Agua perform for the operators in the area
4 delineated by the map, that map.

5 A We gather the water from the partners in this agree-
6 ment and dispose of the salt water. This means that we are
7 connected to tank batteries that have at the present time
8 four hundred and forty-seven producing wells that we are
9 disposing of their salt water. This represents thirty-four
10 different operators.

11 Q Do you have any idea about the production of the
12 oil from those four hundred and forty-seven wells?

13 A I estimate the oil production represented by these
14 wells would produce about ten thousand barrels a day.

15 Q Mr. Abbott, was your, I believe it is your A-22
16 well, drilled pursuant to the order the Commission entered in
17 Order No. R-5137?

18 A Yes, sir, we can refer to Exhibit One.

19 Q You are now referring to what has been marked as
20 Exhibit One. Just tell us what that is and what it shows?

21 A This is a diagrammatic sketch of the well which
22 shows the way the well was drilled and completed. Nine-and-
23 five-eighths inch casing was set at three hundred and twenty-
24 one feet and cemented with two hundred and fifty sacks of
25 cement and this nine-and-five-eighths string was circulated,

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1 the cement was circulated to the surface, then the well was
2 drilled to a total depth of forty-nine, sixty-five and a
3 seven-inch casing was then set at thirty-eight, sixty-five
4 with sixteen hundred sacks of cement. This cement actually
5 circulated to the surface in excess of a hundred sacks, it
6 probably circulated close to two hundred sacks. Then five-and-
7 a-half inch tubing string was run and swung at the thirty-eight,
8 seventy-five, so our injection interval is from thirty-eight,
9 sixty-five to forty-nine, sixty-five.

10 Q Mr. Abbott, referring to the casing program, as I
11 understand it then the seven-inch is cemented from the surface
12 to the bottom of the casing which is thirty-eight hundred
13 and sixty-five feet?

14 A Yes, sir.

15 Q Is there any possibility of fluid going up the
16 annulus outside of that casing?

17 A I doubt it, no.

18 Q And again that nine-and-five-eighths is cemented
19 from three hundred and twenty-one feet to the surface?

20 A Yes, sir.

21 Q Referring to what has been marked as Exhibit Number
22 Two, would you refer to that and tell the Commission what
23 that is? I might add that that has been marked exhibit on
24 page two, so you might not find it.

25 A Yes, Exhibit Two is the Commission's Form C-105, the

1 completion form on this well. All the information, as I
2 previously stated, is on here and also the treatment, the
3 completion treatment is listed.

4 We acidized originally when we drilled the well. We
5 acidized down the drill pipe to the bottom of the hole and
6 up to the -- over the entire open-hole section. Then we
7 re-acidized at the top of the hole, through the tubing and
8 we washed the acid back and forth across the best zones of
9 porosity in the well. So, we have acidized with a total of
10 twenty thousand gallons of fifteen percent hydrochloric acid.

11 Q Was this well logged, Mr. Abbott?

12 A Yes, sir.

13 Q Please refer to what has been marked Exhibit A and
14 tell what it is and what it shows?

15 A Exhibit Three?

16 Q Three, yes.

17 A This is a log of the well, a sidewall neutron
18 porosity log. It shows -- we've marked the tops on the wells
19 on the formations in this well on the log but it is very
20 interesting that this log shows that there is excess in some
21 sections in the San Andres of over twenty percent porosity
22 and quite a lot over ten percent so it is a pretty good
23 disposal well but it just takes a little pressure to get the
24 water away from the wellbore.

25 Q Did you run a bottom-hole pressure survey?

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1 A. Yes, sir.

2 Q. Is that what has been marked as Exhibit Four?

3 A. Yes. Exhibit Four shows the bottom-hole pressure
4 survey which we ran approximately four days after we finished
5 our last acid job on the well. At that time the well -- we
6 had flushed the acid out of the tubing and casing with fresh
7 water and the well had been shut in. When we ran the bottom-
8 hole pressure the actual tubing on the well was on a vacuum
9 so it showed that the water level had dropped by being shut
10 in and it shows that the static fluid level was at five
11 hundred and seventy-five feet. Now, you will have to realize
12 that this was fresh water in the well. Had it been brine
13 we would have had a lower fluid level, although we would have
14 had the same bottom-hole pressure. The bottom-hole pressure
15 gauge was run to approximately the bottom of the tubing. We
16 didn't go into the open hole.

17 Q. All right.

18 A. We ran this to show us that the San Andres in that
19 area wasn't under pressure, it actually had a fluid level
20 down at five hundred and seventy-five feet.

21 Q. Mr. Abbott, you were actually in charge of paying
22 for this well, were you not?

23 A. Yes, sir.

24 Q. How much has Agua, on behalf of the operators, spent
25 toward the drilling and completion of this well to date?

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1 A. Well, at the present time we have spent on the well,
2 a hundred and fifty-seven thousand, three hundred and ninety-
3 four dollars.

4 Q. How much do you anticipate spending on the well
5 itself in the immediate future?

6 A. Well, we expect to -- our original AFE was a
7 hundred and sixty-three thousand, three hundred and ninety,
8 so we will spend some more money completing it.

9 Q. How much do you anticipate spending to complete the
10 well and the system and connect the system to it?

11 A. Our original AFE was two hundred and sixty-nine
12 thousand and twenty dollars. At the present time we have
13 spent a total of a hundred and seventy-six thousand, five
14 hundred and eighty-two dollars.

15 Q. Do you anticipate spending the rest of it or more?

16 A. Yes, sir. Since this original order was issued
17 limiting us to the hundred pounds of pressure we haven't
18 proceeded with installing the lines or terminal facilities.

19 Q. When you completed the well what did you determine
20 about the possibility or probability of injecting sufficient
21 water to make the well feasible with a hundred pound pressure
22 limitation?

23 A. Well, when the order was issued we were worried
24 about this hundred pound limitations, so we did call a meeting
25 of the various parties and discuss this before we proceeded to

1 drill the well.

2 Q Well, is it now possible for you to inject economic
3 amounts of water into this well at a hundred pound pressure?

4 A No, sir, it isn't.

5 Q What pressure do you feel it would require to enable
6 you to dispose of the water that must be disposed of?

7 A We recommend a limit of twelve hundred psi wellhead
8 pressure. It may take less than that but I would hate to
9 guess.

10 Q To your knowledge, Mr. Abbott, has the Commission
11 imposed any similar restrictions on any other disposal wells
12 in southeastern New Mexico?

13 A Not that I know of, no, sir.

14 Q Has there been any requirement for pop-off valves
15 on any of these wells?

16 A No, sir.

17 Q Do you know of any restrictions as to pressure on
18 any injection wells?

19 A No, sir, I don't know of any restrictions on
20 pressure.

21 Q Mr. Abbott, I believe you testified that this water
22 is being disposed into the San Andres formation?

23 A Yes, sir.

24 Q Please refer to what has been marked as Exhibit
25 Five and show what that shows in connection with this well

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1 with relation to the structure?

2 A Exhibit Five is a structure map drawn on the top
3 of the San Andres in this immediate area. Our SWD A-22 is
4 marked by a red dot in the Unit letter A of Section 22,
5 22, 37. It shows that this well is located down structure
6 or down the flank of a small structure. To my knowledge
7 there is no San Andres producing wells in the immediate area.
8 A couple of miles away, up north in Section 2 and the north
9 side of Section 11 there are some producing San Andres wells
10 but they are located higher on the structure.

11 Q Was this considerably lower on the structure than
12 the producing wells?

13 A Yes, sir.

14 Q Do you know, are there any other injection wells or
15 salt water disposal wells in the area?

16 A Yes, I understand that Anadarko has a disposal well
17 in the area.

18 Q And is that well shown on this?

19 A No, I don't believe it is shown on this.

20 Q Do you know where it is?

21 A I have it listed on another exhibit, I believe.

22 Q Referring to what has been marked as Exhibit, I
23 believe Six, which is the map on the wall, do you have any
24 further comments or explanations concerning this exhibit?

25 A No, just to point out there are approximately a

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1 hundred miles of gathering lines in this Elinebry-Drinkard
2 salt water disposal system. All but one of the gathering
3 lines is a gravity line. It is necessary to pump a little
4 water up from the south to the location at the SWD H-35.

5 Q Are there any other systems operating in this
6 immediate area?

7 A Not that I know of, unless you could consider the
8 Anadarko disposal system.

9 Q In the event that it is necessary to dispose of
10 water elsewhere than in the area served by your system, where
11 would the water have to be taken?

12 A I don't know. It would have to be taken out of
13 the area. Of course, when you take it away from the producing
14 wells, you have no history on the formations, so I have no
15 idea which direction you would go away from this area.

16 Q Before drilling the present well did you make a
17 study to determine the most likely place to drill the well?

18 A Yes, we made a study and picked an area that we
19 thought would be the best spot to drill a disposal well,
20 a spot that reflected permeability and porosity and also
21 lost circulation when the wells were drilled and also it
22 had to be located on top of the ground so that our salt water
23 gathering lines could gravity to that location.

24 Q Mr. Abbott, have you had an occasion to review the
25 salt water disposal systems and the production therefrom in

1 southeastern New Mexico for the years 1974 and 1975?

2 A. Yes.

3 Q Are these generally represented by what has been
4 marked as Exhibits Eight-A and Eight-B?

5 A. Yes, Eight-B is a summary of disposal and also
6 injection wells in 1975 and Eight-A is a comparable listing
7 of wells in 1974.

8 Q Basically what does this show you?

9 A. Well, it is shown on our Exhibit Seven. We have
10 sort of consolidated the tabulation. Of course, I have
11 discussed the Agua SWD H-35. In November of '74 we were
12 disposing at seventeen hundred and fifteen pounds, in
13 December of '75 it was shut in. Anadarko's salt water
14 disposal well in the San Andres, their Walden No. 4, in 1974
15 had twelve hundred pounds injection pressure and in December of
16 '75 had twelve hundred. The Armour-Gulf State No. 1 disposal
17 well, also in the San Andres --

18 Q Excuse me, let me interrupt you for the Commission.
19 These figures are cumulative as are pointed out on Exhibit
20 Seven, is that right?

21 A. Yes.

22 Q You are referring to Exhibit Seven when you are
23 testifying now?

24 A. Yes.

25 Q All right.

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1 A. Getting to the Armour well, in '74 that had
2 thirteen hundred pounds and in December of '75 it had twelve
3 hundred pounds. Then go to the Anadarko water flood, Langlie-
4 Mattix Penrose Queen Unit, a forty-seven well average, in
5 November of '74 the average pressures were eighteen, oh, three
6 These were pressures that were turned in to the Commission
7 and in December of '75, that is the same forty-seven well
8 average, is fifteen hundred and eighty-two psi. These wells
9 are injection wells into the Queen formation.

10 Petro-Lewis the same way, a twenty-three well
11 average. In '74 their average pressure was sixteen, fifty-
12 nine and in '75 it was sixteen, seventy.

13 Skelly Penrose A, eighteen hundred and seventeen,
14 forty-three. Skelly Penrose B, seventeen, fifty and seventeen,
15 oh, six.

16 And there was one well, I don't know how, it's an
17 injection well, Anadarko's Coal No. 3 showed a thousand pounds
18 but in '75 it wasn't available. It may be shut in, I don't
19 know. And also their Walden Well No. 6 wasn't available in
20 '74 but shows a thousand pounds in '75.

21 Continental has an injection well, Elliott A-18,
22 in November it showed three hundred and twenty pounds and
23 in December fourteen hundred pounds.

24 Q. Are all of these wells in what has been designated
25 as a problem area?

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1 A. Yes, sir.

2 Q. Are they basically in this area shown by this map?

3 A. Yeah, I don't think it is delineated on the map but
4 it is a thirty-six section area.

5 Q. Mr. Abbott, you might put this map which is
6 Commission Exhibit A in Case 5377, the original case and I
7 believe it delineates the problem area. You might put this
8 on the wall so you could refer to it for the Commission.

9 A. This problem area is outlined in red on the map
10 furnished by the Commission. It is Exhibit A in Case 5377.

11 Q. Would you, maybe this would help so you can get
12 a little closer to it. I don't know if the Commission can
13 see it or not.

14 Would you point out your proposed well, or the
15 well that you have completed in Section 22?

16 A. Well, the well is up here in this area, Unit, letter
17 A of Section 22.

18 Q. Then where is the Anadarko well?

19 A. The Walden No. 4 Well, I don't know exactly where
20 it is but it's --

21 Q. What Section is it in?

22 A. It's in Section 15, Township 22 South, Range 37
23 East.

24 MR. NUTTER: Unit letter K.

25 A. Unit letter K, right up here in this area. It looks

1 like about three-quarters of a mile away from our SWD A-22.

2 Q It is in the section immediately north, 15 is
3 immediately north of 22?

4 A Yes, sir.

5 MR. JENNINGS: With Mr. Nutter's permission we
6 would like to mark that map as Exhibit Ten and ask permission
7 at a later date to furnish the Commission a copy of it.

8 MR. RAMEY: All right.

9 Q (Mr. Jennings continuing.) Do you have any more
10 comments about the injection and disposal wells in the area,
11 Mr. Abbott?

12 A No. I just want to point out that the injection
13 pressures of wells being used to waterflood the Queen look
14 like they are excessively high. Also I want to point out
15 that most of the break through that I have understood in
16 the area has occurred above the Queen and it seems to be the
17 fracturing and water migrating across the salt section, the
18 salt section in this area.

19 Q Mr. Abbott, have you made or caused to be made,
20 a survey of the casing and cementing programs of all wells
21 within one mile of the Agua A-22 disposal well?

22 A Yes, sir, we did a --

23 Q Was that been tabulated on what has been marked as
24 Exhibit Nine?

25 A That's right.

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1 Q Would you please refer to that and tell about the
2 tabulation that you made?

3 A This tabulation was made from Conservation Commission
4 records made available in the Hobbs office and all of the wells
5 in a radius of one mile from our SWD A-22 are listed here,
6 showing the location, showing the pipe in the wells, also the
7 cementing program and the total depth, and the plug-back
8 depth.

9 Q Generally does it show that there are any apparent
10 problem wells in the area?

11 A I have looked it over carefully and I haven't found
12 any problem wells. Most of the wells that penetrated the
13 San Andres formation are equipped properly and are cemented
14 properly. Now, some of them have been worked on recently due
15 to Commission orders.

16 Q To give us a specific example, would you refer to
17 the first wells surveyed there and show generally what it
18 shows about the wells and the casing and cementing programs?

19 A Well, the Amerada-Hess Corporation No. 1 Walden
20 is located in Unit letter K of 15, Township 22 South, Range
21 37 East. The thirteen-and-three-eighths inch casing was set
22 at a hundred and seventy feet with two hundred and twenty
23 sacks of cement. Then there is an eighth-and-five-eighths
24 inch casing set at twenty-seven hundred and fifty feet with
25 a thousand sacks of cement. The five-and-a-half inch is set

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1 at seventy-eight, seventy, which is also a total depth, with
2 six hundred sacks, so it looks like they are adequately
3 protected in that area.

4 Q Mr. Abbott, in your opinion would the injection of
5 water at the pressure of twelve hundred pounds per square
6 inch in your H-32 well affect any of the wells listed on what
7 has been marked as Exhibit A?

8 A In our A-22 well?

9 Q Yes.

10 A No, sir, I don't believe they will affect these
11 wells. What you have to realize on an injection well, the
12 pressure reflected at the surface is, of course, the pressure
13 of the wellbore, and referring to the log of our well and
14 the history of the area, I believe the pressure will
15 dissipate rapidly when it gets away from this disposal well,
16 and it will approach the static bottom-hole pressure in the
17 San Andres reservoir.

18 Q Do you feel that the disposition of the water in
19 this well is in the interest of conservation and will prevent
20 waste?

21 A Yes, sir.

22 Q Do you feel that it will in any way impair the
23 correlative rights of any of the operators in the area or
24 elsewhere?

25 A No, sir.

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1 MR. JENNINGS: Pass the witness.

2 MR. RAMEY: Any questions of the witness?

3 MR. KELLAHIN: If the Commission please.

4 MR. RAMEY: Mr. Kellahin.

5 MR. KELLAHIN: Before beginning my cross examination
6 of Mr. Abbott, I would like the Commission to incorporate
7 the record of Case 5592. That was the hearing before the
8 examiner on November 19, 1975 which resulted in Order No.
9 R-5137 and that authorized this particular disposal well. I
10 would like you to take administrative notice of the testimony
11 and record in that case and incorporate it into this case.

12 MR. RAMEY: Any objection, Mr. Jennings?

13 MR. JENNINGS: No, sir.

14 MR. RAMEY: All right, Mr. Kellahin.

15
16 CROSS EXAMINATION

17 BY MR. KELLAHIN:

18 Q Mr. Abbott, what is the volume of water per day
19 currently being disposed of in the C-2 well?

20 A At the present time we are disposing of approximately
21 four hundred barrels an hour, that's a twenty-four hour
22 average. This is higher than the produced water in the area
23 because for the last past week and a half we are bleeding back
24 our SWD H-35 and disposing of that water. Normally it would
25 run around three hundred and fifty barrels an hour.

1 Q And somewhere in the neighborhood of nine thousand
2 to ninety-five hundred barrels of water a day?

3 A Yes, sir.

4 Q The A-22 Well, if I understand you correctly, will
5 be used to replace the volume currently disposed of in the
6 C-2 Well?

7 A No, we will continue to use the C-2 Well, so the
8 volume of water that will be disposed of in the SWD A-22 will
9 be approximately two hundred barrels an hour.

10 Q What is the maximum volume of barrels of water per
11 day that you can inject in your subject disposal well at a
12 surface pressure of twelve hundred pounds per square inch?

13 A I don't know exactly, but during the last acid
14 job in a pumping test we did inject at the rate of nine
15 barrels per minute at twelve hundred pounds.

16 Q Nine barrels per minute would turn out to be how
17 many barrels of water a day?

18 A I don't know. It would be nine times sixty, times
19 twenty-four hours.

20 Q It would be about twelve thousand barrels?

21 A Right. At this time we wouldn't inject that volume
22 steadily.

23 Q Do you anticipate the need of ever having to inject
24 that twelve thousand barrels of water per day?

25 A I don't know, it would be the result of the water

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1 increasing in that area.

2 Q If the Commission approves your requested applica-
3 tion for twelve hundred pounds per square inch at the surface,
4 then you would be authorized if your need should require it,
5 to dispose of up to twelve thousand barrels of water per day?

6 A Yes, sir.

7 Q All right, in your testimony on November 19th before
8 the examiner of the Commission, in fact you so testified to
9 that effect, did you not, you said that you had applied for
10 administrative approval for approximately twelve thousand
11 barrels of water per day and that at the present time you
12 anticipated your needs at about forty-eight hundred barrels
13 of water per day?

14 A Yes, sir.

15 Q And are those still your current needs?

16 A As far as I know, yes.

17 Q So you have every reason to expect that you would
18 need to dispose of some twelve thousand barrels of water per
19 day in the future?

20 A Sometime in the future, maybe five or ten years.

21 Q Will your A-22 Well take any water on vacuum?

22 A Yes, I don't know exactly what. It would be a
23 small rate.

24 Q How much is a small rate?

25 A Oh, I would say ten barrels an hour.

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1 increasing in that area.

2 Q If the Commission approves your requested applica-
3 tion for twelve hundred pounds per square inch at the surface,
4 then you would be authorized if your need should require it,
5 to dispose of up to twelve thousand barrels of water per day?

6 A Yes, sir.

7 Q All right, in your testimony on November 19th before
8 the examiner of the Commission, in fact you so testified to
9 that effect, did you not, you said that you had applied for
10 administrative approval for approximately twelve thousand
11 barrels of water per day and that at the present time you
12 anticipated your needs at about forty-eight hundred barrels
13 of water per day?

14 A Yes, sir.

15 Q And are those still your current needs?

16 A As far as I know, yes.

17 Q So you have every reason to expect that you would
18 need to dispose of some twelve thousand barrels of water per
19 day in the future?

20 A Sometime in the future, maybe five or ten years.

21 Q Will your A-22 Well take any water on vacuum?

22 A Yes, I don't know exactly what. It would be a
23 small rate.

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25 A Oh, I would say ten barrels an hour.

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1 Q When you drilled this well you had every reason
2 to believe that it would in fact take water on gravity flow?

3 A Yeah, we hoped it would.

4 Q And that was your testimony before the Examiner on
5 November 19th, 1975, you testified to the effect that, "We
6 think this well will make a good disposal well and take
7 water on gravity"?

8 A Yeah, I qualified my answers pretty well.

9 Q Okay. Subsequent to the testimony on November 19th
10 and the time you commenced the A-22 Well, what was the date
11 you commenced drilling the A-22?

12 A January 26, 1976.

13 Q Mr. Jennings asked you on direct examination awhile
14 ago, if prior to drilling this well on January 26th, 1976,
15 had you made a study of the area to determine the most feasible
16 location for your disposal well and your answer was, "yes"?

17 A Yes.

18 Q Subsequent to your testimony on November 19th,
19 1975 and prior to the commencing of the drilling of the well
20 in January, what studies, if any, did you make to determine
21 other alternative sites other than the A-22 site?

22 A We looked over the entire area that it would be
23 practical to transmit our water from the gathering lines, so
24 it ended up in, I believe it was a four or six section area
25 that we concentrated on.

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1 Q As of the hearing on November 19th, you had determined
2 in your own mind that the site for the A-22 was in fact the
3 best site?

4 A Yes, sir.

5 Q Why then after the nineteenth of November did you
6 make additional studies?

7 A I don't know if we made additional studies after
8 that. If I testified at the hearing for the A-22 that we
9 had made the studies that was when we made the studies and
10 not after the hearing and before we drilled the well.

11 Q In the record of the hearing on November 19th I
12 posed the question to you: "Instead of injecting water at
13 your proposed location in an area of some concern, what
14 alternatives have you examined to give you a different
15 disposal area other than this particular site?" And your
16 answer: "We haven't at the present time looked at any other
17 area in that this hearing concerning this area will be
18 continued until today." So, I gather from your answer on
19 November 19th that you had not considered any other area than
20 the A-22 site, then you tell me that subsequent to that date
21 you made no other studies?

22 A I want to clarify our A-22 site. I consider it the
23 location to drill a well. Now, any other areas I interpret
24 to be outside of the practical area for disposal of this
25 Blinbry-Drinkard SWD System.

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1 Q Mr. Abbott, have you made a study of and have you
2 determined what the fracture pressure is in the area of your
3 disposal well?

4 A No, sir, we have not.

5 Q You have not. In your opinion have you fractured
6 the San Andres formation?

7 A No, sir.

8 Q What treatment have you made of that well?

9 A Twenty thousand gallons of fifteen percent acid.

10 Q Have you made a calculation of the acidizing treat-
11 ment and pressure to determine whether or not that fractured
12 the San Andres formation?

13 A No, sir, but knowing the pressures that we acidize
14 with, I don't think we fractured the formation.

15 Q You testified awhile ago on direct examination that
16 Anadarko in their waterflood project had some forty-seven
17 injection wells, is that correct?

18 A Yeah, that was the forty-seven wells that we used
19 in comparing pressures in the November of '74 and December
20 of '75.

21 Q Do you know what the total volume per day of
22 injection water is for the entire Anadarko flood?

23 A No, sir, I don't.

24 Q You testified on your direct examination that you
25 did not believe that injection of water in the A-22, up to a

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1 pressure of twelve hundred pounds per square inch at the
2 surface would have any adverse effect on the remedial work
3 done in the offsetting wells, is that correct?

4 A. No, sir, if the remedial work is done properly it
5 shouldn't be adverse to these wells.

6 Q. I show you what has been introduced at the hearing
7 on November 19th as Anadarko Exhibit Number One. It has
8 indicated on it in red those wells requiring remedial work in
9 an area of one mile from your disposal well on your Exhibit
10 Number Eight, I believe it was, that you introduced today.
11 In compiling Exhibit Number Eight, have you taken into
12 consideration all of the wells as indicated on Anadarko's
13 Exhibit Number One? I'm sorry it is Exhibit Number Nine.

14 A. Yes, we have looked at all of those wells in that
15 area that the information has been submitted to the Hobbs
16 Office of the Conservation Commission.

17 Q. Based upon your studies and opinions, you are
18 absolutely confident that the use of this disposal well as
19 you propose will not do damage to the remedial work in these
20 offsetting wells?

21 A. No, sir.

22 Q. Are you willing to indemnify Anadarko or any other
23 offsetting operators in the event that further remedial work
24 is required?

25 MR. JENNINGS: I would answer that, no.

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1 Q (Mr. Kellahin continuing.) I believe you testified
2 under direct examination, Mr. Abbott, about the structural
3 relationship of the A-22 well to the producing wells in the
4 Anadarko Unit, would you tell me again what your testimony
5 was?

6 A I testified that we had a structure map drawn on
7 the top of the San Andres and I was trying to show in this
8 exhibit that the location of the A-22 well was located down
9 structure from any producing wells in the San Andres formation.
10 I didn't refer to the Queen formation.

11 Q Can you locate for us or do you know which wells
12 in this area that have been drilled or produced at a depth
13 lower than the A-22, regardless of whether or not they are
14 still producing?

15 A No, it would show on our list of wells, it would
16 show on our Exhibit Number Nine.

17 Q Are there any other zones in your disposal well,
18 other than the San Andres, that could be used for the disposal
19 of water?

20 A No, sir.

21 MR. KELLAHIN: Thank you, Commissioner, we have
22 no further questions.

23 MR. RAMEY: Any other questions of the witness?

24 CROSS EXAMINATION

25 BY MR. RAMEY:

1 Q Mr. Abbott, you testified that you thought the
2 pressure would dissipate rapidly when you inject water into
3 the San Andres?

4 A Yes, sir, in this A-22 well.

5 Q What is the pressure presently in your H-35?

6 A At the present time there is nine hundred pounds on
7 the tubing.

8 Q Is that flowing pressure?

9 A No, the actual flowing pressure is about eight,
10 seventy-five.

11 Q And this well has been shut in since September of
12 '75?

13 A Yes, sir.

14 Q It doesn't dissipate too rapidly in that area then?

15 A No, sir. We consider the location of this A-22
16 to be a very much better location.

17 Q Do you have any idea, I notice on this exhibit that
18 Mr. Kellahin referred you to awhile ago, there are three
19 wells on the same one hundred and sixty acre tract that were
20 listed as problem wells?

21 A Which wells are they?

22 Q The Amerada, it looks like E Wood wells.

23 A All right.

24 Q I assume that those wells have probably been
25 perforated and squeezed at this time?

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1 A. Most of them have. Wood No. 5, for instance, has
2 been perforated, two holes at thirty-eight hundred feet and
3 squeezed with three hundred and seventy-five feet and --

4 Q With three hundred and seventy-five sacks?

5 A. With three hundred and seventy-five sacks and then
6 two holes were perforated at thirty-four, fifty and squeezed
7 with two hundred and fifty sacks in the top of the cement in
8 the eight-and-five-eighths inch pipe at twenty-four, thirty.

9 Q Do you know what squeezed pressure they are?

10 A. No, sir.

11 Q Do you think the squeezed pressure was ample to
12 overcome any pressures that might be encountered by your
13 injection water in this A-22?

14 A. I believe the well used in excess of six hundred
15 sacks from thirty-eight hundred feet on up above thirty-four,
16 fifty, so it should have solid cement up to twenty-four,
17 thirty.

18 MR. RAMEY: Any other questions of the witness?
19 Mr. Arnold?

20

21

CROSS EXAMINATION

22 BY MR. ARNOLD:

23 Q Mr. Abbott, you said the A-22 well would take
24 ten barrels an hour on vacuum?

25 A. I imagine. I'm using experience from that, but not

1 much more than that.

2 Q At what point do you start getting a big pressure
3 build up when you are pumping into it, at what rate?

4 A I don't remember the pressures we used but it was
5 pretty immediate we would start getting the pressures when
6 we were pumping into it.

7 Q This was just due to the lack of permeability in
8 the section you were pumping into?

9 A Yes, I think it is locally around the wellbore.
10 As soon as you shut the pumps down the pressure will start
11 dropping.

12 Q That is what you base your opinion on that the
13 pressure would dissipate?

14 A Yes.

15 MR. ARNOLD: That's all.

16 MR. RAMEY: Any other questions? The witness may
17 be excused.

18 MR. JENNINGS: I have a couple on redirect.

19

20 REDIRECT EXAMINATION

21 BY MR. JENNINGS:

22 Q Mr. Abbott, I believe you testified that you con-
23 templated at sometime it would be necessary to dispose of
24 twelve thousand barrels per day?

25 A It may be. The history of this area is that the

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1 water is increasing. I remember I did turn in a previous
2 exhibit which shows the increase in the water disposed in our
3 system.

4 Q Do you have more than one well in the area?

5 A Yes, we have a total of three disposal wells now,
6 with one shut in.

7 Q If it is necessary to dispose of as much as twelve
8 thousand barrels, do you contemplate using these other wells?

9 A We contemplate using the other wells and possibly
10 drilling more disposal wells or recompleting disposal wells.

11 Q You spoke of the H-35 well, after the well was shut
12 in in August did you at a later date test the well to see if
13 there was in fact communication?

14 A Yes, sir, after being shut in, we ran a radioactive
15 tracer survey. This well was shut in by order, I think it was
16 the nineteenth of September of '75 and the next month we did
17 run a radioactive tracer survey and a temperature survey and
18 it showed that ninety percent of the water being injected in
19 the well was going down the hole from the bottom of the
20 seven-inch casing. Ten percent was shown going out immediately
21 at the casing shoe. There was no evidence of any water coming
22 up behind the seven-inch pipe.

23 Q Do you hope eventually this well too will be available
24 for disposal purposes?

25 A For limited disposal, yes.

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1 Q Did you testify or is it a fact that the A-2 well
 2 is, you are disposing in that on gravity?

3 A The C-2 well, yes, sir.

4 Q The C-2?

5 A Yes, we are disposing under gravity.

6 Q Mr. Abbott, were exhibits, other than Three and Ten
 7 prepared by you or under your supervision?

8 A Yes, sir.

9 Q I believe Number Three is a Schlumberger log which
 10 was prepared by Schlumberger?

11 A With the exception we have marked the formation
 12 tops on that log.

13 Q And I believe Exhibit Number Ten was offered in a
 14 prior case and it was submitted by Mr. Nutter?

15 A Yes, sir.

16 MR. JENNINGS: We would offer Exhibits One through
 17 Ten.

18 MR. RAMEY: Without objection they will be accepted
 19 into the record.

20 (THEREUPON, Applicant's Exhibits One
 21 through Ten were admitted into evidence.)

22 MR. RAMEY: Any questions of the witness? He may
 23 be excused.

24 (THEREUPON, the witness was excused.)

25 MR. KELLAHIN: If the Commission please, we would

1 call Mr. Kernaghan.

2

3

DAN KERNAGHAN

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

6

7

DIRECT EXAMINATION

8 BY MR. KELLAHIN:

9 Q Mr. Kernaghan, would you please state your name
10 and employment?

11 A My name is Dan Kernaghan, I'm employed by Anadarko
12 Production Company as Division Evaluation Engineer.

13 Q Mr. Kernaghan, did you testify as an expert witness
14 in Case 5592 heard on November 19, 1975 concerning the first
15 request for permission to drill the subject disposal well?

16 A Yes, I did.

17 Q And are you familiar with Anadarko's waterflood
18 project in this particular area?

19 A Yes, I am.

20 Q Have you previously testified and had your qualifica-
21 tions as an expert witness accepted and made a matter of
22 record?

23 A Yes, I have.

24 MR. KELLAHIN: If the Commission please, are the
25 witness's qualifications acceptable?

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1 MR. RAMEY: Yes, they are, Mr. Kellahin.

2 Q (Mr. Kellahin continuing.) Mr. Kernaghan, does
3 Anadarko maintain and operate a waterflood project in this
4 area?

5 A Yes, we do, the Langlie-Mattix Penrose Sand Unit.

6 Q What is the current status of that waterflood project
7 with regard to volumes of water to be injected through your
8 injection wells?

9 A The current status is that we are currently injecting
10 a hundred percent of withdrawal that amounts to about seven
11 thousand barrels a day total for the project.

12 Q You are limited by prior Commission order to one
13 hundred percent, is that right?

14 A Yes.

15 Q Where is the Agua disposal well No. A-22 in relation
16 to the Anadarko waterflood?

17 A Well, it is located within the Unit boundary in
18 the northeast corner of the Unit, approximately a half a mile
19 from the Unit boundary.

20 Q Would you take the pointer and outline briefly on
21 Agua, Inc. Exhibit Number One, the outer perimeters of the
22 project? On Number Six.

23 A Okay. Here is their proposed injection well. Our
24 Unit boundary comes along the north side of Unit 22 and takes
25 in the western-most quarter of Sections 23 and 26 and comes

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1 back to the section line and takes in Sections 33 and 34,
2 essentially, as well as Sections 21 and 28. There is some
3 areas of this that extend over into neighboring sections but
4 this is basically the Unit outline.

5 Q I think the point of information of this brief
6 sketch might be helpful and I ask you to identify it and we
7 will identify it as Anadarko's Exhibit Number One.

8 A It is an exhibit showing the Township 22, 37 and
9 the producing wells located therein.

10 Q And what is the dark colored in area?

11 A Well the dark colored in areas are Anadarko's
12 producing leases. The Langlie-Mattix Sand Unit is the southern-
13 most portion of the dark area.

14 Q And have the three disposal wells of Agua, Inc.
15 been properly located on the plat?

16 A Yes, they have.

17 MR. KELLAHIN: If the Commission please, I move
18 the introduction of Anadarko's Exhibit Number One.

19 MR. JENNINGS: No objection.

20 MR. RAMEY: Without objection it will be admitted.

21 (THEREUPON, Anadarko's Exhibit Number One
22 was admitted into evidence.)

23 Q (Mr. Kellahin continuing.) You mentioned just now
24 the total volume of water currently being injected by Anadarko
25 in the waterflood on a barrel per day basis, that was what,

1 seven thousand, you said?

2 A. Seven thousand barrels a day. This amounts to
3 about a hundred and fifty barrels per day per injection well,
4 which is considerably less than ten barrels a minute.

5 Q Mr. Kernaghan, why has Anadarko continually objected
6 to Agua, Inc.'s application for a disposal well?

7 A Well, we feel it is inadvisable to introduce the
8 volumes of water that they are speaking of, that they are
9 requesting, into an area that has already shown to be a problem
10 area. This is a new development, it is the introduction of
11 a factor that was not there previously and we feel it is in-
12 advisable to stress the remedial work that has been done to
13 correct these problem wells with the introduction of this
14 volume of water.

15 Q Have you made a study of the fracture pressures in the
16 San Andres formation with regard to the subject disposal well?

17 A Yes, the fracture pressures that we have seen in
18 the area range from a thousand to twelve hundred pounds.

19 Q That is a thousand to twelve hundred pounds per
20 square inch at the surface?

21 A Yes.

22 Q In your opinion will the approval of the requested
23 application to increase the pressure in the disposal well
24 cause fracturing of the San Andres formation?

25 A Yes, I think it will. The volume they are speaking

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1 of injecting is equal to or above what wells are normally
2 acidized with. Large fracture jobs are given higher rates
3 but we acidize and break down the formation at lesser rates
4 than this.

5 Q What kind of fractures would you anticipate?

6 A Well, I would anticipate vertical fractures that
7 follow the zone of greatest permeability, which would be within
8 the San Andres unless they hit a zone of weakness around a
9 well or the penetrations.

10 Q Would you be able to give an opinion with regards to
11 whether or not these fractures would be confined to the
12 San Andres formation?

13 A I think they would be confined to the San Andres
14 unless they hit a zone of weakness.

15 Q Mr. Abbott discussed awhile ago on his direct
16 examination Anadarko's disposal well in the area, I believe
17 that was called a Walden?

18 A Walden No. 4.

19 Q Walden No. 4? What is its current status?

20 A Well, this well is currently inactive. It is used
21 sporadically only to dispose of water in the event that our
22 waterflood pumps on the Coal and Walden projects are down for
23 some reason. The water is normally used in an approved
24 waterflood project and injection only takes place when these
25 are broken down. It has been used intermittently, only

1 intermittently for the last several years.

2 MR. KELLAHIN: That concludes my direct examination.

3 MR. RAMEY: Any questions of the witness?

4 MR. JENNINGS: I would like to ask a few questions.

5 MR. RAMEY: Mr. Jennings?

6

7

CROSS EXAMINATION

8 BY MR. JENNINGS:

9 Q Mr. Kernaghan, I believe you said that your SWD well
10 is shut down off and on?

11 A I said it was used intermittently. It is shut down
12 more than it is used.

13 Q Is it true, though, that you have disposed of some
14 two million barrels of water into that well?

15 A That is what has been reported and I assume that
16 that is true, yes.

17 Q You report the truth, I take it and that you are
18 currently disposing of nine thousand barrels an hour?

19 A Not now, it is not being used.

20 Q In '74?

21 A In '74, if that was what was reported that is what
22 we consider to be true.

23 Q And possibly '75 too?

24 A Whatever we reported in '75. The month of November
25 showed ten thousand barrels disposed, three hundred barrels

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1 a day.

2 Q Are you in charge of this well?

3 A Indirectly.

4 Q But you have testified that you only dispose of
5 intermittently but you don't know how much you are disposing
6 of, is that your testimony?

7 A That's correct. I can say that it has not been
8 used in the last month.

9 Q Do you have pumps at the well?

10 A Yes, sir.

11 Q When you do dispose of it, at what pressure?

12 A Twelve hundred pounds.

13 Q Mr. Kernaghan, is there a pop-off valve on this
14 well?

15 A No.

16 Q Is it necessary for you to pressure up to twelve
17 hundred pounds to inject in this well?

18 A Yes.

19 Q I believe that you testified that you are injecting
20 seven thousand barrels of oil per day?

21 A Water.

22 Q Water, excuse me.

23 A In our Langlie-Mattix Unit?

24 Q Yes.

25 A Yes.

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1 Q Is all of that produced water or is some of that
2 water imported into the area from elsewhere?

3 A Three hundred barrels a day is produced and we
4 import seventeen hundred barrels a day.

5 Q You import seventeen hundred barrels a day?

6 A That is correct, or almost seventeen hundred. In
7 January we didn't inject quite seven thousand barrels.

8 Q Mr. Kernaghan, I believe at the last hearing you
9 testified that you had taken some samples, I believe, of the
10 Agua water, is that your testimony?

11 A That is correct.

12 Q Did you furnish the figures, the analysis to the
13 Commission as you had agreed?

14 A Yes, sir.

15 Q Would you be so kind as to furnish us one too?

16 A Yes, sir. To you or to Mr. Abbott?

17 Q To me.

18 A Okay.

19 Q You testified concerning the fracture pressure, of
20 the study you have made of the fracture pressures and I
21 assume this was solely in the San Andres formation?

22 A Yes.

23 Q Which wells was that made in?

24 A Our Walden 11, your own well, the U-13 and wells
25 on our Wortham lease up to the north, just south of the town

1 of Eunice.

2 Q Was that in connection with your original injection,
3 or in connection with this hearing?

4 A In connection with this hearing.

5 Q Did you make any studies before you started disposing
6 into the San Andres formation in your Walden well?

7 A I was not there when we started injection. I don't
8 know whether studies were made or not.

9 Q Do you have any producing San Andres formation, any
10 wells producing from the San Andres formation?

11 A Yes, we do.

12 Q Where are those wells located?

13 A We have a well in Section 14, it is in location D
14 of 14, four or five hundred feet outside the one-mile radius
15 of your A-2 well. We have other wells on our Lou Wortham
16 lease in the north half of Section 11 that produces from the
17 San Andres.

18 Q Are you flooding the San Andres or wells in those
19 zones?

20 A No, we're not.

21 Q Would you locate your Walden well, is it in the
22 southwest-southwest of Section 15?

23 A Our Walden 4, no, it is in the northwest of the
24 southwest of 15. The injection well in the southwest-southwest
25 of 15 is a Queen injection well. It's part of our Coal-

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1 Walden Waterflood Project. I take it's in the southeast of
2 the southwest of 15.

3 Q Do your San Andres wells produce water?

4 A Yes.

5 Q Are you disposing of that or recycling it or what
6 are you doing with that?

7 A We are bringing that water down and using it in
8 our project, our waterflood project.

9 Q Is that water suitable for use in your project?

10 A Yes.

11 Q And it is being produced from the San Andres zone
12 in the same area as the A-22 well?

13 A Yes, it is.

14 MR. JENNINGS: I believe that's all.

15

16

CROSS EXAMINATION

17 BY MR. RAMEY:

18 Q Mr. Kernaghan, could you advise the Commission
19 just on what negotiations went on as to possibly using the
20 disposal water for injection into the project in this area?

21 A Okay. We had some discussions with Mr. Abbott about
22 taking their water and using it in our project, some cost
23 figures whereby they would sell us the water and we would
24 use it were discussed. We had previously taken older samples,
25 we had previously negotiated with them back in '71 or '72 to

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1 use that water when we contracted with Skelly to bring water
2 in from the outside and at that time we had taken some
3 limited samples and they showed the water to be compatible.
4 After the second set of discussions we took further samples
5 that indicated that this water was much poorer in quality
6 than what we were injecting and we did not feel that we could
7 take this water without it being cleaned up. The cost to
8 clean up the water would be excessive for us. In addition
9 we were reduced, you know, cut back on our injection at that
10 point and we could only take a very small portion of it.

11 Q So negotiations came to an end?

12 A Right, we felt that the next step, if that water
13 was going to be used in a waterflood project, it should be
14 used in all of the projects in the area.

15 MR. RAMEY: Thank you. Any other questions of the
16 witness? He may be excused.

17 (THEREUPON, the witness was excused.)

18 MR. RAMEY: Anything further, Mr. Kellahin?

19 MR. KELLAHIN: No, sir.

20 MR. CARR: We will call Mr. Clements.

21
22 LESLIE A. CLEMENTS

23 called as a witness, having been first duly sworn, was
24 examined and testified as follows:
25

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and position for the record, please?

A Leslie A. Clements, Deputy Oil and Gas Inspector, District One.

Q Mr. Clements, do your duties as Deputy Oil and Gas Inspector include witnessing certain tests that are required by Commission Rules and Regulations?

A Yes, sir.

Q Did you witness the Bradenhead tests which were taken pursuant to the provisions of Commission Order R-5003?

A Yes, sir.

Q Are you familiar with the subject matter of this case?

A Yes, sir.

Q What is the present status of the surveys on the wells in the general problem area?

A The Commission staff in Hobbs has just finished conducting these surveys. We finished the one prescribed by Order R-5003 on February 26th.

Q Okay, I'll hand you what has been marked as Oil Conservation Commission Exhibit A and ask you to refer to this and explain to the Commission what it shows?

A This is a tabulation of the results of the last

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1 quarterly Bradenhead surveys required by this order, Mr. Carr,
2 and it indicates that even after some nine months of the total
3 four hundred and fifty wells, we still have a problem with
4 point nine three percent of the wells. Nine point three percent.

5 Q Nine point three percent?

6 A Nine point three percent, yes, sir.

7 Q And this exhibit indicates only those wells in which
8 you have found some problems?

9 A Yes, sir.

10 Q Now, Mr. Clements, have you run tests in addition
11 to those in the problem area?

12 A Yes, sir.

13 Q And why did you run these tests?

14 A Because of the gas-contaminated domestic water
15 well in the area.

16 Q I would like you to refer to what has been marked as
17 Oil Conservation Commission Exhibit B and explain to the
18 Commission what that shows?

19 A This is a tabulation of the results of this test
20 that we conducted between January 26th and February the 5th
21 1976 and it indicates of a hundred and fifty-two wells surveyed,
22 forty-two percent of them had a problem.

23 Q What conclusions can you draw from the results of
24 these Bradenhead surveys?

25 A That even after extended workovers and some nine

1 months of Bradenhead surveys we still have problems in this
2 area.

3 Q What is the remaining plan of the Commission concern-
4 ing the testing of the wells in this area?

5 A The Commission intends to extend the boundaries of
6 this survey to the northern city limits of Eunice as soon as
7 practical and as time permits.

8 Q Do you have anything further to add to your
9 testimony?

10 A No, sir.

11 MR. CARR: If the Commission please, I offer Oil
12 Conservation Commission Exhibits A and B.

13 MR. RAMEY: Without objection they will be admitted.
14 (THEREUPON, Oil Conservation Commission
15 Exhibits A and B were admitted into
16 evidence.)

17 MR. CARR: I have nothing further of this witness.

18 MR. RAMEY: Any questions of this witness?
19 Mr. Nutter?

21 CROSS EXAMINATION

22 BY MR. NUTTER:

23 Q Mr. Clements, on Exhibit A, this is the survey
24 prescribed by Order 5003 for four hundred and fifty wells, how
25 many wells exhibited a problem out of the four hundred and

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1 fifty?

2 A I haven't got a total tabulation on it, Mr. Nutter.
3 I could add these up.

4 Q You told me yesterday.

5 A Let me see, let me refer to my notes then. Forty-
6 three.

7 Q And that would be nine point three percent of the
8 total on the exhibit?

9 A Nine point three percent, yes, sir.

10 Q I think the exhibit would stand corrected there. It
11 would be nine point three percent instead of point oh nine
12 three?

13 A Yes, sir.

14 MR. NUTTER: Thank you.

15 MR. RAMEY: Mr. Jennings?
16

17 CROSS EXAMINATION

18 BY MR. JENNINGS:

19 Q Mr. Clements, after these months and these wells
20 still haven't complied, the operators have not complied with
21 the Order of the Commission, what action is contemplated, if
22 you know, by the Commission in connection with these default-
23 ing operators?

24 A Mr. Jennings, some of these are new problems that
25 have occurred, while some of them are older problems. We have

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1 written letters to these operators directing them to repair
2 these wells and I contemplate that punitive action will be
3 taken within a prescribed length of time.

4 Q Well, has any punitive action been taken or threatened
5 prior to this time in connection with these?

6 A In some cases punitive action has been threatened.

7 Q Do you feel that these operators will ultimately
8 comply with the Order of the Commission?

9 A Yes, sir, I sure do.

10 Q How long do you think it will take for them to
11 comply with your Order?

12 A I feel that we will have it finished at the time
13 the fourth quarter survey will be conducted.

14 Q Are you on a calendar year?

15 A Yes, sir.

16 Q And your testimony is that it will take some nine
17 months?

18 A Well, it has taken nine months on some cases, yes,
19 sir.

20 Q But I mean it will take nine additional months?

21 A No, sir, it will be one more quarter after this, the
22 next quarter, by the next quarter.

23 Q I don't understand your quarters, could you put a
24 date on it, I could understand that better?

25 A Okay, this quarter will end sometime after April,

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1 between April and May. We contemplate running the same survey
2 in May.

3 Q You contemplate that at that time they will be taken
4 care of?

5 A Yes, sir, they better be.

6 Q Are there any particular wells that are problem wells
7 at this time or are they all problem wells?

8 A All of these listed on this tabulation here are
9 problem wells.

10 MR. JENNINGS: I believe that's all. Thank you.

11
12 CROSS EXAMINATION

13 BY MR. RAMEY:

14 Q Mr. Clements?

15 A Yes, sir.

16 Q Now, in previous orders covering this area, didn't
17 the orders list definite wells that had to be worked on?

18 A Yes, sir.

19 Q And haven't those wells been worked on?

20 A Yes, sir.

21 Q So to date the orders of the Commission have been
22 met by the operators?

23 A Yes, sir.

24 Q Required work, some work has been done by the
25 operators?

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1 A Yes, sir, with the exception of one well.

2 Q What well is that?

3 A Mrs. Wolfson. I had it listed here somewhere.

4 Do you know which one it is, Dan? Wolfson Oil Company Boyd

5 No. 1.

6 Q Do you know the ownership of that well at this
7 time?

8 A No, sir, it's in question, I think.

9 MR. JENNINGS: Is that well operated by Mr. Hendrix?

10 A No, sir, it is a plugged well.

11 MR. JENNINGS: It's plugged?

12 A Yes, sir.

13 MR. JENNINGS: I'm really not clear. I hate to
14 keep questioning, but what has been marked as Exhibit A are
15 not the wells that were listed as problem wells in Order
16 R-5003, or are they?

17 A Some of them may be.

18 MR. JENNINGS: Well, my understanding from your
19 testimony, all of the wells that were specifically enumerated
20 in 5003, except the Wolfson Well, have been taken care of?

21 A As prescribed by this Order, yes, sir, but still
22 some other problems exist.

23 MR. JENNINGS: These are additional problems then?

24 A Yes, sir.

25 MR. JENNINGS: That's all.

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1 MR. NUTTER: In other words, Mr. Clements, some of
2 these are brand new wells that have demonstrated a pressure
3 on their casing or a flow for the first time?

4 A. Yes, sir.

5 MR. NUTTER: And there hasn't been any chance to
6 get remedial work on them?

7 A. Yes, sir.

8 Q. (Mr. Ramey continuing.) But you have instructed
9 these operators that remedial action will have to be taken?

10 A. Yes, sir.

11 Q. Immediately?

12 A. Yes, sir.

13 MR. JENNINGS: A number of them on the first page
14 that I've reviewed are gas problems, are they not?

15 A. Yes, sir, it's indicative of some problem down hole.

16 MR. JENNINGS: Was that indicative of the water
17 being injected in some other well? That's a down-hole
18 problem.

19 A. I feel that if gas or oil can occur on the surface,
20 so can water.

21 MR. JENNINGS: That's all.

22 Q. (Mr. Ramey continuing.) I know the well here,
23 WEK Drilling Company Boyd in Section 22 of 23, 37, flow of
24 salt water from surface casing?

25 A. Yes, sir.

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1 Q That's not a gas problem is it?

2 A No, sir. There are two up above it there in Aztec
3 also, Mr. Ramey, that are not gas problems.

4 MR. RAMEY: Thank you, Mr. Clements.

5 MR. KELLAHIN: I have one question.

6

7

CROSS EXAMINATION

8 BY MR. KELLAHIN:

9 Q What is the date of the surveys on Exhibit A?

10 A Exhibit A was surveyed between February 16th and
11 February 26th, 1976.

12 Q And the dates for the surveys for Exhibit B?

13 A January 26th through February 5th.

14 Q Exhibit A was done after Exhibit B?

15 A Yes, sir.

16 MR. KELLAHIN: Okay.

17 MR. RAMEY: Your Exhibit B, Mr. Clements?

18 A Yes, sir.

19 MR. RAMEY: Are these wells outside of the problem
20 area?

21 A Yes, sir, it lies just to the north of the problem
22 area.

23 MR. RAMEY: And that survey was taken for what
24 reason?

25 A As the result of a gas-contaminated domestic water

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1 well.

2 MR. RAMEY: But you also picked up water flows?

3 A. Yes, sir.

4 MR. RAMEY: Oil flows, water flows and gas flows?

5 A. Yes, sir.

6 MR. RAMEY: It looks like we have a separate problem
7 area, doesn't it?

8 A. Yes, sir, it does.

9 MR. RAMEY: Or a bigger problem area?

10 A. Yes, sir, a bigger problem area.

11 MR. RAMEY: Any further questions of the witness?

12 He may be excused.

13 (THEREUPON, the witness was excused.)

14 MR. RAMEY: Mr. Jennings, do you have anything
15 further?

16 MR. JENNINGS: That's all I have to offer.

17 MR. RAMEY: Mr. Kellahin, do you have any closing
18 statements?

19 MR. CARR: Before we go to the closing statements,
20 we have received a number of letters and Mr. Jennings has
21 requested that they be read into the record here. With your
22 permission I won't read all of the Gulf letter because it
23 contains a lengthy history of how the case came about and
24 just go into the material that hasn't been covered here today.

25 This letter is from Gulf Energy and Minerals

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1 Company, signed by Mr. R. F. Ward, Jr. (Reading.) A review
2 of the data published in the Monthly Statistical Report of
3 the New Mexico Oil and Gas Engineering Committee reveals that
4 salt water disposal wells in Township 22 South, Range 37 East
5 are operating at wellhead injection pressures as high as
6 twelve hundred psi. This review also revealed that waterflood
7 injection wells in Township 22 South, Range 37 East are
8 operating at wellhead injection pressures as high as two
9 thousand, ninety psi.

10 In order not to jeopardize the approximately
11 ten thousand barrels of oil per day produced from the four
12 hundred and thirty wells tied into Agua's Blinebry-Drinkard
13 system, Gulf Oil Corporation respectfully requests that the
14 Commission allow the disposal of water into Agua's Well No.
15 A-22 at wellhead injection pressures comparable to those
16 pressures allowed for other disposal and injection wells in
17 Township 22 South, Range 37 East. (End of reading.)

18 A letter from Mr. L. P. Thompson, Division Manager,
19 Production Department for Continental Oil Company in Hobbs
20 reads as follows: (Reading.) Continental Oil Company is one
21 of the owners of the Blinebry-Drinkard Salt Water Disposal
22 System operated by Agua, Inc. and is also a working interest
23 owner in Anadarko's Langlie-Mattix Penrose Sand Unit and in
24 Skelly's Skelly Penrose B Unit, as well as the operator of
25 various properties in the thirty-six section area which was

1 the subject of Cases Nos. 5377 and 5403. Continental operates
2 several properties which deliver substantial volumes of
3 produced water into the Blinebry-Drinkard Salt Water Disposal
4 System. We are aware of the pressure limitation placed
5 on Agua in their drilling of a new disposal well and have
6 been concerned about the apparent inconsistency of this
7 limitation in comparison with the lack of limitation or less
8 stringent limitation placed on other injectors of water in
9 the area.

10 We should like to point out that the production of
11 crude oil should be encouraged in New Mexico in order to
12 supply the tremendous demand in the United States. Each
13 barrel of oil we do not produce in this country must be
14 imported. It is a fact of life that water must be produced
15 with a large part of our domestic oil production. The
16 Commission has directed that we must dispose of produced
17 water underground and we concur in this directive. We do
18 not believe that it serves the best interest of the State
19 of New Mexico or the United States to force operators of
20 leases to shut in those leases because the water cannot be
21 disposed of within the pressure limitation placed by the
22 Commission. We do not believe that it serves the best
23 interest of the industry for a new disposal well to be
24 restricted to a less pressure for injection of water than
25 is used, with Commission's apparent approval by other disposal

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1 systems in the same area.

2 We believe that if the Commission is unwilling to
3 relax the pressure limitation on the new disposal well that
4 it should give serious consideration to requiring the water-
5 flood project in the immediate area to substitute this produced
6 water in place of outside water which is piped into the area
7 for injection. The parties to such a water exchange should be
8 subject to the same compulsion or lack of compulsion in
9 arriving at mutually agreeable terms for such exchange.

10 Continental Oil Company respectfully urges the
11 Commission to take appropriate action to permit the produced
12 water now handled by the Blinebry-Drinkard SWD System to be
13 disposed of without unnecessary hardship to any of the parties
14 here involved. (End of reading.)

15 A letter from Phillips Petroleum Company, signed
16 by F. F. Lovering, Manager of the Southwestern Region reads:
17 (Reading.) Phillips is a member of the Agua, Inc. operated
18 Blinebry-Drinkard Salt Water Disposal System. Water produced
19 in our Sims and New Mexico D Leases is disposed of through
20 this system.

21 Phillips supports Agua, Inc. in its request for
22 approval to inject waste waters into the Blinebry-Drinkard
23 Salt Water Disposal Well No. A-22 at a surface injection
24 pressure not to exceed twelve hundred psi.

25 This well was drilled and completed in compliance

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1 with the authority granted in Order No. R-5137. After acid
2 treatment it is apparent that the well will not accept
3 satisfactory quantities of water at surface wellhead pressure
4 of not more than one hundred psi. The well is completed so as
5 to restrict fluid injection into only the San Andres zone and
6 is essential to the continued operation of the Blinebry-
7 Drinkard Salt Water Disposal System.

8 Your approval of this amendment of Order No. R-5137
9 is respectfully requested. (End of reading.)

10 A Mailgram from Union Texas Petroleum Company reads:
11 (Reading.) Gentlemen: This letter is written to request your
12 favorable action on the application of Agua, Inc. in Case
13 5644. The surface injection pressure limitation of one
14 hundred psi contained in Order No. R-5137 is unnecessarily
15 restrictive and could logically be increased to twelve hundred
16 psi under the conditions recited in Agua's letter to you dated
17 February 16th, 1976. (End of reading.) This is signed by
18 W. L. Hixon.

19 The Mobil Oil Corporation wrote the Commission. The
20 letter is signed by L. A. Davis, Area Operations Engineer in
21 Midland and it states: (Reading.) Mobil Oil Corporation, as
22 a participant in the Agua Blinebry-Drinkard Salt Water Disposal
23 System, recommends that the Commission approve the amendment
24 of Order No. R-5137 to provide for injection pressures up to
25 twelve hundred psi in Agua's Well No. A-22, as requested in

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1 Case No. 5644 on the March 10, 1976 hearing docket.

2 The production from many wells in the Eunice Area
3 depends upon the disposal capacity of the Agua Blinebry-
4 Drinkard Salt Water System. We believe that injection of salt
5 water into Well No. A-22 at pressures up to twelve hundred
6 psi is necessary and can be accomplished without harm to
7 producing reservoirs by the proper operation and monitoring
8 of the subject well. (End of reading.)

9 And finally, we have a letter from Mr. K. D. McPeters,
10 Vice President of Moranco and it reads: (Reading.) This
11 letter is to indicate our support of Agua, Inc. in Case 5644,
12 scheduled March 10, 1976. We urge the Commission to approve
13 the injection pressure of twelve hundred psi. (End of reading.)

14 MR. RAMEY: Now, any closing statements?

15 MR. JENNINGS: Well, I might just say a few words.
16 Agua, as everybody well realizes is the agent of the operators
17 in the area, we are commissioned with the problem we have been
18 fighting since December of 1974 and we at all stages have
19 attempted to comply with all of the orders and directives of
20 the Commission and it has not been easy.

21 When you review our history, we shut in the H-35
22 well before we were actually required to. We had another well
23 which we had hoped to dispose of the water in. After a
24 hassle with the County Commissioners and all of the land owners
25 in the area, we were able at an expense of a hundred thousand

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1 dollars to install a line to transmit the water to that site
2 and we asked permission to test another zone and Exxon got all
3 excited and they started fighting us and now we are producing
4 water in that zone and we have produced for five months. It
5 is temporarily taking care of the needs but to take care of
6 everyone's needs we have again elected to drill a well which
7 our people thought was the best located under the circumstances
8 and we have drilled a well at the expense of a hundred and
9 sixty-five thousand dollars. Again we are trying to alleviate
10 the situation. There is a lot of oil being produced, this is
11 probably one of the most prolific oil areas and there are
12 probably more wells in this area than there is any place in
13 the State, completed at a different horizon. We realize that
14 the State has a problem but ten thousand barrels of crude a
15 day is a whole lot. We have an alternative to truck the water
16 out of there and that is a tremendous responsibility.

17 You have heard the letters from the various operators
18 in the area and some of those I would point out are also in the
19 Anadarko flood, participants in there. I think that we have
20 a situation of one operator thinks that it would cause problems.
21 I don't know, this doesn't seem to be shared by the rest of
22 the operators and we are trying to take care of the situation
23 the best way we know how. We need the energy and the
24 Commission, and wisely so, requires that the water be put
25 under the ground and we are doing our best to put it there.

1 If we shut in these wells we have a real problem. We want
2 to cooperate with the Commission and we have done everything
3 we possibly could up to now and we will continue to do so.

4 MR. RAMEY: Mr. Kellahin?

5 MR. KELLAHIN: If the Commission please, I find
6 this particular case most distressing. One of the things
7 that bothers me most is the letters submitted for considera-
8 tion. All of these people have vested interests in Agua's
9 disposal well. It is not the Commission's fault that this well
10 is located where it is. If you will read the testimony from
11 the November 19th hearing you will find that Mr. Abbott didn't
12 make an extensive study of where else to put this well, he
13 put it the cheapest place he could find. We pointed out
14 alternative sites to him, yes, they were going to cost more
15 money, perhaps fifty percent more than the proposed location.
16 The Commission didn't present those problems, they were there
17 when Agua decided to drill the well in this particular
18 location. They assume that kind of risk. Why? Because it
19 was cheaper and they thought maybe we can get it into the
20 ground under gravity flow. They can't and now they are
21 trying to force the Commission into approving this well after
22 they have gone ahead and assumed the risk, expended the
23 moneys and they want to further increase the risk of the
24 hazards to this remedial work in the area. I think that
25 is totally ridiculous. It is the Commission's statutory duty,

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1 which I think they consistently and diligently exercise, to
2 deny the application. I don't see how else you can act.

3 We have seen from the testimony of Mr. Clements that
4 some of the remedial work has been completed and yet other
5 additional problems continue to occur. It is unfortunate that
6 this problem has befallen on you but it is not the Commission's
7 duty to grant it in light of the existing problems in this
8 area. I see that you have no other choice but to deny the
9 application.

10 MR. RAMEY: Anything further in this case? If not,
11 the case will be taken under advisement.

12 Mr. Kenyon?

13 MR. KENYON: I have a statement I would like to make.

14 MR. RAMEY: Would you identify yourself for the
15 record, please?

16 MR. KENYON: Yes, I'm Albert Kenyon, Production
17 Supervisor for John H. Hendrix Production and he is also an
18 operator in this area from Midland, Texas.

19 We would like to make an official objection to
20 the proposed increase of pressure in this disposal well. We
21 feel the problems encountered and in pursuance of Order R-5003
22 have not yet been solved. We have had had considerable expense
23 in complying with this Order and we feel that this increase
24 would tend to further compound the areas in this problem.
25 That's all I have.

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MR. RAMEY: Thank you, Mr. Kenyon.

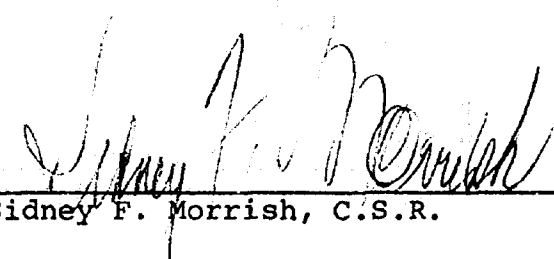
If there is nothing further the Commission will
take the case under advisement.

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REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Certified Shorthand Reporter,
do hereby certify that the foregoing and attached Transcript
of Hearing before the New Mexico Oil Conservation Commission
was reported by me, and the same is a true and correct record
of the said proceedings to the best of my knowledge, skill and
ability.


Sidney F. Morrish, C.S.R.

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 10, 1976

COMMISSION HEARING

IN THE MATTER OF:

Application of Agua, Inc. for the
amendment of Order No. R-5137, Lea
County, New Mexico.

CASE
5644

BEFORE: Joe D. Ramey, Director
Phil Lucero, Member
Emery Arnold, Member

Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil
Conservation Commission:

William F. Carr, Esq.
Legal Counsel for the Commission
State Land Office Building
Santa Fe, New Mexico

For the Applicant:

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JENNINGS, CHRISTY & COPPLE
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1012 Security National Bank Bldg.
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For Anadarko Production Co.:

W. Thomas Kellahin, Esq.
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1 MR. RAMEY: The hearing will come to order. We
2 will call Case 5644.

3 MR. CARR: Case 5644, application of Agua, Inc.
4 for the amendment of Order No. R-5137, Lea County, New Mexico.

5 MR. RAMEY: We ask for appearances at this time.

6 MR. JENNINGS: James T. Jennings of Jennings,
7 Christy and Copple for Agua.

8 MR. KELLAHIN: Tom Kellahin of Kellahin and Fox,
9 Santa Fe, appearing on behalf of Anadarko Production Company.

10 MR. CARR: William F. Carr appearing for the
11 Commission.

12 MR. RAMEY: Any other appearances? Would all of
13 the witnesses stand at this time and be sworn?

14 (THEREUPON, the witnesses were duly sworn.)

15 MR. RAMEY: Okay, I will ask Mr. Nutter to make a
16 short statement for the record.

17 MR. NUTTER: If the Commission please, my name is
18 Dan Nutter, Chief Engineer for the Oil Conservation Commission

19 I would like to make a preliminary statement regard-
20 ing the application here today. Not so much the application
21 itself, but the area in which the application is concerned.

22 Originally on December 3, 1974, the Commission
23 called a hearing to consider why the continued injection of
24 water for secondary recovery or disposal purposes into any
25 formation from the surface of the ground down to and including

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1 the Drinkard formation, should be permitted in Sections 13
2 through 36 of Township 22 South, Range 37 East, and Sections 1
3 through 12 of Township 23 South, Range 37 East, all in Lea
4 County, New Mexico.

5 The reason the Commission called this hearing, there
6 had apparently been some water break through, from either
7 disposal wells or water flood injection wells into some of the
8 upper formations in that general area and the Commission
9 called the hearing to investigate what was causing the problem
10 and what could be done about the problem and what steps should
11 be taken.

12 On December 5th, 1974, the Commission entered
13 Order No. 4936 in which certain steps were taken to simplify
14 the -- well, I won't say it would simplify -- it was to try
15 to rectify the problems in the area. Among the steps that
16 were taken was the lessening of the salt water disposal programs
17 and the curtailment of water flood programs and a complex
18 system for surveying wells to see if there were leaks in the
19 wells, to see if the cement jobs and the casing programs were
20 adequate in the well and a continuing surveillance was to be
21 taken.

22 The case was again called for hearing in January of
23 1975 and Order No. R-5003 was entered in which certain wells
24 were ordered to be repaired and continued surveillance
25 mandated, as well as continued curtailment of injection for

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1 disposal and water flood purposes. There was a salt water
2 disposal well which later developed as a problem well in
3 Section 35 of Township 22 South, Range 37 East. This salt
4 water disposal well was suspected of being one of the wells
5 in the area which may be contributing to the problem and the
6 Commission ordered that well shut in. As a result of that
7 well being shut in, the Applicant applied for and received
8 approval to drill a substitute salt water disposal well in
9 the general area which was covered by the original cases
10 on the Order and that well is the subject of the hearing
11 today.

12 MR. RAMEY: Thank you, Mr. Nutter. Mr. Jennings,
13 you may proceed at this time.

14 MR. JENNINGS: Well, before proceeding I would just
15 like to clarify our status here. Order No. 5137 provides
16 that the Secretary-Director may grant administrative approval
17 to increase the pressure. Pursuant thereto on February 16th,
18 1976, Agua, the Applicant herein, did file such a request
19 and no action was taken on that request but the Commission
20 has set this matter down for a hearing for an application
21 as an application to amend Order No. 5137. Is that the
22 proper context we are here in?

23 MR. RAMEY: I would think so, yes, sir.

24 MR. JENNINGS: Before proceeding, could I make one
25 inquiry of, two inquiries of Mr. Nutter, to clarify the record?

1 First, has the remedial work that was outlined in
2 Order No., I believe it was 5003, entered in Case No. 5403
3 been completed?

4 MR. CARR: Dan, we plan to call Les Clements in to
5 give us a status report on this at a later time.

6 Mr. Jennings, we have a summary well by well that
7 we will introduce at that time.

8 MR. JENNINGS: Fine. One additional question. Was
9 any order or decision ever entered in Case 5403 after the
10 November 19, 1975 hearing?

11 MR. RAMEY: Not at this time.

12 MR. NUTTER: November of '75?

13 MR. JENNINGS: Yes, November 19, 1975.

14 MR. RAMEY: I think that is still under consideration.

15 MR. NUTTER: What was the case number?

16 MR. JENNINGS: 5403, the same case. It was
17 reopened, 5403 was reopened on November 19, 1975 and I took
18 additional testimony.

19 MR. RAMEY: I think you have that on your desk at
20 this time.

21 MR. NUTTER: The case was reopened, but I didn't
22 think it was that date but there has not been an order entered
23 in the most recent reopening of the case, no.

24 MR. JENNINGS: Is one contemplated?

25 MR. NUTTER: Yes.

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1 MR. JENNINGS: I think, Mr. Carr, you are going to
2 call some witnesses. Do you desire us to proceed or do you
3 wish to proceed with your witnesses?

4 MR. CARR: We can go in any order. Mr. Jennings,
5 all we are simply going to do is give a progress report of
6 the effort that has been made down there to comply with the
7 original Order 5003. We can go now if you would prefer, it
8 is very short.

9 MR. JENNINGS: Well, we will proceed.

10 MR. CARR: Fine.

11
12 W. G. ABBOTT

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

15
16 DIRECT EXAMINATION

17 BY MR. JENNINGS:

18 Q Would you state your name, place of residence and
19 occupation, please, sir?

20 A W. G. Abbott from Hobbs, New Mexico and I'm Manager
21 of Agua, Incorporated.

22 Q Mr. Abbott, did you appear before this Commission
23 in the original hearing on this well which was in Case No. 5592
24 on November 19, 1975 and testify?

25 A Yes, sir.

1 Q And have you testified on many previous occasions
2 before this Commission?

3 A Yes, sir.

4 MR. JENNINGS: Do you wish me to further qualify
5 Mr. Abbott?

6 MR. RAMEY: I don't think it's necessary, the
7 Commission is familiar with Mr. Abbott.

8 Q (Mr. Jennings continuing.) Mr. Abbott, you have
9 Mr. Nutter's statement concerning the history of why we are
10 here. Do you have any additional facts that you would like to
11 add from Agua's standpoint?

12 A Yes, sir. The most important thing I remembered
13 in Case 5377, that was the original case held December 3rd,
14 1974, was various testimony by the Commission, by Agua, by
15 operators of salt water disposals and also operators of
16 pressure units in the area. I remember too, an Anadarko man
17 was questioned as to if disposal water could be used in lieu
18 of this imported water that they were using for water flood
19 and they went into great detail that the water was compatible
20 and could be used, they ran tests. Of course, after that
21 hearing there was a change in their field manager and also
22 other changes in the Anadarko operation and after we pursued
23 this we were sort of stymied and we couldn't get together
24 with Anadarko at that time.

25 The next hearing, April 29th, 1975, Case 5403, the

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1 thing that --

2 Q Mr. Abbott, I believe that hearing was on January 22nd,
3 was it not? And the order came out, maybe I'm wrong,
4 excuse me.

5 A I don't know. It was the next case to do with this
6 thirty-six section problem area.

7 Q The hearing, Mr. Nutter just called my attention
8 to it, was January 22nd.

9 A January 22nd? The order was issued in April, is
10 that right, April 29th?

11 Q Right.

12 A In the findings for this case, it was specifically
13 stated that Agua could continue to dispose in their SWD Well
14 H-35. The only restriction, I believe there was a restrict-
15 ion of so many barrels a day, fifty-three hundred or fifty-five
16 hundred barrels a day but it specifically cited Agua's
17 continuing disposal.

18 The next hearing, of course, that really got the
19 attention of the Blinebry-Drinkard SWD System operated by
20 Agua, was the directive of August 22nd of the same year,
21 1975, that shut in H-35. In this directive, it was a letter
22 directive, that stated that there was communication between
23 the tubing and the casing in the well. Well, I hope there
24 is communication, there is no packer in the well and anything
25 put in the tubing will reflect in the casing. I believe they

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1 were ill-informed or misinformed by their field personnel in
2 that this was a pressure-injection well and with two triplex
3 pumps on it and at the time a pressure check was made of the
4 various casing strings, of course, the well was pumping and
5 the pressure gauges were pulsating. He interpreted this to
6 be a leak somewhere, I don't know exactly where, although
7 there is or was, five hundred pounds of pressure on the surface
8 casing in this well. The surface casing is set at eleven
9 hundred and eighty pounds and it is very common to have pressure
10 on the surface casing in this area. But the order, this
11 letter directive, ordered us to shut in the well.

12 Q What date was it to be shut in?

13 A The directive was issued the twenty-second of
14 August, 1975 and we had to shut the well in by September 26th,
15 1975.

16 Q What was it necessary for you to do between
17 August 22nd and September 26th?

18 A We had to dispose of the water in some fashion so
19 we had to lay a temporary line from our H-35 well to an
20 existing salt water disposal well, SWD C-2.

21 Referring to one of our exhibits, this meant
22 laying a temporary line up a so-called county road, up to
23 this point and then over to the SW C-2. This was very
24 difficult in that this paved so-called county road we found
25 out wasn't owned by the county, although they were maintaining

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1 it and we had to deal with the land owner to buy a right-of-
2 way to lay this temporary line in a bar ditch along side of
3 this road. We laid about six miles of six-inch plastic pipe
4 just barely under the ground. We covered it so it wouldn't
5 be affected by heat from the sun and we used the existing
6 triplex pumps at H-35 to kick this water up there.

7 It cost the System and the parties to the System,
8 in excess of a hundred thousand dollars to run that line. We
9 are still using the line. At the same time we had to go to
10 the Commission to get permission to open up some other zones
11 in this SWD C-2 through perforations in the seven-inch casing
12 from forty-two, thirty to forty-three, twenty and the
13 Commission issued their Order R-4495-A which stated that we
14 could use these perforations, plus the original open hole
15 in this well, until February 7th. That was four months after
16 the hearing and at the end of that time we would have to
17 blank off the perforations and just use the open hole.

18 This order was later amended so it now reads that
19 we can use those perforations until May 7th, 1976.

20 At the present time this well is taking four hundred
21 barrels per hour by gravity. The last check I had on it was
22 the day before yesterday and the twenty-four hour average
23 was four hundred and four barrels per hour.

24 It is necessary that we acidize this well frequently
25 to keep up this high injectivity.

1 Q Mr. Abbott, a little more history, I don't think
2 that all the members of the Commission are familiar with this.
3 What function does Agua perform for the operators in the area
4 delineated by the map, that map.

5 A We gather the water from the partners in this agree-
6 ment and dispose of the salt water. This means that we are
7 connected to tank batteries that have at the present time
8 four hundred and forty-seven producing wells that we are
9 disposing of their salt water. This represents thirty-four
10 different operators.

11 Q Do you have any idea about the production of the
12 oil from those four hundred and forty-seven wells?

13 A I estimate the oil production represented by these
14 wells would produce about ten thousand barrels a day.

15 Q Mr. Abbott, was your, I believe it is your A-22
16 well, drilled pursuant to the order the Commission entered in
17 Order No. R-5137?

18 A Yes, sir, we can refer to Exhibit One.

19 Q You are now referring to what has been marked as
20 Exhibit One. Just tell us what that is and what it shows?

21 A This is a diagrammatic sketch of the well which
22 shows the way the well was drilled and completed. Nine-and-
23 five-eighths inch casing was set at three hundred and twenty-
24 one feet and cemented with two hundred and fifty sacks of
25 cement and this nine-and-five-eighths string was circulated,

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1 the cement was circulated to the surface, then the well was
2 drilled to a total depth of forty-nine, sixty-five and a
3 seven-inch casing was then set at thirty-eight, sixty-five
4 with sixteen hundred sacks of cement. This cement actually
5 circulated to the surface in excess of a hundred sacks, it
6 probably circulated close to two hundred sacks. Then five-and-
7 a-half inch tubing string was run and swung at the thirty-eight,
8 seventy-five, so our injection interval is from thirty-eight,
9 sixty-five to forty-nine, sixty-five.

10 Q Mr. Abbott, referring to the casing program, as I
11 understand it then the seven-inch is cemented from the surface
12 to the bottom of the casing which is thirty-eight hundred
13 and sixty-five feet?

14 A Yes, sir.

15 Q Is there any possibility of fluid going up the
16 annulus outside of that casing?

17 A I doubt it, no.

18 Q And again that nine-and-five-eighths is cemented
19 from three hundred and twenty-one feet to the surface?

20 A Yes, sir.

21 Q Referring to what has been marked as Exhibit Number
22 Two, would you refer to that and tell the Commission what
23 that is? I might add that that has been marked exhibit on
24 page two, so you might not find it.

25 A Yes, Exhibit Two is the Commission's Form C-105, the

1 completion form on this well. All the information, as I
2 previously stated, is on here and also the treatment, the
3 completion treatment is listed.

4 We acidized originally when we drilled the well. We
5 acidized down the drill pipe to the bottom of the hole and
6 up to the -- over the entire open-hole section. Then we
7 re-acidized at the top of the hole, through the tubing and
8 we washed the acid back and forth across the best zones of
9 porosity in the well. So, we have acidized with a total of
10 twenty thousand gallons of fifteen percent hydrochloric acid.

11 Q Was this well logged, Mr. Abbott?

12 A Yes, sir.

13 Q Please refer to what has been marked Exhibit A and
14 tell what it is and what it shows?

15 A Exhibit Three?

16 Q Three, yes.

17 A This is a log of the well, a sidewall neutron
18 porosity log. It shows -- we've marked the tops on the wells
19 on the formations in this well on the log but it is very
20 interesting that this log shows that there is excess in some
21 sections in the San Andres of over twenty percent porosity
22 and quite a lot over ten percent so it is a pretty good
23 disposal well but it just takes a little pressure to get the
24 water away from the wellbore.

25 Q Did you run a bottom-hole pressure survey?

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1 A Yes, sir.

2 Q Is that what has been marked as Exhibit Four?

3 A Yes. Exhibit Four shows the bottom-hole pressure
4 survey which we ran approximately four days after we finished
5 our last acid job on the well. At that time the well -- we
6 had flushed the acid out of the tubing and casing with fresh
7 water and the well had been shut in. When we ran the bottom-
8 hole pressure the actual tubing on the well was on a vacuum
9 so it showed that the water level had dropped by being shut
10 in and it shows that the static fluid level was at five
11 hundred and seventy-five feet. Now, you will have to realize
12 that this was fresh water in the well. Had it been brine
13 we would have had a lower fluid level, although we would have
14 had the same bottom-hole pressure. The bottom-hole pressure
15 gauge was run to approximately the bottom of the tubing. We
16 didn't go into the open hole.

17 Q All right.

18 A We ran this to show us that the San Andres in that
19 area wasn't under pressure, it actually had a fluid level
20 down at five hundred and seventy-five feet.

21 Q Mr. Abbott, you were actually in charge of paying
22 for this well, were you not?

23 A Yes, sir.

24 Q How much has Agua, on behalf of the operators, spent
25 toward the drilling and completion of this well to date?

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1 A Well, at the present time we have spent on the well,
2 a hundred and fifty-seven thousand, three hundred and ninety-
3 four dollars.

4 Q How much do you anticipate spending on the well
5 itself in the immediate future?

6 A Well, we expect to -- our original AFE was a
7 hundred and sixty-three thousand, three hundred and ninety,
8 so we will spend some more money completing it.

9 Q How much do you anticipate spending to complete the
10 well and the system and connect the system to it?

11 A Our original AFE was two hundred and sixty-nine
12 thousand and twenty dollars. At the present time we have
13 spent a total of a hundred and seventy-six thousand, five
14 hundred and eighty-two dollars.

15 Q Do you anticipate spending the rest of it or more?

16 A Yes, sir. Since this original order was issued
17 limiting us to the hundred pounds of pressure we haven't
18 proceeded with installing the lines or terminal facilities.

19 Q When you completed the well what did you determine
20 about the possibility or probability of injecting sufficient
21 water to make the well feasible with a hundred pound pressure
22 limitation?

23 A Well, when the order was issued we were worried
24 about this hundred pound limitations, so we did call a meeting
25 of the various parties and discuss this before we proceeded to

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1 drill the well.

2 Q Well, is it now possible for you to inject economic
 3 amounts of water into this well at a hundred pound pressure?

4 A No, sir, it isn't.

5 Q What pressure do you feel it would require to enable
 6 you to dispose of the water that must be disposed of?

7 A We recommend a limit of twelve hundred psi wellhead
 8 pressure. It may take less than that but I would hate to
 9 guess.

10 Q To your knowledge, Mr. Abbott, has the Commission
 11 imposed any similar restrictions on any other disposal wells
 12 in southeastern New Mexico?

13 A Not that I know of, no, sir.

14 Q Has there been any requirement for pop-off valves
 15 on any of these wells?

16 A No, sir.

17 Q Do you know of any restrictions as to pressure on
 18 any injection wells?

19 A No, sir, I don't know of any restrictions on
 20 pressure.

21 Q Mr. Abbott, I believe you testified that this water
 22 is being disposed into the San Andres formation?

23 A Yes, sir.

24 Q Please refer to what has been marked as Exhibit
 25 Five and show what that shows in connection with this well

1 with relation to the structure?

2 A Exhibit Five is a structure map drawn on the top
3 of the San Andres in this immediate area. Our SWD A-22 is
4 marked by a red dot in the Unit letter A of Section 22,
5 22, 37. It shows that this well is located down structure
6 or down the flank of a small structure. To my knowledge
7 there is no San Andres producing wells in the immediate area.
8 A couple of miles away, up north in Section 2 and the north
9 side of Section 11 there are some producing San Andres wells
10 but they are located higher on the structure.

11 Q Was this considerably lower on the structure than
12 the producing wells?

13 A Yes, sir.

14 Q Do you know, are there any other injection wells or
15 salt water disposal wells in the area?

16 A Yes, I understand that Anadarko has a disposal well
17 in the area.

18 Q And is that well shown on this?

19 A No, I don't believe it is shown on this.

20 Q Do you know where it is?

21 A I have it listed on another exhibit, I believe.

22 Q Referring to what has been marked as Exhibit, I
23 believe Six, which is the map on the wall, do you have any
24 further comments or explanations concerning this exhibit?

25 A No, just to point out there are approximately a

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1 hundred miles of gathering lines in this Blinebry-Drinkard
2 salt water disposal system. All but one of the gathering
3 lines is a gravity line. It is necessary to pump a little
4 water up from the south to the location at the SWD H-35.

5 Q Are there any other systems operating in this
6 immediate area?

7 A Not that I know of, unless you could consider the
8 Anadarko disposal system.

9 Q In the event that it is necessary to dispose of
10 water elsewhere than in the area served by your system, where
11 would the water have to be taken?

12 A I don't know. It would have to be taken out of
13 the area. Of course, when you take it away from the producing
14 wells, you have no history on the formations, so I have no
15 idea which direction you would go away from this area.

16 Q Before drilling the present well did you make a
17 study to determine the most likely place to drill the well?

18 A Yes, we made a study and picked an area that we
19 thought would be the best spot to drill a disposal well,
20 a spot that reflected permeability and porosity and also
21 lost circulation when the wells were drilled and also it
22 had to be located on top of the ground so that our salt water
23 gathering lines could gravity to that location.

24 Q Mr. Abbott, have you had an occasion to review the
25 salt water disposal systems and the production therefrom in

1 southeastern New Mexico for the years 1974 and 1975?

2 A. Yes.

3 Q Are these generally represented by what has been
4 marked as Exhibits Eight-A and Eight-B?

5 A Yes, Eight-B is a summary of disposal and also
6 injection wells in 1975 and Eight-A is a comparable listing
7 of wells in 1974.

8 Q Basically what does this show you?

9 A Well, it is shown on our Exhibit Seven. We have
10 sort of consolidated the tabulation. Of course, I have
11 discussed the Agua SWD H-35. In November of '74 we were
12 disposing at seventeen hundred and fifteen pounds, in
13 December of '75 it was shut in. Anadarko's salt water
14 disposal well in the San Andres, their Walden No. 4, in 1974
15 had twelve hundred pounds injection pressure and in December of
16 '75 had twelve hundred. The Armour-Gulf State No. 1 disposal
17 well, also in the San Andres --

18 Q Excuse me, let me interrupt you for the Commission.
19 These figures are cumulative as are pointed out on Exhibit
20 Seven, is that right?

21 A. Yes.

22 Q You are referring to Exhibit Seven when you are
23 testifying now?

24 A. Yes.

25 Q All right.

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1 A. Getting to the Armour well, in '74 that had
2 thirteen hundred pounds and in December of '75 it had twelve
3 hundred pounds. Then go to the Anadarko water flood, Langlie-
4 Mattix Penrose Queen Unit, a forty-seven well average, in
5 November of '74 the average pressures were eighteen, oh, three.
6 These were pressures that were turned in to the Commission
7 and in December of '75, that is the same forty-seven well
8 average, is fifteen hundred and eighty-two psi. These wells
9 are injection wells into the Queen formation.

10 Petro-Lewis the same way, a twenty-three well
11 average. In '74 their average pressure was sixteen, fifty-
12 nine and in '75 it was sixteen, seventy.

13 Skelly Penrose A, eighteen hundred and seventeen,
14 forty-three. Skelly Penrose B, seventeen, fifty and seventeen,
15 oh, six.

16 And there was one well, I don't know how, it's an
17 injection well, Anadarko's Coal No. 3 showed a thousand pounds
18 but in '75 it wasn't available. It may be shut in, I don't
19 know. And also their Walden Well No. 6 wasn't available in
20 '74 but shows a thousand pounds in '75.

21 Continental has an injection well, Elliott A-18,
22 in November it showed three hundred and twenty pounds and
23 in December fourteen hundred pounds.

24 Q. Are all of these wells in what has been designated
25 as a problem area?

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- 1 A Yes, sir.
- 2 Q Are they basically in this area shown by this map?
- 3 A Yeah, I don't think it is delineated on the map but
- 4 it is a thirty-six section area.
- 5 Q Mr. Abbott, you might put this map which is
- 6 Commission Exhibit A in Case 5377, the original case and I
- 7 believe it delineates the problem area. You might put this
- 8 on the wall so you could refer to it for the Commission.
- 9 A This problem area is outlined in red on the map
- 10 furnished by the Commission. It is Exhibit A in Case 5377.
- 11 Q Would you, maybe this would help so you can get
- 12 a little closer to it. I don't know if the Commission can
- 13 see it or not.
- 14 Would you point out your proposed well, or the
- 15 well that you have completed in Section 22?
- 16 A Well, the well is up here in this area, Unit, letter
- 17 A of Section 22.
- 18 Q Then where is the Anadarko well?
- 19 A The Walden No. 4 Well, I don't know exactly where
- 20 it is but it's --
- 21 Q What Section is it in?
- 22 A It's in Section 15, Township 22 South, Range 37
- 23 East.
- 24 MR. NUTTER: Unit letter K.
- 25 A Unit letter K, right up here in this area. It looks

1 like about three-quarters of a mile away from our SWD A-22.

2 Q It is in the section immediately north, 15 is
3 immediately north of 22?

4 A Yes, sir.

5 MR. JENNINGS: With Mr. Nutter's permission we
6 would like to mark that map as Exhibit Ten and ask permission
7 at a later date to furnish the Commission a copy of it.

8 MR. RAMEY: All right.

9 Q (Mr. Jennings continuing.) Do you have any more
10 comments about the injection and disposal wells in the area,
11 Mr. Abbott?

12 A No. I just want to point out that the injection
13 pressures of wells being used to waterflood the Queen look
14 like they are excessively high. Also I want to point out
15 that most of the break through that I have understood in
16 the area has occurred above the Queen and it seems to be the
17 fracturing and water migrating across the salt section, the
18 salt section in this area.

19 Q Mr. Abbott, have you made or caused to be made,
20 a survey of the casing and cementing programs of all wells
21 within one mile of the Agua A-22 disposal well?

22 A Yes, sir, we did a --

23 Q Has that been tabulated on what has been marked as
24 Exhibit Nine?

25 A That's right.

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1 Q Would you please refer to that and tell about the
2 tabulation that you made?

3 A This tabulation was made from Conservation Commission
4 records made available in the Hobbs office and all of the wells
5 in a radius of one mile from our SWD A-22 are listed here,
6 showing the location, showing the pipe in the wells, also the
7 cementing program and the total depth, and the plug-back
8 depth.

9 Q Generally does it show that there are any apparent
10 problem wells in the area?

11 A I have looked it over carefully and I haven't found
12 any problem wells. Most of the wells that penetrated the
13 San Andres formation are equipped properly and are cemented
14 properly. Now, some of them have been worked on recently due
15 to Commission orders.

16 Q To give us a specific example, would you refer to
17 the first wells surveyed there and show generally what it
18 shows about the wells and the casing and cementing programs?

19 A Well, the Amerada-Hess Corporation No. 1 Walden
20 is located in Unit letter K of 15, Township 22 South, Range
21 37 East. The thirteen-and-three-eighths inch casing was set
22 at a hundred and seventy feet with two hundred and twenty
23 sacks of cement. Then there is an eighth-and-five-eighths
24 inch casing set at twenty-seven hundred and fifty feet with
25 a thousand sacks of cement. The five-and-a-half inch is set

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1 at seventy-eight, seventy, which is also a total depth, with
2 six hundred sacks, so it looks like they are adequately
3 protected in that area.

4 Q Mr. Abbott, in your opinion would the injection of
5 water at the pressure of twelve hundred pounds per square
6 inch in your H-32 well affect any of the wells listed on what
7 has been marked as Exhibit A?

8 A In our A-22 well?

9 Q Yes.

10 A No, sir, I don't believe they will affect these
11 wells. What you have to realize on an injection well, the
12 pressure reflected at the surface is, of course, the pressure
13 of the wellbore, and referring to the log of our well and
14 the history of the area, I believe the pressure will
15 dissipate rapidly when it gets away from this disposal well,
16 and it will approach the static bottom-hole pressure in the
17 San Andres reservoir.

18 Q Do you feel that the disposition of the water in
19 this well is in the interest of conservation and will prevent
20 waste?

21 A Yes, sir.

22 Q Do you feel that it will in any way impair the
23 correlative rights of any of the operators in the area or
24 elsewhere?

25 A No, sir.

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1 MR. JENNINGS: Pass the witness.
2 MR. RAMEY: Any questions of the witness?
3 MR. KELLAHIN: If the Commission please.
4 MR. RAMEY: Mr. Kellahin.
5 MR. KELLAHIN: Before beginning my cross examination
6 of Mr. Abbott, I would like the Commission to incorporate
7 the record of Case 5592. That was the hearing before the
8 examiner on November 19, 1975 which resulted in Order No.
9 R-5137 and that authorized this particular disposal well. I
10 would like you to take administrative notice of the testimony
11 and record in that case and incorporate it into this case.
12 MR. RAMEY: Any objection, Mr. Jennings?
13 MR. JENNINGS: No, sir.
14 MR. RAMEY: All right, Mr. Kellahin.

CROSS EXAMINATION

17 BY MR. KELLAHIN:
18 Q Mr. Abbott, what is the volume of water per day
19 currently being disposed of in the C-2 well?
20 A At the present time we are disposing of approximately
21 four hundred barrels an hour, that's a twenty-four hour
22 average. This is higher than the produced water in the area
23 because for the last past week and a half we are bleeding back
24 our SWD H-35 and disposing of that water. Normally it would
25 run around three hundred and fifty barrels an hour.

1 Q And somewhere in the neighborhood of nine thousand
2 to ninety-five hundred barrels of water a day?

3 A Yes, sir.

4 Q The A-22 Well, if I understand you correctly, will
5 be used to replace the volume currently disposed of in the
6 C-2 Well?

7 A No, we will continue to use the C-2 Well, so the
8 volume of water that will be disposed of in the SWD A-22 will
9 be approximately two hundred barrels an hour.

10 Q What is the maximum volume of barrels of water per
11 day that you can inject in your subject disposal well at a
12 surface pressure of twelve hundred pounds per square inch?

13 A I don't know exactly, but during the last acid
14 job in a pumping test we did inject at the rate of nine
15 barrels per minute at twelve hundred pounds.

16 Q Nine barrels per minute would turn out to be how
17 many barrels of water a day?

18 A I don't know. It would be nine times sixty, times
19 twenty-four hours.

20 Q It would be about twelve thousand barrels?

21 A Right. At this time we wouldn't inject that volume
22 steadily.

23 Q Do you anticipate the need of ever having to inject
24 that twelve thousand barrels of water per day?

25 A I don't know, it would be the result of the water

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1 increasing in that area.

2 Q If the Commission approves your requested applica-
3 tion for twelve hundred pounds per square inch at the surface,
4 then you would be authorized if your need should require it,
5 to dispose of up to twelve thousand barrels of water per day?

6 A Yes, sir.

7 Q All right, in your testimony on November 19th before
8 the examiner of the Commission, in fact you so testified to
9 that effect, did you not, you said that you had applied for
10 administrative approval for approximately twelve thousand
11 barrels of water per day and that at the present time you
12 anticipated your needs at about forty-eight hundred barrels
13 of water per day?

14 A Yes, sir.

15 Q And are those still your current needs?

16 A As far as I know, yes.

17 Q So you have every reason to expect that you would
18 need to dispose of some twelve thousand barrels of water per
19 day in the future?

20 A Sometime in the future, maybe five or ten years.

21 Q Will your A-22 Well take any water on vacuum?

22 A Yes, I don't know exactly what. It would be a
23 small rate.

24 Q How much is a small rate?

25 A Oh, I would say ten barrels an hour.

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1 Q When you drilled this well you had every reason
2 to believe that it would in fact take water on gravity flow?

3 A Yeah, we hoped it would.

4 Q And that was your testimony before the Examiner on
5 November 19th, 1975, you testified to the effect that, "We
6 think this well will make a good disposal well and take
7 water on gravity"?

8 A Yeah, I qualified my answers pretty well.

9 Q Okay. Subsequent to the testimony on November 19th
10 and the time you commenced the A-22 Well, what was the date
11 you commenced drilling the A-22?

12 A January 26, 1976.

13 Q Mr. Jennings asked you on direct examination awhile
14 ago, if prior to drilling this well on January 26th, 1976,
15 had you made a study of the area to determine the most feasible
16 location for your disposal well and your answer was, "yes"?

17 A Yes.

18 Q Subsequent to your testimony on November 19th,
19 1975 and prior to the commencing of the drilling of the well
20 in January, what studies, if any, did you make to determine
21 other alternative sites other than the A-22 site?

22 A We looked over the entire area that it would be
23 practical to transmit our water from the gathering lines, so
24 it ended up in, I believe it was a four or six section area
25 that we concentrated on.

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1 Q As of the hearing on November 19th, you had determined
2 in your own mind that the site for the A-22 was in fact the
3 best site?

4 A Yes, sir.

5 Q Why then after the nineteenth of November did you
6 make additional studies?

7 A I don't know if we made additional studies after
8 that. If I testified at the hearing for the A-22 that we
9 had made the studies that was when we made the studies and
10 not after the hearing and before we drilled the well.

11 Q In the record of the hearing on November 19th I
12 posed the question to you: "Instead of injecting water at
13 your proposed location in an area of some concern, what
14 alternatives have you examined to give you a different
15 disposal area other than this particular site?" And your
16 answer: "We haven't at the present time looked at any other
17 area in that this hearing concerning this area will be
18 continued until today." So, I gather from your answer on
19 November 19th that you had not considered any other area than
20 the A-22 site, then you tell me that subsequent to that date
21 you made no other studies?

22 A I want to clarify our A-22 site. I consider it the
23 location to drill a well. Now, any other areas I interpret
24 to be outside of the practical area for disposal of this
25 Blinebry-Drinkard SWD System.

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1 Q Mr. Abbott, have you made a study of and have you
2 determined what the fracture pressure is in the area of your
3 disposal well?

4 A No, sir, we have not.

5 Q You have not. In your opinion have you fractured
6 the San Andres formation?

7 A No, sir.

8 Q What treatment have you made of that well?

9 A Twenty thousand gallons of fifteen percent acid.

10 Q Have you made a calculation of the acidizing treat-
11 ment and pressure to determine whether or not that fractured
12 the San Andres formation?

13 A No, sir, but knowing the pressures that we acidize
14 with, I don't think we fractured the formation.

15 Q You testified awhile ago on direct examination that
16 Anadarko in their waterflood project had some forty-seven
17 injection wells, is that correct?

18 A Yeah, that was the forty-seven wells that we used
19 in comparing pressures in the November of '74 and December
20 of '75.

21 Q Do you know what the total volume per day of
22 injection water is for the entire Anadarko flood?

23 A No, sir, I don't.

24 Q You testified on your direct examination that you
25 did not believe that injection of water in the A-22, up to a

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1 pressure of twelve hundred pounds per square inch at the
2 surface would have any adverse effect on the remedial work
3 done in the offsetting wells, is that correct?

4 A No, sir, if the remedial work is done properly it
5 shouldn't be adverse to these wells.

6 Q I show you what has been introduced at the hearing
7 on November 19th as Anadarko Exhibit Number One. It has
8 indicated on it in red those wells requiring remedial work in
9 an area of one mile from your disposal well on your Exhibit
10 Number Eight, I believe it was, that you introduced today.
11 In compiling Exhibit Number Eight, have you taken into
12 consideration all of the wells as indicated on Anadarko's
13 Exhibit Number One? I'm sorry it is Exhibit Number Nine.

14 A Yes, we have looked at all of those wells in that
15 area that the information has been submitted to the Hobbs
16 Office of the Conservation Commission.

17 Q Based upon your studies and opinions, you are
18 absolutely confident that the use of this disposal well as
19 you propose will not do damage to the remedial work in these
20 offsetting wells?

21 A No, sir.

22 Q Are you willing to indemnify Anadarko or any other
23 offsetting operators in the event that further remedial work
24 is required?

25 MR. JENNINGS: I would answer that, no.

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1 Q (Mr. Kellahin continuing.) I believe you testified
2 under direct examination, Mr. Abbott, about the structural
3 relationship of the A-22 well to the producing wells in the
4 Anadarko Unit, would you tell me again what your testimony
5 was?

6 A I testified that we had a structure map drawn on
7 the top of the San Andres and I was trying to show in this
8 exhibit that the location of the A-22 well was located down
9 structure from any producing wells in the San Andres formations.
10 I didn't refer to the Queen formation.

11 Q Can you locate for us or do you know which wells
12 in this area that have been drilled or produced at a depth
13 lower than the A-22, regardless of whether or not they are
14 still producing?

15 A No, it would show on our list of wells, it would
16 show on our Exhibit Number Nine.

17 Q Are there any other zones in your disposal well,
18 other than the San Andres, that could be used for the disposal
19 of water?

20 A No, sir.

21 MR. KELLAHIN: Thank you, Commissioner, we have
22 no further questions.

23 MR. RAMEY: Any other questions of the witness?

24 CROSS EXAMINATION

25 BY MR. RAMEY:

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1 Q Mr. Abbott, you testified that you thought the
2 pressure would dissipate rapidly when you inject water into
3 the San Andres?

4 A Yes, sir, in this A-22 well.

5 Q What is the pressure presently in your H-35?

6 A At the present time there is nine hundred pounds on
7 the tubing.

8 Q Is that flowing pressure?

9 A No, the actual flowing pressure is about eight,
10 seventy-five.

11 Q And this well has been shut in since September of
12 '75?

13 A Yes, sir.

14 Q It doesn't dissipate too rapidly in that area then?

15 A No, sir. We consider the location of this A-22
16 to be a very much better location.

17 Q Do you have any idea, I notice on this exhibit that
18 Mr. Kellahin referred you to awhile ago, there are three
19 wells on the same one hundred and sixty acre tract that were
20 listed as problem wells?

21 A Which wells are they?

22 Q The Amerada, it looks like E Wood wells.

23 A All right.

24 Q I assume that those wells have probably been
25 perforated and squeezed at this time?

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1 A. Most of them have. Wood No. 5, for instance, has
2 been perforated, two holes at thirty-eight hundred feet and
3 squeezed with three hundred and seventy-five feet and --

4 Q With three hundred and seventy-five sacks?

5 A With three hundred and seventy-five sacks and then
6 two holes were perforated at thirty-four, fifty and squeezed
7 with two hundred and fifty sacks in the top of the cement in
8 the eight-and-five-eighths inch pipe at twenty-four, thirty.

9 Q Do you know what squeezed pressure they are?

10 A No, sir.

11 Q Do you think the squeezed pressure was ample to
12 overcome any pressures that might be encountered by your
13 injection water in this A-22?

14 A I believe the well used in excess of six hundred
15 sacks from thirty-eight hundred feet on up above thirty-four,
16 fifty, so it should have solid cement up to twenty-four,
17 thirty.

18 MR. RAMEY: Any other questions of the witness?
19 Mr. Arnold?

20

21

CROSS EXAMINATION

22 BY MR. ARNOLD:

23 Q Mr. Abbott, you said the A-22 well would take
24 ten barrels an hour on vacuum?

25 A I imagine. I'm using experience from that, but not

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1 much more than that.

2 Q At what point do you start getting a big pressure
 3 build up when you are pumping into it, at what rate?

4 A I don't remember the pressures we used but it was
 5 pretty immediate we would start getting the pressures when
 6 we were pumping into it.

7 Q This was just due to the lack of permeability in
 8 the section you were pumping into?

9 A Yes, I think it is locally around the wellbore.
 10 As soon as you shut the pumps down the pressure will start
 11 dropping.

12 Q That is what you base your opinion on that the
 13 pressure would dissipate?

14 A Yes.

15 MR. ARNOLD: That's all.

16 MR. RAMEY: Any other questions? The witness may
 17 be excused.

18 MR. JENNINGS: I have a couple on redirect.

19
 20 REDIRECT EXAMINATION

21 BY MR. JENNINGS:

22 Q Mr. Abbott, I believe you testified that you con-
 23 templated at sometime it would be necessary to dispose of
 24 twelve thousand barrels per day?

25 A It may be. The history of this area is that the

1 water is increasing. I remember I did turn in a previous
2 exhibit which shows the increase in the water disposed in our
3 system.

4 Q Do you have more than one well in the area?

5 A Yes, we have a total of three disposal wells now,
6 with one shut in.

7 Q If it is necessary to dispose of as much as twelve
8 thousand barrels, do you contemplate using these other wells?

9 A We contemplate using the other wells and possibly
10 drilling more disposal wells or recompleting disposal wells.

11 Q You spoke of the H-35 well, after the well was shut
12 in in August did you at a later date test the well to see if
13 there was in fact communication?

14 A Yes, sir, after being shut in, we ran a radioactive
15 tracer survey. This well was shut in by order, I think it was
16 the nineteenth of September of '75 and the next month we did
17 run a radioactive tracer survey and a temperature survey and
18 it showed that ninety percent of the water being injected in
19 the well was going down the hole from the bottom of the
20 seven-inch casing. Ten percent was shown going out immediately
21 at the casing shoe. There was no evidence of any water coming
22 up behind the seven-inch pipe.

23 Q Do you hope eventually this well too will be available
24 for disposal purposes?

25 A For limited disposal, yes.

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1 Q Did you testify or is it a fact that the A-2 well
2 is, you are disposing in that on gravity?

3 A The C-2 well, yes, sir.

4 Q The C-2?

5 A Yes, we are disposing under gravity.

6 Q Mr. Abbott, were exhibits, other than Three and Ten,
7 prepared by you or under your supervision?

8 A Yes, sir.

9 Q I believe Number Three is a Schlumberger log which
10 was prepared by Schlumberger?

11 A With the exception we have marked the formation
12 tops on that log.

13 Q And I believe Exhibit Number Ten was offered in a
14 prior case and it was submitted by Mr. Nutter?

15 A Yes, sir.

16 MR. JENNINGS: We would offer Exhibits One through
17 Ten.

18 MR. RAMEY: Without objection they will be accepted
19 into the record.

20 (THEREUPON, Applicant's Exhibits One
21 through Ten were admitted into evidence.)

22 MR. RAMEY: Any questions of the witness? He may
23 be excused.

24 (THEREUPON, the witness was excused.)

25 MR. KELLAHIN: If the Commission please, we would

1 call Mr. Kernaghan.

2

3

DAN KERNAGHAN

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

6

7

DIRECT EXAMINATION

8

BY MR. KELLAHIN:

9

Q Mr. Kernaghan, would you please state your name
10 and employment?

11

A My name is Dan Kernaghan, I'm employed by Anadarko
12 Production Company as Division Evaluation Engineer.

13

Q Mr. Kernaghan, did you testify as an expert witness
14 in Case 5592 heard on November 19, 1975 concerning the first
15 request for permission to drill the subject disposal well?

16

A Yes, I did.

17

Q And are you familiar with Anadarko's waterflood
18 project in this particular area?

19

A Yes, I am.

20

Q Have you previously testified and had your qualifica-
21 tions as an expert witness accepted and made a matter of
22 record?

23

A Yes, I have.

24

MR. KELLAHIN: If the Commission please, are the
25 witness's qualifications acceptable?

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1 MR. RAMEY: Yes, they are, Mr. Kellahin.

2 Q (Mr. Kellahin continuing.) Mr. Kernaghan, does
3 Anadarko maintain and operate a waterflood project in this
4 area?

5 A Yes, we do, the Langlie-Mattix Penrose Sand Unit.

6 Q What is the current status of that waterflood project
7 with regard to volumes of water to be injected through your
8 injection wells?

9 A The current status is that we are currently injecting
10 a hundred percent of withdrawal that amounts to about seven
11 thousand barrels a day total for the project.

12 Q You are limited by prior Commission order to one
13 hundred percent, is that right?

14 A Yes.

15 Q Where is the Agua disposal well No. A-22 in relation
16 to the Anadarko waterflood?

17 A Well, it is located within the Unit boundary in
18 the northeast corner of the Unit, approximately a half a mile
19 from the Unit boundary.

20 Q Would you take the pointer and outline briefly on
21 Agua, Inc. Exhibit Number One, the outer perimeters of the
22 project? On Number Six.

23 A Okay. Here is their proposed injection well. Our
24 Unit boundary comes along the north side of Unit 22 and takes
25 in the western-most quarter of Sections 23 and 26 and comes

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1 back to the section line and takes in Sections 33 and 34,
2 essentially, as well as Sections 21 and 28. There is some
3 areas of this that extend over into neighboring sections but
4 this is basically the Unit outline.

5 Q I think the point of information of this brief
6 sketch might be helpful and I ask you to identify it and we
7 will identify it as Anadarko's Exhibit Number One.

8 A It is an exhibit showing the Township 22, 37 and
9 the producing wells located therein.

10 Q And what is the dark colored in area?

11 A Well the dark colored in areas are Anadarko's
12 producing leases. The Langlie-Mattix Sand Unit is the southern-
13 most portion of the dark area.

14 Q And have the three disposal wells of Agua, Inc.
15 been properly located on the plat?

16 A Yes, they have.

17 MR. KELLAHIN: If the Commission please, I move
18 the introduction of Anadarko's Exhibit Number One.

19 MR. JENNINGS: No objection.

20 MR. RAMEY: Without objection it will be admitted.

21 (THEREUPON, Anadarko's Exhibit Number One
22 was admitted into evidence.)

23 Q (Mr. Kellahin continuing.) You mentioned just now
24 the total volume of water currently being injected by Anadarko
25 in the waterflood on a barrel per day basis, that was what,

1 seven thousand, you said?

2 A Seven thousand barrels a day. This amounts to
3 about a hundred and fifty barrels per day per injection well,
4 which is considerably less than ten barrels a minute.

5 Q Mr. Kernaghan, why has Anadarko continually objected
6 to Agua, Inc.'s application for a disposal well?

7 A Well, we feel it is inadvisable to introduce the
8 volumes of water that they are speaking of, that they are
9 requesting, into an area that has already shown to be a problem
10 area. This is a new development, it is the introduction of
11 a factor that was not there previously and we feel it is in-
12 advisable to stress the remedial work that has been done to
13 correct these problem wells with the introduction of this
14 volume of water.

15 Q Have you made a study of the fracture pressures in the
16 San Andres formation with regard to the subject disposal well?

17 A Yes, the fracture pressures that we have seen in
18 the area range from a thousand to twelve hundred pounds.

19 Q That is a thousand to twelve hundred pounds per
20 square inch at the surface?

21 A Yes.

22 Q In your opinion will the approval of the requested
23 application to increase the pressure in the disposal well
24 cause fracturing of the San Andres formation?

25 A Yes, I think it will. The volume they are speaking

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1 of injecting is equal to or above what wells are normally
2 acidized with. Large fracture jobs are given higher rates
3 but we acidize and break down the formation at lesser rates
4 than this.

5 Q What kind of fractures would you anticipate?

6 A Well, I would anticipate vertical fractures that
7 follow the zone of greatest permeability, which would be within
8 the San Andres unless they hit a zone of weakness around a
9 well or the penetrations.

10 Q Would you be able to give an opinion with regards to
11 whether or not these fractures would be confined to the
12 San Andres formation?

13 A I think they would be confined to the San Andres
14 unless they hit a zone of weakness.

15 Q Mr. Abbott discussed awhile ago on his direct
16 examination Anadarko's disposal well in the area, I believe
17 that was called a Walden?

18 A Walden No. 4.

19 Q Walden No. 4? What is its current status?

20 A Well, this well is currently inactive. It is used
21 sporadically only to dispose of water in the event that our
22 waterflood pumps on the Coal and Walden projects are down for
23 some reason. The water is normally used in an approved
24 waterflood project and injection only takes place when these
25 are broken down. It has been used intermittently, only

1 intermittently for the last several years.

2 MR. KELLAHIN: That concludes my direct examination.

3 MR. RAMEY: Any questions of the witness?

4 MR. JENNINGS: I would like to ask a few questions.

5 MR. RAMEY: Mr. Jennings?

6

7

CROSS EXAMINATION

8 BY MR. JENNINGS:

9 Q Mr. Kernaghan, I believe you said that your SWD well
10 is shut down off and on?

11 A I said it was used intermittently. It is shut down
12 more than it is used.

13 Q Is it true, though, that you have disposed of some
14 two million barrels of water into that well?

15 A That is what has been reported and I assume that
16 that is true, yes.

17 Q You report the truth, I take it and that you are
18 currently disposing of nine thousand barrels an hour?

19 A Not now, it is not being used.

20 Q In '74?

21 A In '74, if that was what was reported that is what
22 we consider to be true.

23 Q And possibly '75 too?

24 A Whatever we reported in '75. The month of November
25 showed ten thousand barrels disposed, three hundred barrels

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1 a day.

2 Q Are you in charge of this well?

3 A Indirectly.

4 Q But you have testified that you only dispose of
 5 intermittently but you don't know how much you are disposing
 6 of, is that your testimony?

7 A That's correct. I can say that it has not been
 8 used in the last month.

9 Q Do you have pumps at the well?

10 A Yes, sir.

11 Q When you do dispose of it, at what pressure?

12 A Twelve hundred pounds.

13 Q Mr. Kernaghan, is there a pop-off valve on this
 14 well?

15 A No.

16 Q Is it necessary for you to pressure up to twelve
 17 hundred pounds to inject in this well?

18 A Yes.

19 Q I believe that you testified that you are injecting
 20 seven thousand barrels of oil per day?

21 A Water.

22 Q Water, excuse me.

23 A In our Langlie-Mattix Unit?

24 Q Yes.

25 A Yes.

1 Q Is all of that produced water or is some of that
2 water imported into the area from elsewhere?

3 A Three hundred barrels a day is produced and we
4 import seventeen hundred barrels a day.

5 Q You import seventeen hundred barrels a day?

6 A That is correct, or almost seventeen hundred. In
7 January we didn't inject quite seven thousand barrels.

8 Q Mr. Kernaghan, I believe at the last hearing you
9 testified that you had taken some samples, I believe, of the
10 Agua water, is that your testimony?

11 A That is correct.

12 Q Did you furnish the figures, the analysis to the
13 Commission as you had agreed?

14 A Yes, sir.

15 Q Would you be so kind as to furnish us one too?

16 A Yes, sir. To you or to Mr. Abbott?

17 Q To me.

18 A Okay.

19 Q You testified concerning the fracture pressure, of
20 the study you have made of the fracture pressures and I
21 assume this was solely in the San Andres formation?

22 A Yes.

23 Q Which wells was that made in?

24 A Our Walden 11, your own well, the U-13 and wells
25 on our Wortham lease up to the north, just south of the town

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1 of Eunice.

2 Q Was that in connection with your original injection,
3 or in connection with this hearing?

4 A In connection with this hearing.

5 Q Did you make any studies before you started disposing
6 into the San Andres formation in your Walden well?

7 A I was not there when we started injection. I don't
8 know whether studies were made or not.

9 Q Do you have any producing San Andres formation, any
10 wells producing from the San Andres formation?

11 A Yes, we do.

12 Q Where are those wells located?

13 A We have a well in Section 14, it is in location D
14 of 14, four or five hundred feet outside the one-mile radius
15 of your A-2 well. We have other wells on our Lou Wortham
16 lease in the north half of Section 11 that produces from the
17 San Andres.

18 Q Are you flooding the San Andres or wells in those
19 zones?

20 A No, we're not.

21 Q Would you locate your Walden well, is it in the
22 southwest-southwest of Section 15?

23 A Our Walden 4, no, it is in the northwest of the
24 southwest of 15. The injection well in the southwest-southwest
25 of 15 is a Queen injection well. It's part of our Coal-

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1 Walden Waterflood Project. I take it's in the southeast of
2 the southwest of 15.

3 Q Do your San Andres wells produce water?

4 A Yes.

5 Q Are you disposing of that or recycling it or what
6 are you doing with that?

7 A We are bringing that water down and using it in
8 our project, our waterflood project.

9 Q Is that water suitable for use in your project?

10 A Yes.

11 Q And it is being produced from the San Andres zone
12 in the same area as the A-22 well?

13 A Yes, it is.

14 MR. JENNINGS: I believe that's all.

15

16

CROSS EXAMINATION

17 BY MR. RAMEY:

18 Q Mr. Kernaghan, could you advise the Commission
19 just on what negotiations went on as to possibly using the
20 disposal water for injection into the project in this area?

21 A Okay. We had some discussions with Mr. Abbott about
22 taking their water and using it in our project, some cost
23 figures whereby they would sell us the water and we would
24 use it were discussed. We had previously taken older samples,
25 we had previously negotiated with them back in '71 or '72 to

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1 use that water when we contracted with Skelly to bring water
2 in from the outside and at that time we had taken some
3 limited samples and they showed the water to be compatible.
4 After the second set of discussions we took further samples
5 that indicated that this water was much poorer in quality
6 than what we were injecting and we did not feel that we could
7 take this water without it being cleaned up. The cost to
8 clean up the water would be excessive for us. In addition
9 we were reduced, you know, cut back on our injection at that
10 point and we could only take a very small portion of it.

11 Q So negotiations came to an end?

12 A Right, we felt that the next step, if that water
13 was going to be used in a waterflood project, it should be
14 used in all of the projects in the area.

15 MR. RAMEY: Thank you. Any other questions of the
16 witness? He may be excused.

17 (THEREUPON, the witness was excused.)

18 MR. RAMEY: Anything further, Mr. Kellahin?

19 MR. KELLAHIN: No, sir.

20 MR. CARR: We will call Mr. Clements.

21
22 LESLIE A. CLEMENTS

23 called as a witness, having been first duly sworn, was
24 examined and testified as follows:
25

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and position for the record, please?

A Leslie A. Clements, Deputy Oil and Gas Inspector, District One.

Q Mr. Clements, do your duties as Deputy Oil and Gas Inspector include witnessing certain tests that are required by Commission Rules and Regulations?

A Yes, sir.

Q Did you witness the Bradenhead tests which were taken pursuant to the provisions of Commission Order R-5003?

A Yes, sir.

Q Are you familiar with the subject matter of this case?

A Yes, sir.

Q What is the present status of the surveys on the wells in the general problem area?

A The Commission staff in Hobbs has just finished conducting these surveys. We finished the one prescribed by Order R-5003 on February 26th.

Q Okay, I'll hand you what has been marked as Oil Conservation Commission Exhibit A and ask you to refer to this and explain to the Commission what it shows?

A This is a tabulation of the results of the last

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1 quarterly Bradenhead surveys required by this order, Mr. Carr,
2 and it indicates that even after some nine months of the total
3 four hundred and fifty wells, we still have a problem with
4 point nine three percent of the wells. Nine point three percent.

5 Q Nine point three percent?

6 A Nine point three percent, yes, sir.

7 Q And this exhibit indicates only those wells in which
8 you have found some problems?

9 A Yes, sir.

10 Q Now, Mr. Clements, have you run tests in addition
11 to those in the problem area?

12 A Yes, sir.

13 Q And why did you run these tests?

14 A Because of the gas-contaminated domestic water
15 well in the area.

16 Q I would like you to refer to what has been marked as
17 Oil Conservation Commission Exhibit B and explain to the
18 Commission what that shows?

19 A This is a tabulation of the results of this test
20 that we conducted between January 26th and February the 5th
21 1976 and it indicates of a hundred and fifty-two wells surveyed,
22 forty-two percent of them had a problem.

23 Q What conclusions can you draw from the results of
24 these Bradenhead surveys?

25 A That even after extended workovers and some nine

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1 months of Bradenhead surveys we still have problems in this
2 area.

3 Q What is the remaining plan of the Commission concern-
4 ing the testing of the wells in this area?

5 A The Commission intends to extend the boundaries of
6 this survey to the northern city limits of Eunice as soon as
7 practical and as time permits.

8 Q Do you have anything further to add to your
9 testimony?

10 A No, sir.

11 MR. CARR: If the Commission please, I offer Oil
12 Conservation Commission Exhibits A and B.

13 MR. RAMEY: Without objection they will be admitted.
14 (THEREUPON, Oil Conservation Commission
15 Exhibits A and B were admitted into
16 evidence.)

17 MR. CARR: I have nothing further of this witness.

18 MR. RAMEY: Any questions of this witness?

19 Mr. Nutter?

20

21 CROSS EXAMINATION

22 BY MR. NUTTER:

23 Q Mr. Clements, on Exhibit A, this is the survey
24 prescribed by Order 5003 for four hundred and fifty wells, how
25 many wells exhibited a problem out of the four hundred and

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1 fifty?

2 A I haven't got a total tabulation on it, Mr. Nutter.
3 I could add these up.

4 Q You told me yesterday.

5 A Let me see, let me refer to my notes then. Forty-
6 three.

7 Q And that would be nine point three percent of the
8 total on the exhibit?

9 A Nine point three percent, yes, sir.

10 Q I think the exhibit would stand corrected there. It
11 would be nine point three percent instead of point oh nine
12 three?

13 A Yes, sir.

14 MR. NUTTER: Thank you.

15 MR. RAMEY: Mr. Jennings?

16

17 CROSS EXAMINATION

18 BY MR. JENNINGS:

19 Q Mr. Clements, after these months and these wells
20 still haven't complied, the operators have not complied with
21 the Order of the Commission, what action is contemplated, if
22 you know, by the Commission in connection with these default-
23 ing operators?

24 A Mr. Jennings, some of these are new problems that
25 have occurred, while some of them are older problems. We have

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1 written letters to these operators directing them to repair
2 these wells and I contemplate that punitive action will be
3 taken within a prescribed length of time.

4 Q Well, has any punitive action been taken or threatened
5 prior to this time in connection with these?

6 A In some cases punitive action has been threatened.

7 Q Do you feel that these operators will ultimately
8 comply with the Order of the Commission?

9 A Yes, sir, I sure do.

10 Q How long do you think it will take for them to
11 comply with your Order?

12 A I feel that we will have it finished at the time
13 the fourth quarter survey will be conducted.

14 Q Are you on a calendar year?

15 A Yes, sir.

16 Q And your testimony is that it will take some nine
17 months?

18 A Well, it has taken nine months on some cases, yes,
19 sir.

20 Q But I mean it will take nine additional months?

21 A No, sir, it will be one more quarter after this, the
22 next quarter, by the next quarter.

23 Q I don't understand your quarters, could you put a
24 date on it, I could understand that better?

25 A Okay, this quarter will end sometime after April,

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1 between April and May. We contemplate running the same survey
 2 in May.

3 Q You contemplate that at that time they will be taken
 4 care of?

5 A Yes, sir, they better be.

6 Q Are there any particular wells that are problem wells
 7 at this time or are they all problem wells?

8 A All of these listed on this tabulation here are
 9 problem wells.

10 MR. JENNINGS: I believe that's all. Thank you.

11
 12 CROSS EXAMINATION

13 BY MR. RAMEY:

14 Q Mr. Clements?

15 A Yes, sir.

16 Q Now, in previous orders covering this area, didn't
 17 the orders list definite wells that had to be worked on?

18 A Yes, sir.

19 Q And haven't those wells been worked on?

20 A Yes, sir.

21 Q So to date the orders of the Commission have been
 22 met by the operators?

23 A Yes, sir.

24 Q Required work, some work has been done by the
 25 operators?

1 A Yes, sir, with the exception of one well.

2 Q What well is that?

3 A Mrs. Wolfson. I had it listed here somewhere.

4 Do you know which one it is, Dan? Wolfson Oil Company Boyd
5 No. 1.

6 Q Do you know the ownership of that well at this
7 time?

8 A No, sir, it's in question, I think.

9 MR. JENNINGS: Is that well operated by Mr. Hendrix?

10 A No, sir, it is a plugged well.

11 MR. JENNINGS: It's plugged?

12 A Yes, sir.

13 MR. JENNINGS: I'm really not clear. I hate to
14 keep questioning, but what has been marked as Exhibit A are
15 not the wells that were listed as problem wells in Order
16 R-5003, or are they?

17 A Some of them may be.

18 MR. JENNINGS: Well, my understanding from your
19 testimony, all of the wells that were specifically numerated
20 in 5003, except the Wolfson Well, have been taken care of?

21 A As prescribed by this Order, yes, sir, but still
22 some other problems exist.

23 MR. JENNINGS: These are additional problems then?

24 A Yes, sir.

25 MR. JENNINGS: That's all.

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1 MR. NUTTER: In other words, Mr. Clements, some of
2 these are brand new wells that have demonstrated a pressure
3 on their casing or a flow for the first time?

4 A Yes, sir.

5 MR. NUTTER: And there hasn't been any chance to
6 get remedial work on them?

7 A Yes, sir.

8 Q (Mr. Ramey continuing.) But you have instructed
9 these operators that remedial action will have to be taken?

10 A Yes, sir.

11 Q Immediately?

12 A Yes, sir.

13 MR. JENNINGS: A number of them on the first page
14 that I've reviewed are gas problems, are they not?

15 A Yes, sir, it's indicative of some problem down hole.

16 MR. JENNINGS: Was that indicative of the water
17 being injected in some other well? That's a down-hole
18 problem.

19 A I feel that if gas or oil can occur on the surface,
20 so can water.

21 MR. JENNINGS: That's all.

22 Q (Mr. Ramey continuing.) I know the well here,
23 WEK Drilling Company Boyd in Section 22 of 23, 37, flow of
24 salt water from surface casing?

25 A Yes, sir.

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1 Q That's not a gas problem is it?

2 A No, sir. There are two up above it there in Aztec
3 also, Mr. Ramey, that are not gas problems.

4 MR. RAMEY: Thank you, Mr. Clements.

5 MR. KELLAHIN: I have one question.

6

7 CROSS EXAMINATION

8 BY MR. KELLAHIN:

9 Q What is the date of the surveys on Exhibit A?

10 A Exhibit A was surveyed between February 16th and
11 February 26th, 1976.

12 Q And the dates for the surveys for Exhibit B?

13 A January 26th through February 5th.

14 Q Exhibit A was done after Exhibit B?

15 A Yes, sir.

16 MR. KELLAHIN: Okay.

17 MR. RAMEY: Your Exhibit B, Mr. Clements?

18 A Yes, sir.

19 MR. RAMEY: Are these wells outside of the problem
20 area?

21 A Yes, sir, it lies just to the north of the problem
22 area.

23 MR. RAMEY: And that survey was taken for what
24 reason?

25 A As the result of a gas-contaminated domestic water

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1 well.

2 MR. RAMEY: But you also picked up water flows?

3 A Yes, sir.

4 MR. RAMEY: Oil flows, water flows and gas flows?

5 A Yes, sir.

6 MR. RAMEY: It looks like we have a separate problem
7 area, doesn't it?

8 A Yes, sir, it does.

9 MR. RAMEY: Or a bigger problem area?

10 A Yes, sir, a bigger problem area.

11 MR. RAMEY: Any further questions of the witness?

12 He may be excused.

13 (THEREUPON, the witness was excused.)

14 MR. RAMEY: Mr. Jennings, do you have anything
15 further?

16 MR. JENNINGS: That's all I have to offer.

17 MR. RAMEY: Mr. Kellahin, do you have any closing
18 statements?

19 MR. CARR: Before we go to the closing statements,
20 we have received a number of letters and Mr. Jennings has
21 requested that they be read into the record here. With your
22 permission I won't read all of the Gulf letter because it
23 contains a lengthy history of how the case came about and
24 just go into the material that hasn't been covered here today.

25 This letter is from Gulf Energy and Minerals

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1 Company, signed by Mr. R. F. Ward, Jr. (Reading.) A review
2 of the data published in the Monthly Statistical Report of
3 the New Mexico Oil and Gas Engineering Committee reveals that
4 salt water disposal wells in Township 22 South, Range 37 East
5 are operating at wellhead injection pressures as high as
6 twelve hundred psi. This review also revealed that waterflood
7 injection wells in Township 22 South, Range 37 East are
8 operating at wellhead injection pressures as high as two
9 thousand, ninety psi.

10 In order not to jeopardize the approximately
11 ten thousand barrels of oil per day produced from the four
12 hundred and thirty wells tied into Agua's Blinebry-Drinkard
13 system, Gulf Oil Corporation respectfully requests that the
14 Commission allow the disposal of water into Agua's Well No.
15 A-22 at wellhead injection pressures comparable to those
16 pressures allowed for other disposal and injection wells in
17 Township 22 South, Range 37 East. (End of reading.)

18 A letter from Mr. L. P. Thompson, Division Manager,
19 Production Department for Continental Oil Company in Hobbs
20 reads as follows: (Reading.) Continental Oil Company is one
21 of the owners of the Blinebry-Drinkard Salt Water Disposal
22 System operated by Agua, Inc. and is also a working interest
23 owner in Anadarko's Langlie-Mattix Penrose Sand Unit and in
24 Skelly's Skelly Penrose B Unit, as well as the operator of
25 various properties in the thirty-six section area which was

1 the subject of Cases Nos. 5377 and 5403. Continental operates
2 several properties which deliver substantial volumes of
3 produced water into the Blinebry-Drinkard Salt Water Disposal
4 System. We are aware of the pressure limitation placed
5 on Aqua in their drilling of a new disposal well and have
6 been concerned about the apparent inconsistency of this
7 limitation in comparison with the lack of limitation or less
8 stringent limitation placed on other injectors of water in
9 the area.

10 We should like to point out that the production of
11 crude oil should be encouraged in New Mexico in order to
12 supply the tremendous demand in the United States. Each
13 barrel of oil we do not produce in this country must be
14 imported. It is a fact of life that water must be produced
15 with a large part of our domestic oil production. The
16 Commission has directed that we must dispose of produced
17 water underground and we concur in this directive. We do
18 not believe that it serves the best interest of the State
19 of New Mexico or the United States to force operators of
20 leases to shut in those leases because the water cannot be
21 disposed of within the pressure limitation placed by the
22 Commission. We do not believe that it serves the best
23 interest of the industry for a new disposal well to be
24 restricted to a less pressure for injection of water than
25 is used, with Commission's apparent approval by other disposal

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1 systems in the same area.

2 We believe that if the Commission is unwilling to
3 relax the pressure limitation on the new disposal well that
4 it should give serious consideration to requiring the water-
5 flood project in the immediate area to substitute this produced
6 water in place of outside water which is piped into the area
7 for injection. The parties to such a water exchange should be
8 subject to the same compulsion or lack of compulsion in
9 arriving at mutually agreeable terms for such exchange.

10 Continental Oil Company respectfully urges the
11 Commission to take appropriate action to permit the produced
12 water now handled by the Blinebry-Drinkard SWD System to be
13 disposed of without unnecessary hardship to any of the parties
14 here involved. (End of reading.)

15 A letter from Phillips Petroleum Company, signed
16 by F. F. Lovering, Manager of the Southwestern Region reads:
17 (Reading.) Phillips is a member of the Aqua, Inc. operated
18 Blinebry-Drinkard Salt Water Disposal System. Water produced
19 in our Sims and New Mexico D Leases is disposed of through
20 this system.

21 Phillips supports Aqua, Inc. in its request for
22 approval to inject waste waters into the Blinebry-Drinkard
23 Salt Water Disposal Well No. A-22 at a surface injection
24 pressure not to exceed twelve hundred psi.

25 This well was drilled and completed in compliance

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1 with the authority granted in Order No. R-5137. After acid
2 treatment it is apparent that the well will not accept
3 satisfactory quantities of water at surface wellhead pressure
4 of not more than one hundred psi. The well is completed so as
5 to restrict fluid injection into only the San Andres zone and
6 is essential to the continued operation of the Blinebry-
7 Drinkard Salt Water Disposal System.

8 Your approval of this amendment of Order No. R-5137
9 is respectfully requested. (End of reading.)

10 A Mailgram from Union Texas Petroleum Company reads:
11 (Reading.) Gentlemen: This letter is written to request your
12 favorable action on the application of Agua, Inc. in Case
13 5644. The surface injection pressure limitation of one
14 hundred psi contained in Order No. R-5137 is unnecessarily
15 restrictive and could logically be increased to twelve hundred
16 psi under the conditions recited in Agua's letter to you dated
17 February 16th, 1976. (End of reading.) This is signed by
18 W. L. Hixon.

19 The Mobil Oil Corporation wrote the Commission. The
20 letter is signed by L. A. Davis, Area Operations Engineer in
21 Midland and it states: (Reading.) Mobil Oil Corporation, as
22 a participant in the Agua Blinebry-Drinkard Salt Water Disposal
23 System, recommends that the Commission approve the amendment
24 of Order No. R-5137 to provide for injection pressures up to
25 twelve hundred psi in Agua's Well No. A-22, as requested in

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1 Case No. 5644 on the March 10, 1976 hearing docket.

2 The production from many wells in the Eunice Area
3 depends upon the disposal capacity of the Agua Blinebry-
4 Drinkard Salt Water System. We believe that injection of salt
5 water into Well No. A-22 at pressures up to twelve hundred
6 psi is necessary and can be accomplished without harm to
7 producing reservoirs by the proper operation and monitoring
8 of the subject well. (End of reading.)

9 And finally, we have a letter from Mr. K. D. McPeters,
10 Vice President of Moranco and it reads: (Reading.) This
11 letter is to indicate our support of Agua, Inc. in Case 5644,
12 scheduled March 10, 1976. We urge the Commission to approve
13 the injection pressure of twelve hundred psi. (End of reading.)

14 MR. RAMEY: Now, any closing statements?

15 MR. JENNINGS: Well, I might just say a few words.
16 Agua, as everybody well realizes is the agent of the operators
17 in the area, we are commissioned with the problem we have been
18 fighting since December of 1974 and we at all stages have
19 attempted to comply with all of the orders and directives of
20 the Commission and it has not been easy.

21 When you review our history, we shut in the H-35
22 well before we were actually required to. We had another well
23 which we had hoped to dispose of the water in. After a
24 hassle with the County Commissioners and all of the land owners
25 in the area, we were able at an expense of a hundred thousand

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1 dollars to install a line to transmit the water to that site
2 and we asked permission to test another zone and Exxon got all
3 excited and they started fighting us and now we are producing
4 water in that zone and we have produced for five months. It
5 is temporarily taking care of the needs but to take care of
6 everyone's needs we have again elected to drill a well which
7 our people thought was the best located under the circumstances
8 and we have drilled a well at the expense of a hundred and
9 sixty-five thousand dollars. Again we are trying to alleviate
10 the situation. There is a lot of oil being produced, this is
11 probably one of the most prolific oil areas and there are
12 probably more wells in this area than there is any place in
13 the State, completed at a different horizon. We realize that
14 the State has a problem but ten thousand barrels of crude a
15 day is a whole lot. We have an alternative to truck the water
16 out of there and that is a tremendous responsibility.

17 You have heard the letters from the various operators
18 in the area and some of those I would point out are also in the
19 Anadarko flood, participants in there. I think that we have
20 a situation of one operator thinks that it would cause problems.
21 I don't know, this doesn't seem to be shared by the rest of
22 the operators and we are trying to take care of the situation
23 the best way we know how. We need the energy and the
24 Commission, and wisely so, requires that the water be put
25 under the ground and we are doing our best to put it there.

1 If we shut in these wells we have a real problem. We want
2 to cooperate with the Commission and we have done everything
3 we possibly could up to now and we will continue to do so.

4 MR. RAMEY: Mr. Kellahin?

5 MR. KELLAHIN: If the Commission please, I find
6 this particular case most distressing. One of the things
7 that bothers me most is the letters submitted for considera-
8 tion. All of these people have vested interests in Agua's
9 disposal well. It is not the Commission's fault that this well
10 is located where it is. If you will read the testimony from
11 the November 19th hearing you will find that Mr. Abbott didn't
12 make an extensive study of where else to put this well, he
13 put it the cheapest place he could find. We pointed out
14 alternative sites to him, yes, they were going to cost more
15 money, perhaps fifty percent more than the proposed location.
16 The Commission didn't present those problems, they were there
17 when Agua decided to drill the well in this particular
18 location. They assume that kind of risk. Why? Because it
19 was cheaper and they thought maybe we can get it into the
20 ground under gravity flow. They can't and now they are
21 trying to force the Commission into approving this well after
22 they have gone ahead and assumed the risk, expended the
23 moneys and they want to further increase the risk of the
24 hazards to this remedial work in the area. I think that
25 is totally ridiculous. It is the Commission's statutory duty,

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1 which I think they consistently and diligently exercise, to
2 deny the application. I don't see how else you can act.

3 We have seen from the testimony of Mr. Clements that
4 some of the remedial work has been completed and yet other
5 additional problems continue to occur. It is unfortunate that
6 this problem has befallen on you but it is not the Commission's
7 duty to grant it in light of the existing problems in this
8 area. I see that you have no other choice but to deny the
9 application.

10 MR. RAMEY: Anything further in this case? If not,
11 the case will be taken under advisement.

12 Mr. Kenyon?

13 MR. KENYON: I have a statement I would like to make.

14 MR. RAMEY: Would you identify yourself for the
15 record, please?

16 MR. KENYON: Yes, I'm Albert Kenyon, Production
17 Supervisor for John H. Hendrix Production and he is also an
18 operator in this area from Midland, Texas.

19 We would like to make an official objection to
20 the proposed increase of pressure in this disposal well. We
21 feel the problems encountered and in pursuance of Order R-5003
22 have not yet been solved. We have had had considerable expense
23 in complying with this Order and we feel that this increase
24 would tend to further compound the areas in this problem.
25 That's all I have.

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MR. RAMEY: Thank you, Mr. Kenyon.


If there is nothing further the Commission will
take the case under advisement.

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REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Certified Shorthand Reporter,
do hereby certify that the foregoing and attached Transcript
of Hearing before the New Mexico Oil Conservation Commission
was reported by me, and the same is a true and correct record
of the said proceedings to the best of my knowledge, skill and
ability.


Sidney F. Morrish, C.S.R.

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BEFORE THE
OIL CONSERVATION COMMISSION
Salt Lake, New Mexico

Case No. 5644 Sub No. 1

Submitted by AGUA

Hearing Date

9-5/8" csg. set @ 321' w/250/sx. cement
circulated to surface

Oil blanket in annulus

7" csg. set @ 3865' w/1600 sx. cement
circulated to tie w/9-5/8" csg.

5-1/2" internally plastic-coated
tubing swung @ 3875'

Open hole section 3865-4965'

Projected Total Depth 4965'

3865
2
6730

DIAGRAMMATIC SKETCH

Salt Water Disposal Well No. A-22
NE/4 NE/4 Section 22, T22S, R37E, Lea County, N.M.
BLINEBRY-DRINKARD SALT WATER DISPOSAL SYSTEM

DWN.	3/76	IVR

AGUA, INC.

HOBBS, NEW MEXICO

SCALE

None

DWG. NO.
A-178

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Form C-165
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease	State <input type="checkbox"/> Fee <input checked="" type="checkbox"/>
5. State Oil & Gas Lease No.	

10. TYPE OF WELL	OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> Disposal
11. TYPE OF COMPLETION	NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER <input type="checkbox"/>

7. Unit Agreement Name
8. Farm or Lease Name

1. Name of Operator	AGUA, INC.
3. Address of Operator	P. O. Box 1978 Hobbs, New Mexico 88240

9. Well No.	A-22
10. Field and Pool, or Wildcat	

4. Location of Well	UNIT LETTER <u>A</u> LOCATED <u>817</u> FEET FROM THE <u>North</u> LINE AND <u>965</u> FEET FROM THE <u>East</u> LINE OF SEC. <u>22</u> TWP. <u>22S</u> RGE. <u>37E</u> NMPM
---------------------	--

12. County	Lea
------------	-----

15. Date Spudded	1/26/76	16. Date T.D. Reached	2/4/76	17. Date Compl. (Ready to Prod.)		18. Elevations (DF, RKB, RT, GR, etc.)	3352' GL	19. Elev. Casinghead	
20. Total Depth	4965'	21. Plug Back T.D.		22. If Multiple Compl., How Many		23. Intervals Drilled By	Rotary Tools	Cable Tools	

24. Producing Interval(s), of this completion - Top, Bottom, Name	3865-4965' (San Andres)	25. Was Directional Survey Made	No
---	-------------------------	---------------------------------	----

26. Type Electric and Other Logs Run	Schlumberger Sidewall Neutron Porosity, Gamma Ray & caliper	27. Was Well Cored	No
--------------------------------------	---	--------------------	----

28. CASING RECORD (Report all strings set in well)					
CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9-5/8"	36	321'	12-1/4"	250 sx. Class "C" w/1/4# Flucele w/2% CaCl/sk.	Cement circulated
7"	20	3865'	8-3/4"	1300 sx. Halliburton Lite w/15% salt/sk. & 300 sx. Class "C" 2% CaCl.	Cement circulated

29. LINER RECORD				TUBING RECORD			
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
					5-1/2"	3875'	

31. Perforation Record (Interval, size and number)	32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
	DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
	3865-4965'	10,000 gals. 15% HCl acid
	3865-4965'	Re-treat w/10,000 gals. 15% HCl acid

33. PRODUCTION		
Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas-Oil Ratio
Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API (Corr.)	

34. Disposition of Gas (Sold, used for fuel, vented, etc.)	Test Witnessed By
--	-------------------

35. List of Attachments	Inclination Report, BHP Survey Report, Sidewall Neutron Porosity & Gamma Ray Log
-------------------------	--

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.		
SIGNED <u>K. G. Adcox</u>	TITLE <u>Manager</u>	DATE <u>3/2/76</u>

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

T. Anhy	1117	T. Canyon	T. Ojo Alamo	T. Penn. "B"
T. Salt	1205	T. Strawn	T. Kirtland-Fruitland	T. Penn. "C"
B. Salt	2383	T. Atoka	T. Pictured Cliffs	T. Penn. "D"
T. Yates	2525	T. Miss	T. Cliff House	T. Leadville
T. 7 Rivers	2776	T. Devonian	T. Menefee	T. Madison
T. Queen	3308	T. Silurian	T. Point Lookout	T. Elbert
T. Grayburg	3603	T. Montoya	T. Mancos	T. McCracken
T. San Andres	3850	T. Simpson	T. Gallup	T. Ignacio Qtzite
T. Glorieta		T. McKee	Base Greenhorn	T. Granite
T. Paddock		T. Ellenburger	T. Dakota	T.
T. Blinberry		T. Gr. Wash	T. Morrison	T.
T. Tubb		T. Granite	T. Todito	T.
T. Drinkard		T. Delaware Sand	T. Entrada	T.
T. Abo		T. Bone Springs	T. Wingate	T.
T. Wolfcamp		T.	T. Chinle	T.
T. Penn.		T.	T. Permian	T.
T. Cisco (Bough C)		T.	T. Penn. "A"	T.

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	1127	1127	Red beds & sand				
1127	1205	78	Anhydrite				
1205	2383	1178	Salt				
2383	2525	142	Anhydrite & shale				
2525	2776	251	Sand & shale				
2776	3308	527	Sand & anhydrite				
3308	3603	295	Anhydrite & dolomite				
3608	3850	247	Anhydrite & dolomite				
3850	4965	1115	Dolomite & limestone				

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5644 Exhibit No. 2
Submitted by AGUA
Hearing Date _____

EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 - MIDLAND, TEXAS 79701

PRODUCTION DEPARTMENT
MIDCONTINENT DIVISION
R. W. BOWDON
OPERATIONS MANAGER

MAR 22 1976
OIL CONSERVATION COMM.
Santa Fe

March 18, 1976

Blinebry-Drinkard Salt Water
Disposal System
Lea County, New Mexico

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

Case 5644

ATTENTION: Mr. Joe D. Ramey

Gentlemen:

Exxon Corporation has no objection to the Agua, Inc. application to increase the surface injection pressure limit from 100 to 1200 psi into their Salt Water Disposal Well No. A-22 located in Section 22, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico. This application was heard on March 10, 1976 and we recommend approval of this increase of the pressure limitation.

Yours very truly,

R. W. Bowdon

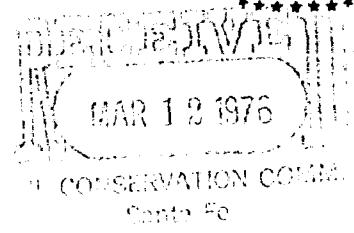
HNR/cb

cc: Agua, Inc.
P. O. Box 1978
Hobbs, New Mexico 88240

A DIVISION OF EXXON CORPORATION

MG MABQD ABQ
2-04531 4E070003 03/10/76
ICS IPMBNGZ CSP
2 91 568471 31 MGM TDBN MIDLAND TX 03-10 0537P EST

Mailgram
western union



NEW MEXICO OIL CONSERVATION COMMISSION, ATTN JOE RAMEY, DIRECTOR
NEW MEXICO STATE LAND OFFICE BLDG
SANTA FE NM 87501

Case 5644

THIS IS A CONFIRMATION COPY OF A PREVIOUSLY PHONE-DELIVERED TELEGRAM

AGUA INCORPORATED REQUESTS AMENDMENT TO THE SALT WATER DISPOSAL ORDER ON ITS NUMBER A22 SALT WATER DISPOSAL WELL LOCATED IN UNIT A SECTION 22 T22S, R37E BLINERY-DRINKARD-LANGLE-MATTIX AREA LEA COUNTY CASE NUMBER IS 5644 AGUA'S REQUEST TO INCREASE THE SURFACE INJECTION PRESSURE LIMITATION TO 1,200 PSI IS BELIEVED TO BE PROPER WHERE SALT WATER DISPOSAL WELLS AND WATER INJECTION WELLS IN THE SAME TOWNSHIP ARE CURRENTLY OPERATING AT SURFACE PRESSURES IN EXCESS OF 2,000 PSI. CITY SERVICE CONCURS IN AGUA INCORPORATED'S REQUEST AND RECOMMENDS APPROVAL OF THE HIGHER SURFACE PRESSURE.

E F MOTTER, ENGINEERING MANAGER, SOUTHWEST REGION, CITY SERVICE OIL COMPANY

17 40 EST

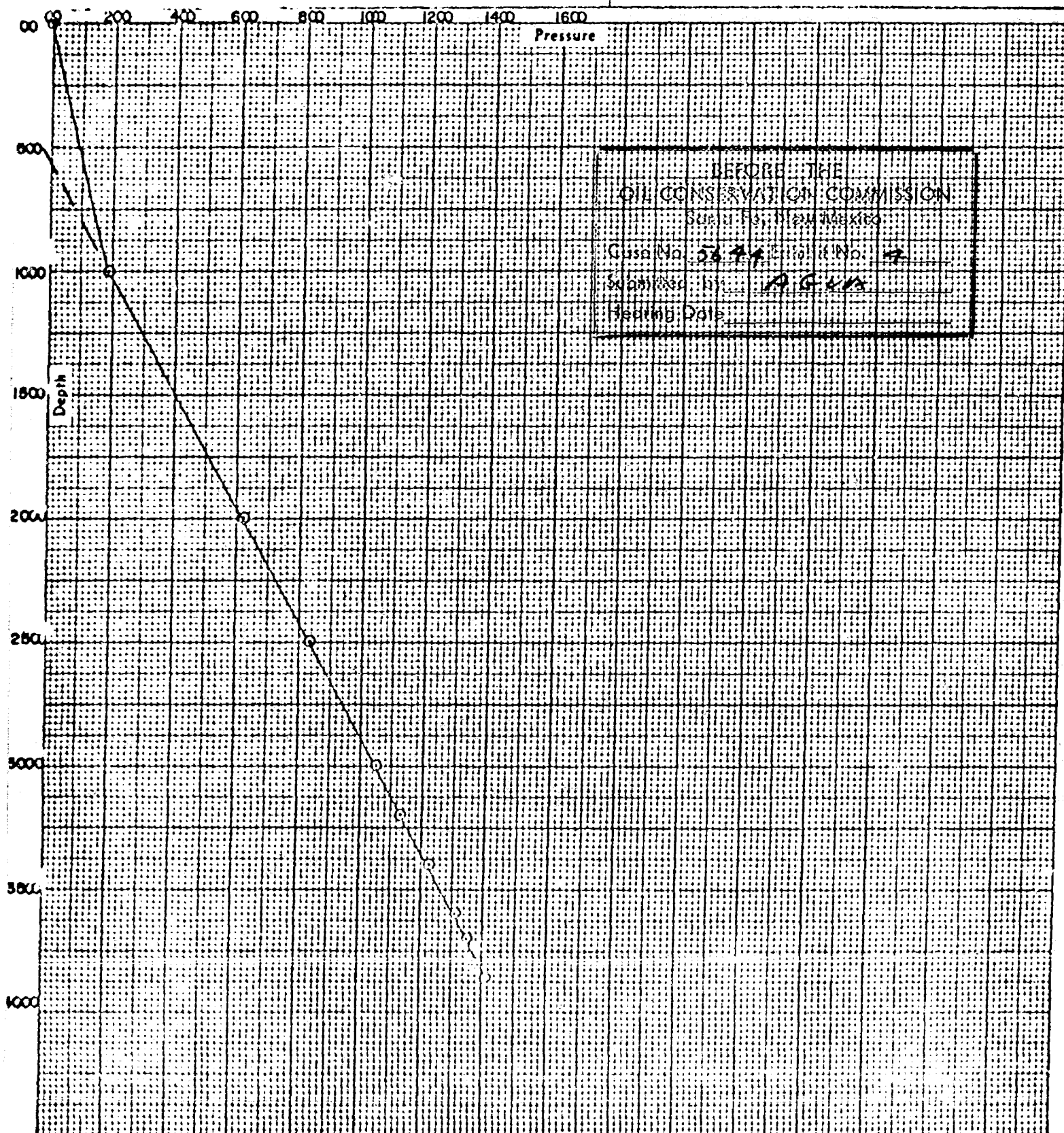
MG MABQD ABQ

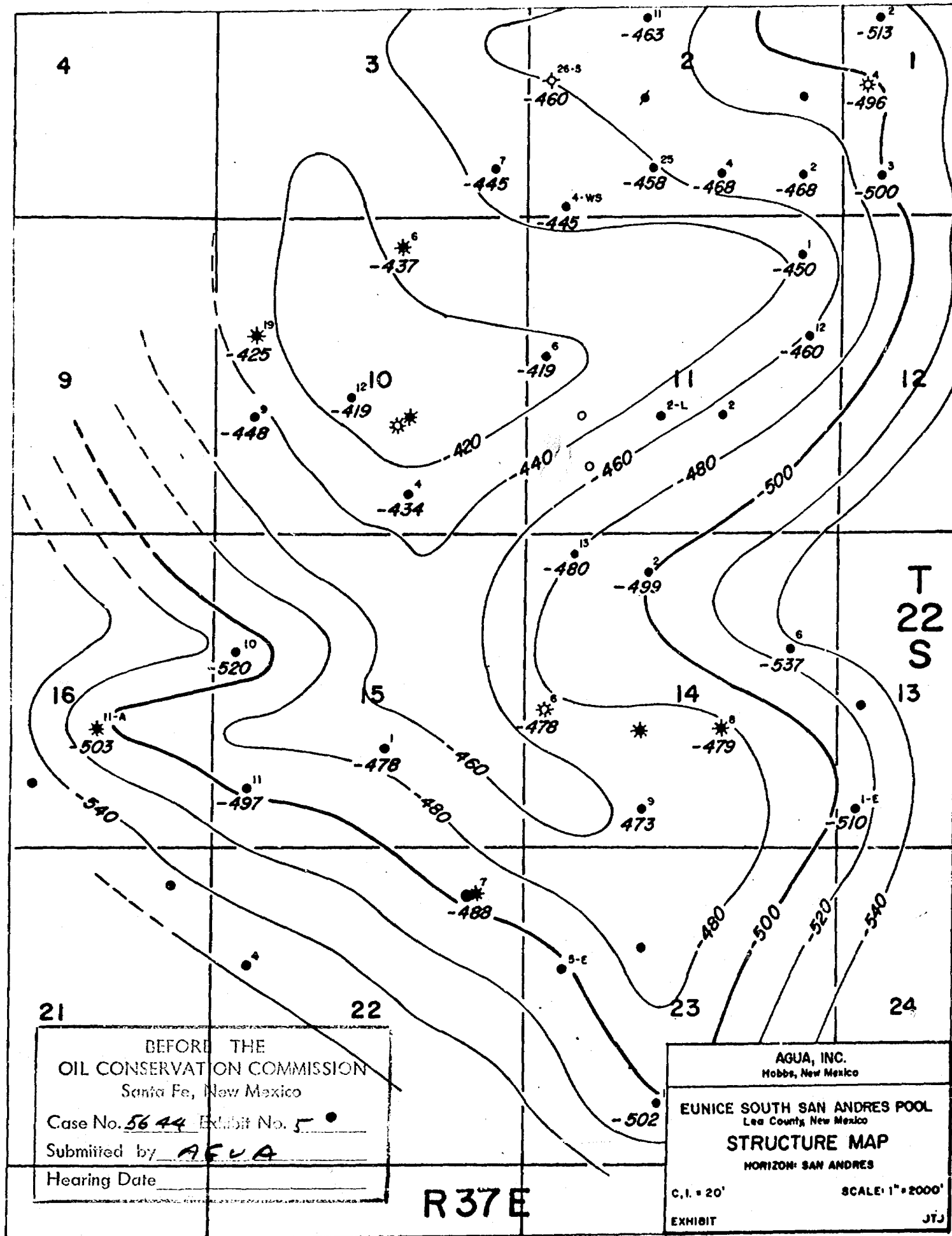
*phone message received on March 10, 1976
after having advised
wfd*

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR AGUA INCORPORATED
LEASE S.W.D. A - 22
WELL NO. 1
FIELD
DATE 2-17-76 TIME 9:30 A.M.
STATUS Shut-In TEST DEPTH 3860'
TIME SI LAST TEST DATE
CAS PRES BHP LAST TEST
TUB PRES Vac. BHP CHANGE
ELEV FLUID TOP
DATUM WATER TOP 575'
TEMP RUN BY Winford Sutton
CLOCK NO 5255 GAUGE NO. 12434
ELEMENT NO. 9749-N (0-1400')

DEPTH	PRESSURE	GRADIENT
000	Neg.	
1000	193	.193
2000	620	.427
2500	837	.434
3000	1052	.430
3200	1139	.435
3400	1225	.430
3600	1311	.430
3700	1350	.390
3800	1387	.370
3860	1408	.350





INJECTION & DISPOSAL WELL PRESSURES
IN THE 36-SECTION BREAKTHROUGH AREA

		<u>Avg. Inj. Press-psi</u>		
		<u>Nov. 1974</u>	<u>Dec. 1975</u>	
AGUA	B-D Disposal Well No. H-35	1715	Shut-in	San Andres
Anadarko	Walden Well No. 4 (SWD Well)	1200	1200	San Andres
Armer	Gulf State Well No. 1 (SWD Well)	1300	1200	San Andres
Anadarko	LMPUSU (47 well avg.)	1803	1582	Queen
Petro-Lewis	N.M. "M" State (23 well avg.)	1659	1670	Queen
Skelly	Penrose "A" Unit 1975 - 29 well avg. 1974 - 28 well avg.	1800	1743	Queen
Skelly	Penrose "B" Unit 1975 - 26 well avg. 1974 - 25 well avg.	1750	1706	Queen
Anadarko	Cole Well No. 3 (M16-22-37)	1000	Not Avail.	Queen
Anadarko	Walden Well No. 6 (N16-22-37)	Not Avail.	1000	Queen
Continental	Elliott A-15 Well No. 1 (P15-22-37)	320	1400	Queen

BEFORE THE OIL CONSERVATION COMMISSION Santa Fe, New Mexico	
Case No. <u>5844</u>	Exhibit No. <u>7</u>
Submitted by <u>AGUA</u>	
Hearing Date _____	

NOVEMBER 1975

1975

OPERATOR — LEASE	WELL	U L	S	T	R	BBLS. WATER DISPOSED	CUMUL. BBLS. WATER DISP.	AVG. INJ. PRESS
AGUA INCORPORATED BLINEBRY DRINKARD	2 C	2	22S	37E		257832	2874304	VACUUM
	35 H	35	22S	37E			13446411	
CATO	5 P	5	8S	30E		20724	1185451	VACUUM
CORBIN ABO	31 G	31	17S	33E		50304	3137230	1685
EMPIRE ABO	1 Q	1	18S	27E		2597	466924	1175
GOODWIN	31 E	31	18S	37E		15840	1576555	100
AMERADA HESS CORPORATION BAGLEY	1 N	2	12S	33E		118845	18222498	475
	2 N	11	12S	33E	P-AND-A		2573842	
	3 N	11	12S	33E	P-AND-A		19805293	
EAST CAPROCK	4 N	35	11S	33E		193647	2314241	VACUUM
	1 N	11	12S	32E			820978	
	2 N	14	12S	32E		134700	27317794	VACUUM
	3 N	14	12S	32E			37913484	
HIGHTOWER SWD SYSTEM KNOWLES	4 N	11	12S	32E		145925	2010174	VACUUM
	1 N	27	12S	33E		3	1559806	VACUUM
	1 N	2	17S	38E			14185222	475
	2 N	34	16S	38E		12757	25923	VACUUM
L W WARD WIMBERLY	5 N	11	13S	38E		73075	6742120	VACUUM
	13 N	24	25S	37E		21433	7635094	475
AMERICAN PETROFINA COMPANY OF TEXAS FEDERAL C	2 E	21	8S	36E		648	530102	400
AMOCO PRODUCTION CO BATE FEDERAL	3 C	35	19S	33E		6360	180994	VACUUM
BOUGH SWD SYSTEM	1 J	13	9S	34E	P-AND-A			
CATO	1 M	3	8S	30E			673562	
FARNSWORTH	1 N	7	26S	37E		150144	15005399	VACUUM
FOWLER	1 I	9	24S	37E		40755	255417	VACUUM
GLADIOLA	1 P	24	12S	37E	P-AND-A		5335553	
MIDWEST MORGAN FEDERAL	1 I	13	7S	33E		327	122192	650
MILLER FEDERAL	4 L	35	7S	31E		785	139926	VACUUM
STATE CF	1 I	13	11S	27E			774292	
	1 K	13	11S	27E		12600	59480	VACUUM
ANADARKO PRODUCTION COMPANY E W WALDEN	4 K	15	22S	37E		10902	2073798	1200
ARAHQ INC. STATE LC	1 I	1	17S	36E		232595	2291744	VACUUM
SAM D. ARES ARNOTT RAMSAY A EVERETT	3 D	2	25S	36E		1342	169019	100
	4 M	35	24S	36E		3855	134784	GRAVITY
ARMER OIL COMPANY GULF STATE	1 M	2	23S	37E		3198	147449	1200
ASHMUN AND HILLIARD G K McDONALD	1 P	1	13S	37E	DISCONNECT		234267	
ATLANTIC RICHFIELD COMPANY ARCO FEDERAL	1 D	9	20S	33E	P-AND-A		306492	
BALLARD DE FEDERAL	6 L	22	20S	34E		16992	1660402	2100
DENTON	1 D	13	15S	37E		250232	78608131	95

OIL CONSERVATION COMMISSION

San Antonio, Texas

Case No. 5644

Submitted by A. G. A.

Hearing Date

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	AVG. 1 PRESS.
AMERADA HESS CORP. CONT'D.					
L.M.W.U.	802 F	33-24-37	9,488	1,144,234	890
"	804 D	"	10,674	603,387	800
"	902 L	"	11,860	500,197	"
TOTAL	29		274,715	29,257,088	
AMOCO PRODUCTION COMPANY					
Cortland Myers Unit	2 P	22-24-37	22,776	1,701,245	839
"	5 F	"	15,568	1,529,581	729
"	6 J	"	13,596	1,586,626	705
TOTAL	3		51,940	4,817,452	
ANADARKO PRODUCTION COMPANY					
LMPSU Tr. 1	2 M	14-22-37	4,282	442,458	1500
" Tr. 2	2 D	23-23-37	9,170	504,909	1550
" Tr. 3	1 B	22-22-37	8,496	934,075	1150
"	3 B	"	7,256	503,657	1000
" Tr. 4	1 L	"	5,273	975,991	1300
"	3 F	"	6,406	899,697	"
" Tr. 5A	1 D	"	3,571	478,080	
" Tr. 4 B	1 P	21-22-37	4,990	901,362	1500
" Tr. 7	1 H	"	5,200	891,880	"
"	3 B	"	5,225	393,660	1650
" Tr. 8	1 F	"	6,473	889,248	1300
" Tr. 9	1 P	20-22-37	3,659	1,119,599	1250
" Tr. 10	3 J	21-22-37	8,266	758,301	1350
"	4 L	"	3,647	855,415	1450
" Tr. 12	1 N	21-22-37	5,608	855,485	1650
" Tr. 13A	1 N	22-22-37	4,666	890,874	1660
" Tr. 13B	2 D	27-22-37	7,284	845,612	1675
" Tr. 13C	5 F	"	2,305	869,665	1550
"	7 B	"	6,670	957,076	1750
" Tr. 14	2 J	22-22-37	6,787	910,478	1550
" Tr. 15	2 P	"	3,397	816,854	1775
" Tr. 17	1 D	26-22-37	4,120	643,910	1750
" Tr. 18	2 L	"	3,250	1,028,642	"
" Tr. 19	2 P	27-22-37	4,900	1,329,053	1775
"	4 H	"	1,600	566,273	"
"	5 J	"	1,520	1,231,206	"
" Tr. 21	2 N	"	5,330	1,372,967	1750
"	3 D	34-22-37	1,980	1,047,245	1725
"	7 F	"	2,820	1,214,429	1750
" Tr. 22	1 L	27-22-37	2,910	994,663	"
" Tr. 24	4	28-22-37	2,748	991,329	1100
" Tr. 25	2 h	"	3,616	689,815	1650
"	3 B	"	4,414	852,994	1400
" Tr. 28	3 F	"	3,911	880,061	1700

COMPANY LEASE	WELL UNIT	S.T.R.	BBLs. WATER INJ.	CUM. WATER INJ.	AVG. IN PRESS.
ANADARKO CONT'D.					
LMPSU Tr. 28	4 L	28-22-37	4,678	1,110,876	1500
"	7 N	"	1,191	827,892	1710
" Tr. 29	2 H	29-22-37	4,836	1,110,965	1610
" Tr. 31	1 H	32-22-37	3,176	1,088,833	1650
" Tr. 32	2 D	33-22-37	3,847	1,071,611	1700
" Tr. 33	1 F	"	3,039	988,408	1300
" Tr. 35	2 H	"	None	1,208,301	
"	3 B	"	1,711	969,080	1700
" Tr. 36	1 B	34-22-37	3,270	2,225,241	1775
"	4 H	"	6,160	1,970,363	"
" Tr. 37	1 J	"	3,770	1,896,957	1750
"	3 P	"	450	1,236,558	1775
" Tr. 38	1 D	28-22-37	4,062	1,038,979	1650
" Tr. 39	1 P	29-22-37	4,043	1,125,865	1660
" Tr. 40	1 L	23-22-37	3,882	445,102	1725
TOTAL	49		209,865	48,051,994	
BUCKLES, GEO. L.					
Knight	5 M	22-24-37	6,950	839,942	510
"	6 P	21-24-37	2,300	709,713	310
"	7 I	"	260	473,440	1100
"	8 L	22-24-37	435	640,507	"
"	9 L	"	5,580	844,096	800
"	10 M	"	6,200	899,933	750
"	11 M	"	950	255,483	1100
"	12 P	21-24-37	7,645	1,129,865	800
"	13 P	"	2,140	314,265	900
Jamison	5 H	"	5,580	432,922	1100
"	6 H	"	11,082	1,223,027	"
TOTAL	11		49,122	7,763,193	
CARTER FOUNDATION PRODUCTION COMPANY					
Blinebry Fed.	11 P	34-23-37	6,403	797,173	1100
"	13 M	35-23-37	6,727	651,247	"
"	14 I	34-23-37	3,310	628,728	"
"	15 E	35-23-37	5,030	586,561	"
"	16 G	34-23-37	None	442,393	0
"	17 P	"	"	319,306	0
TOTAL	6		21,470	3,425,408	
CONTINENTAL OIL COMPANY					
Jack AB-29	2 I	29-24-37	12,154	959,507	800
"	4 O	"	25,180	1,151,806	"
"	6 G	"	17,916	819,112	"
TOTAL	3		55,250	2,930,425	

ANY E	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	
OIL CORPORATION					
rey Qu. Ut.	2 D	3-25-37	15,500	1,220,435	700
	4 B	"	12,400	951,806	1000
	6 A	"	11,625	827,892	600
	9 F	"	4,650	644,637	975
	13 I	4-25-37	None	63,026	0
	15 L	3-25-37	9,300	703,999	800
	17 J	"	10,850	916,053	900
	19 P	"	18,600	1,007,593	600
	20 M	"	3,100	436,761	850
	23 O	"	10,850	1,061,582	600
	27 H	4-25-37	6,200	311,978	1000
	11		103,075	8,145,762	
OIL CORPORATION					
ie Mattix Queen Unit	2 E	14-25-37	13,883	1,637,608	100
	3 M	10-25-37	1,851	527,294	750
	7 P	"	13,883	1,147,645	300
	11 B	15-25-37	7,713	805,604	700
	13 D	14-25-37	12,340	1,541,327	300
	14 D	"	13,883	1,541,963	50
	15 F	15-25-37	2,314	516,556	750
	17 H	"	20,053	1,309,340	700
	19 J	"	6,942	747,166	525
	21 L	14-25-37	24,681	1,938,420	750
	22 N	15-25-37	1,851	267,519	575
	25 P	"	20,053	1,500,147	450
	27 M	14-25-37	20,053	1,177,532	100
	28 B	22-25-37	8,484	514,066	475
	31 D	23-25-37	10,798	1,721,391	400
	32 G	22-25-37	23,138	750,360	100
	35 E	23-25-37	23,140	2,125,205	700
	17		225,060	19,769,142	
O-LEWIS CORPORATION					
" State	4 C	19-22-37	(Gas Well)	399,694	0
	13 K	20-22-37	4,565	905,620	1750
	14 H	31-22-37	1,682	764,542	1425
	15 N	29-22-37	5,677	861,961	1950
	16 J	"	8,292	1,008,085	1500
	20 F	"	9,049	255,983	1750
	22 B	"	4,350	1,061,845	1925
	23 C	"	3,740	894,232	1900
	24 O	19-22-37	8,392	923,218	"
add 26	25 I	29-22-37	8,939	205,195	1700 + 1700

LANGLIE MATTIX WATER INJECTION DEC. - CONT'D.

PAGE # 54
AVG. INJ.
PRESS.

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	
PETRO-LEWIS CORP. CONT'D.					
N.M. "M" State	27 H	30-22-37	8,349	355,534	1850
"	28 I	"	4,726	962,708	1900
"	31 A	"	7,016	866,367	1875
"	32 M	19-22-37	399	754,584	1750
"	33 K	"	7,197	1,123,695	1200
"	34 D	29-22-37	5,841	320,098	1900
"	37 M	20-22-37	7,364	1,006,561	1650
"	38 G	30-22-37	4,366	941,211	1600
"	41 O	"	1,602	793,979	1400
"	42 E	19-22-37	1,613	542,573	0
"	44 I	"	9,781	919,229	1400
"	45 C	30-22-37	18	191,637	1975
"	46 G	19-22-37	3,681	700,352	775
"	47 N	20-22-37	11,812	393,139	1625
TOTAL	25		135,966	18,344,497	
RESERVE OIL & GAS COMPANY					
Cooper Jal Unit	104 E	18-24-37	11,997	567,046	533
"	107 K	"	9,389	373,710	277
"	109 K	"	11,997	570,055	0
"	110 I	"	11,997	436,291	1002
"	112 M	13-25-36	11,997	584,310	1038
"	114 O	"	11,997	581,005	951
"	116 M	17-24-37	8,700	425,029	1348
"	118 O	"	11,997	570,586	598
"	120 C	24-24-36	8,700	427,496	1105
"	122 A	"	11,997	578,691	919
"	124 C	19-24-37	11,997	573,432	0
"	127 H	24-24-36	11,997	581,783	1056
"	130 K	"	12,026	589,659	1087
"	133 K	19-24-37	10,874	544,269	0
"	136 P	24-24-36	11,997	581,931	1171
"	137 D	25-24-36	None	184,965	0
"	139 B	"	11,997	577,890	1085
"	141 D	30-24-37	11,997	579,977	1055
"	143 F	25-24-36	11,997	587,552	584
"	144 H	"	11,997	584,389	1082
"	145 G	18-24-37	11,997	582,980	970
"	146 I	13-24-36	8,700	426,183	1290
"	147 E	19-24-37	8,700	430,861	1248
"	148 J	24-26-36	12,043	584,631	839
TOTAL	24		259,087	12,524,721	

LANGLIE MATTIX WATER INJECTION WELLS DEC. - CONT'D.

PAGE # 56

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	AVG. D. PRESS.
SKELLY OIL CO. CONT'D.					
Myers Langlie Mattix Ut.	140 G	6-24-37	10,964	51,767	740
"	142 E	5-25-37	10,939	47,563	720
"	157 K	2-24-37	S.I.	22,467	0
"	169 K	5-24-37	10,607	51,256	100
"	171 K	6-24-37	10,939	50,610	0
"	175 O	"	10,939	50,547	0
"	*179 O	5-24-37	14,979	14,979	560
"	198 A	8-24-37	10,599	51,253	0
"	200 C	"	10,547	46,984	425
"	**202 A	7-24-37	10,939	50,714	340
"	216 G	8-24-37	10,594	51,197	0
"	233 K	"	10,593	51,527	0
"	235 I	7-24-37	10,939	46,567	340
"	241 K	12-24-36	10,940	46,655	0
"	63 A	36-23-36	10,963	35,905	0
"	208 G	12-24-36	10,939	35,884	140
"	101 K	36-23-36	10,963	26,876	0
"	144 G	5-24-37	10,579	26,438	0
"	***177 M	"	10,625	36,137	500
"	107 O	31-23-37	10,963	30,996	320
"	214 E	8-24-37	10,633	14,998	0
"	*248 M	"	2,974	2,974	375

(*179-0 Nov.&Dec.total)(**202-A Nov.Cum.39775,not 39,795)(Nov.Total Cum. 1,128,785)(Nov.177-0 posted in error,eliminate)

TOTAL	39		427,380	1,556,165	
SKELLY OIL COMPANY					
Skelly Penrose "A" Unit	2 L	34-22-37	9,005	1,443,196	1940
"	4 J	33-22-37	4,610	747,150	"
"	6 L	"	6,300	803,005	1950
"	8 N	"	1,590	598,579	1940
"	10 P	33-23-37	9,080	927,535	1810
"	12 N	34-22-37	8,716	2,405,878	1800
"	13 B	3-23-37	9,360	566,875	1580
"	17 B	4-23-37	2,725	643,905	1900
"	21 H	"	14,610	852,965	1920
"	23 F	3-23-37	15,390	1,339,995	1500
"	26 J	"	16,330	1,352,685	1675
"	28 L	"	7,555	1,119,860	1400
"	30 J	4-23-37	7,650	566,630	1850
"	32 L	"	3,775	877,235	"
"	34 N	"	6,355	592,160	1550
"	36 P	"	14,820	1,017,357	1750
"	38 N	3-23-37	10,625	853,955	1900
"	40 P	"	7,255	707,575	1900

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	AVG. INJ. PRESS.
SKELLY OIL CO. CONT'D.					
Skelly Penrose "A" Unit	42 B	10-23-37	8,920	818,156	1920
"	44 D	"	8,575	869,120	1800
"	46 B	9-23-37	8,030	977,570	1350
"	48 H	"	6,785	657,855	1700
"	50 F	10-23-37	11,860	791,250	1725
"	52 H	10-23-37	1,940	482,120	1960
"	53 J	"	3,740	391,970	1750
"	55 L	"	7,315	739,770	1800
"	57 J	9-23-37	4,250	755,052	"
"	59 P	"	6,195	225,695	750
"	61 F	4-23-37	9,205	597,800	1920
TOTAL	29		232,566	24,722,898	
SKELLY OIL COMPANY					
Skelly Penrose "B" Unit	1 B	32-22-37	7,780	504,379	1900
"	3 D	"	7,695	1,121,903	1500
"	5 F	"	8,765	1,058,944	"
"	8 J	"	10,290	627,745	1800
"	10 L	"	8,130	372,626	1900
"	12 P	31-22-37	7,925	863,675	2090
"	14 N	32-22-37	6,005	932,030	1750
"	16 P	"	7,445	972,870	1800
"	17 D	4-23-37	5,600	730,936	2000
"	19 B	"	4,400	435,805	"
"	21 D	"	6,615	622,400	1800
"	25 H	6-23-37	7,565	1,117,045	"
"	27 F	5-23-37	7,005	1,203,309	"
"	29 H	"	1,535	767,940	2075
"	32 J	"	4,429	563,519	2100
"	34 L	"	6,240	601,060	1900
"	36 P	6-23-37	4,258	1,342,501	1600
"	38 N	5-23-37	6,152	1,314,305	1600
"	40 P	"	5,656	1,097,856	1900
"	42 D	9-23-37	6,462	911,272	1200
"	45 D	7-23-37	7,970	708,485	"
"	50 H	9-23-37	S.I.	1,127,768	
"	52 F	"	1,881	800,420	1600
"	54 L	"	7,191	881,776	"
"	59 P	8-23-37	7,572	199,593	1450
"	61 N	9-23-37	5,954	166,387	1300
"	62 F	8-23-37	T.A.	835,736	
"	63 B	"	5,060	575,450	1200
TOTAL	28		165,580	22,457,735	

WATER INJECTION WELLS DEC. - CONT'D.		COMPANY		WELL		S.T.R.		BBLS. WATER		CUM. WATER		PAGE 7 79	
LEASE				UNIT				INJ.		INJ.		AVG. INJ. PRESS.	
<u>PENROSE SKELLY</u>													
ANADARKO PRODUCTION COMPANY													
R.E. Cole		3 M	16-22-37					7,709		278,949			
E.M. Walden		6 N	16-22-37					19,421		782,121			1000
TOTAL		2						27,130		1,061,070			
CONTINENTAL OIL COMPANY													
Elliott A-15		1 I	15-22-37					7,316		159,339			1400
GULF OIL CORPORATION													
South Penrose Skelly Unit Pilot Area													
		106 O	6-22-37					None		756,632			
"		111 E	"					"		870,129			
"		113 G	"					"		647,597			
"		127 K	"					"		795,321			
"		129 I	6-22-37					"		817,174			0
"		133 M	5-22-37					"		719,344			
TOTAL		6						None		4,606,197			
<u>RED LAKE</u>													
ATLANTIC RICHFIELD COMPANY													
W. Red Lake Unit		20Z D	7-18-27					None		76,199			0
"		21Z D	"					2,991		294,397			730
"		40Z F	"					None		100,734			0
"		41Z F	"					1,609		389,073			693
"		110Z O	"					None		49,240			0
"		111Z O	"					1,861		341,779			798
"		130Z A	"					None		61,222			0
"		131Z A	"					3,314		459,829			972
"		140Z H	"					None		109,064			0
"		141Z H	"					1,578		426,598			990
"		160Z I	"					None		126,021			0
"		161Z I	"					771		214,091			734
"		17 M	5-18-27					2,057		423,938			542
TOTAL		7						14,181		3,072,185			
B & D OPERATING COMPANY													
S.Red Lake Grayburg Unit		3 A	35-17-27					800		306,983			300
"		6 F	"					400		235,771			"
"		8 F	36-17-27					800		486,451			"
"		9 E	"					500		237,120			"
"		11 G	"					500		206,652			"
"		18 J	35-17-27					400		217,245			"

SOUTHEAST NEW MEXICO SALT WATER DISPOSAL SYSTEMS

NOVEMBER, 1974

1974

COMPANY LEASE	WELL UNIT	S.T.R.	NOV. BBLs. WATER DISPOSED	ACCUM. BBLs. WATER DISPOSED	AVG. INJ. PRESS.
AGUA, INC.					
Bliebry Drinkard	H-35 H	35-22-37	173,000	11,647,919	2125 psi
"	C-2 C	2-22-37	86,156	1,442,596	Vacuum
Cato	P-5 P	5-18-30	16,079	1,015,509	"
Corbin Abo	G-31 G	31-17-33	47,473	2,560,519	1030
Empire	O-1 O	1-18-27	8,310	387,463	100#
Goodwin	E-31 E	31-18-37	15,840	1,358,975	"
AMERADA HESS CORPORATION					
Bagley	1 N	2-12-33	110,540	16,876,629	Vacuum
"	2 C	11-12-33	P&A	2,573,842	"
"	3 F	"	T.A.	19,592,012	"
"	4 N	35-11-33	119,066	119,066	Vacuum
L.W. Ward	2 J	11-13-38	80,048	5,774,112	"
East Caprock	1 I	11-12-32	-0-	820,978	"
"	2 B	14-12-32	-0-	27,484,891	"
"	3 C	"	-0-	37,913,484	"
"	4 O	11-12-32	169,925	294,719	Vacuum
Hightower	1 P	27-12-33	-0-	1,558,601	"
Knowles	1 D	2-17-37	19,238	14,025,126	475#
Wimberly	13 M	24-25-37	28,804	6,271,838	"
AMERICAN PETROFINA COMPANY OF TEXAS					
Federal "C"	2 E	21-8-36	1,657	515,603	1400
AMOCO PRODUCTION COMPANY					
Bates Federal	3 C	35-19-33	6,480	108,202	Vacuum
Cato	1 M	3-18-30	3	673,562	"
Farnsworth	1 N	7-26-37	148,080	13,208,776	25#
Fowler	1 I	9-24-37	25,751	1,699,780	Vacuum
Miller	4 L	35-17-31	2,033	127,993	"
Morgan D Federal	5 I	13-7-33	700	119,080	650 psi
State CF	1 I	13-11-27	10,800	697,894	1800 psi
ANADARKO PRODUCTION COMPANY					
Walden	4 K	15-22-37	3,862	1,990,741	1200
ARCO					
Empire Abo Unit C	49 L	29-17-29	29,478	184,799	Gravity

BEFORE PAGE #17
OIL CONSERVATION COMMISSION
Santa Fe, N.M.
PRESS.
Case No. 5644 Exhibit No. 8a
Submitted by 1715 psi
Hearing Date Vacuum

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	
AMERADA HESS CORPORATION CONT'D.					
AMWU	119 J	33-24-37	13,711	822,325	1100
	121 H	34-24-37	13,711	881,292	"
	122 F	"	6,856	989,645	1180
	124 D	"	13,711	1,811,851	1100
	125 B	"	6,856	540,845	1180
	142 L	"	15,082	2,212,876	1100
	151 J	"	13,711	1,132,414	1050
	165 N	"	8,227	290,911	975
	166 P	"	12,340	383,908	650
	202 N	28-24-37	274	657,777	175
	204 M	"	15,082	531,664	700
	302 H	28-24-37	9,598	1,823,785	1120
	307 P	"	13,711	1,931,758	1100
	308 J	"	13,711	1,452,633	1120
	504 F	27-24-37	2,742	375,990	1200
	505 C	"	823	351,190	1175
	601 L	"	13,712	1,874,104	1100
	604 N	"	4,113	1,282,332	1150
	703 J	"	13,025	906,152	"
	707 P	"	1,372	163,689	1190
	710 H	34-24-37	8,227	595,268	"
	802 F	33-24-37	12,340	1,016,642	800
	804 D	"	13,712	469,757	700
	902 L	"	13,712	347,059	700
TOTAL	29		295,478	25,879,834	
AMOCO PRODUCTION COMPANY					
Cortland Myers Unit	2 P	22-24-37	22,373	1,399,762	804
"	*5 F	"	18,993	1,320,891	805
"	6 J	"	27,644	1,293,440	840
(*5-F Sept. Cum. error 1,281,774 not 1,280,774)					
TOTAL	3		69,010	4,014,093	
ANADARKO PRODUCTION COMPANY					
LMPSU Tr. 1	2 M	14-22-37	11,055	374,690	1500
" Tr. 2	2 D	23-23-37	14,580	405,845	1200
" Tr. 3	1 H	22-22-37	16,796	826,655	1175
"	3 B	"	15,183	401,088	1100
" Tr. 4	1 L	"	14,195	887,164	1600
"	3 E	"	16,248	795,326	1500
" Tr. 5A	1 D	"	18,941	411,403	
" Tr. 5B	1 P	21-22-37	12,651	829,235	1700
" Tr. 7	1 H	"	15,313	820,101	1725
"	3 B	"	104,792	316,220	1500
" Tr. 8	1 F	"	15,133	810,523	1725

LANGLIE MATTIX WATER INJECTION WELLS NOV. - CONT'D.

PAGE # 55
AVG. INJ.
PRESS.

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.
ANADARKO PRODUCTION COMPANY CONT'D.				
IMPSU Tr. 9	1 P	20-22-37	13,677	1,055,331
" Tr. 10	3 J	21-22-37	13,150	854,026
"	4 L	"	12,613	791,895
" Tr. 12	1 N	21-22-37	12,813	783,710
" Tr. 13A	1 N	22-22-37	14,670	823,752
" Tr. 13B	2 D	27-22-37	9,587	762,332
" Tr. 13C	5 F	"	5,668	831,603
"	7 B	"	6,030	883,706
" Tr. 14	2 J	22-22-37	3,684	820,024
" Tr. 15	2 P	"	13,157	764,705
" Tr. 17	1 D	26-22-37	10,750	572,790
" Tr. 18	2 L	"	9,290	970,392
" Tr. 19	2 P	27-22-37	7,960	1,267,533
"	4 H	"	5,030	541,883
"	5 J	"	6,020	1,206,586
" Tr. 21	2 N	"	9,190	1,304,047
"	3 D	34-22-37	6,350	999,945
"	7 F	"	13,050	1,160,359
" Tr. 22	1 L	27-22-37	5,020	946,163
" Tr. 24	4 J	28-22-37	7,444	932,328
" Tr. 25	2 H	"	10,770	630,858
"	3 B	"	10,681	786,596
" Tr. 28	3 F	"	13,021	815,050
"	4 L	"	12,468	1,043,635
"	7 N	"	8,963	799,821
" Tr. 29	2 H	29-22-37	9,848	1,050,975
" Tr. 31	1 H	32-22-37	1,023	1,043,158
" Tr. 32	2 D	33-22-37	11,518	1,027,611
" Tr. 33	1 F	"	7,226	945,996
" Tr. 35	2 H	"	None	1,208,301
"	3 B	"	11,953	923,259
" Tr. 36	1 B	34-22-37	2,190	2,169,489
"	4 H	"	5,170	1,910,893
" Tr. 37	1 J	"	6,640	1,843,547
"	3 P	"	13,130	1,193,748
" Tr. 38	1 D	28-22-37	2,295	960,161
" Tr. 39	1 P	29-22-37	11,884	1,060,324
" Tr. 40	1 L	23-22-37	11,970	387,730
TOTAL	49		490,790	44,952,512
BUCKLES, GEO. L. Knight	5 M	22-24-37	7,180	761,820

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COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	AVG. INJ. PRESS.
MOBIL OIL CORP. CONT'D.					
Langlie Mattix Queen Unit	19 J	15-25-37	5,162	646,296	500
	21 L	14-25-37	9,679	1,765,708	500
	22 N	15-25-37	1,291	212,042	450
	25 P	"	6,453	1,332,686	450
	27 M	14-25-37	7,743	979,082	50
	28 B	22-25-37	1,291	411,971	300
	31 D	23-25-37	9,034	1,523,184	150
	32 G	22-25-37	3,872	632,566	350
	35 E	23-35-37	9,035	1,918,185	1000
TOTAL	17		92,921	17,377,476	
PETRO-LEWIS CORPORATION					
N.M. "M" State	4 C	19-22-37	(Gas Well)	399,694	0
	13 K	20-22-37	7,561	827,428	1665
	14 H	31-22-37	1,043	736,933	1745
	15 N	29-22-37	6,917	760,146	1835
	16 J	"	6,389	902,640	1420
	20 F	"	9,578	153,442	1575
	22 B	"	7,102	969,578	1850
	23 C	"	6,203	816,220	1825
	24 O	19-22-37	7,295	819,701	1625
	25 L	29-22-37	9,158	189,844	1650
	26 E	"	10,258	978,482	1825
	27 H	30-22-37	7,707	256,108	1800
	28 I	"	5,772	872,060	1825
	31 A	"	7,756	775,930	"
	32 M	19-22-37	3,903	700,537	1755
	33 K	"	10,602	1,017,747	1155
	34 D	29-22-37	6,066	258,419	1850
	37 M	20-22-37	8,492	894,065	1750
	38 G	30-22-37	8,374	866,473	1825
	41 O	"	6,932	727,230	1850
	42 E	19-22-37	2,570	489,822	0
	44 I	"	7,747	809,467	1325
	45 C	30-22-37	2	191,027	1910
	46 G	19-22-37	5,330	623,566	625
	47 N	20-22-37	9,518	264,439	1640
TOTAL	25		162,275	16,300,998	
RESERVE OIL & GAS COMPANY					
Cooper Jal Unit	104 E	18-24-37	12,656	402,643	553
	107 K	"	12,656	263,715	350
	109 K	"	12,656	405,977	0
	110 I	"	12,656	272,369	968

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	
SHELL OIL CO. CONT'D.					
Langlie Mattix W.F. Ut. #1	17 O	23-24-37	3,723	1,189,578	1500
TOTAL	9		34,211	9,084,148	
SHELLY OIL COMPANY					
J. C. Johnson	4 D	20-23-37	1,665	1,665	0
SHELLY OIL COMPANY					
Myers Langlie Mattix	157 K	2-24-37	None	22,467	
SHELLY OIL COMPANY					
Skelly Penrose "A" Unit	2 L	34-22-37	5,460	1,363,866	1970
"	4 J	33-22-37	7,260	703,205	1960
"	6 L	"	1,115	756,815	1970
"	8 B	"	5,590	566,264	1960
"	10 P	"	9,740	840,405	1880
"	12 N	34-22-37	9,680	2,303,615	1725
"	13 B	3-23-37	8,980	488,905	1500
"	17 B	4-23-37	7,870	594,480	1840
"	21 H	"	9,705	740,695	1440
"	23 F	2-23-37	25,300	1,209,345	1750
"	26 J	"	24,855	1,166,925	1860
"	28 L	"	None	1,031,895	0
"	30 J	4-23-37	13,590	502,185	1950
"	32 L	"	9,980	799,970	2000
"	34 N	"	9,410	517,445	1680
"	36 P	"	14,075	911,177	1800
"	38 N	3-23-37	2,495	782,425	1880
"	40 P	"	7,170	613,035	1850
"	42 B	10-23-37	10,230	723,946	1985
"	44 D	"	15,605	789,790	1900
"	46 B	9-23-37	8,520	899,820	1650
"	48 H	"	6,140	584,150	1775
"	50 F	10-23-37	18,190	681,255	1750
"	52 H	"	4,590	453,005	1700
"	53 J	"	9,430	321,050	1900
"	55 L	"	8,820	666,620	1800
"	57 J	9-23-37	6,105	695,872	1825
"	59 P	"	15,020	109,390	1125
"	61 F	4-23-37	9,665	495,490	1970
TOTAL	29		284,590	22,313,040	
SHELLY OIL COMPANY					
Skelly Penrose "B" Unit	1 B	32-22-37	1,535	407,879	1900
"	3 D	"	9,740	1,034,483	1800
"	5 F	"	None	998,794	
"	8 J	"	10,145	507,530	1800
"	10 L	"	2,370	352,531	2075

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	
SKELLY OIL CO. CONT'D.					
Skelly Penrose "B" Unit	12 P	31-22-37	4,540	793,050	2000
"	14 N	32-22-37	9,765	845,550	1900
"	16 P	"	10,820	880,695	1800
"	17 D	4-23-37	1,320	719,431	2090
"	19 B	"	9,505	369,580	2000
"	21 D	"	8,760	535,900	1800
"	25 H	6-23-37	12,325	1,025,255	1800
"	27 F	5-23-37	11,000	1,104,959	"
"	29 H	"	2,555	748,890	2075
"	32 J	"	6,084	500,129	2100
"	34 L	"	7,587	520,957	1900
"	36 P	6-23-37	11,768	1,254,031	1600
"	38 N	5-23-37	8,843	1,223,043	1500
"	40 P	5-23-37	9,154	1,009,794	1500
"	42 D	9-23-37	8,612	830,047	1200
"	45 D	7-23-37	11,145	617,080	1600
"	50 H	9-23-37	S.I.	1,127,768	
"	52 F	"	5,473	770,892	1900
"	54 L	"	5,985	808,555	1700
"	59 P	8-23-37	7,979	89,390	1300
"	61 N	9-23-37	6,773	91,521	"
"	62 F	8-23-37	T.A.	835,736	
"	63 B	"	7,338	496,958	1300
TOTAL	28		191,121	20,500,428	
SKELLY OIL COMPANY					
E. L. Steeler	6 J	17-23-37	5,645	752,805	1500
"	7 H	"	2,065	2,065	1000
TOTAL	2		7,710	754,870	
TENNECO OIL COMPANY					
Ginsberg Federal	6 E	31-25-38	12,256	514,804	
TEXACO INC.					
J.F. Black	6 F	21-24-37	17,640	430,543	1900
"	7 C	"	19,889	684,121	"
TOTAL	2		37,529	1,114,664	
TEXACO INC.					
C. C. Fristoe "A" Fed.NCT/1	6 D	35-24-37	5,790	465,884	800
UNION TEXAS PETROLEUM CORPORATION					
Langlie Jal Unit	1 B	31-24-37	17,550	373,072	250
"	3 D	32-24-37	16,860	295,898	720
"	5 B	"	20,250	417,753	700
"	7 H	"	6,060	101,814	400
"	9 F	"	11,190	282,617	660
"	11 H	31-24-37	12,810	348,733	600

COMPANY LEASE	WELL UNIT	S.T.R.	BBLs. WATER INJ.	CUM. WATER INJ.	PAGE AVG. PRES
Larue, C. E. & B. N. Muncy, Jr. Cont'd.					
Fed. Love	16-1 K	4-18-32	450	484,979	2100
TOTAL	10		4,050	4,113,301	
PENROSE SHELLEY					
ANADARKO PRODUCTION COMPANY					
R.E. Cole	3 M	16-22-37	5,451	183,981	1000
E. M. Walden	6 N	15-22-37	24,533	460,236	
TOTAL	2		29,984	644,217	
CONTINENTAL OIL COMPANY					
Elliott A-15	1 I	15-22-37	3,802	48,018	320
GULF OIL CORPORATION					
So. Penrose Shelly Ut. Pilot Area					
"	106 C	5-22-37	-0-	755,058	0
"	111 E	"	-0-	868,340	0
"	113 G	"	332	645,196	0
"	127 K	"	-0-	792,893	0
"	129 I	6-22-37	-0-	815,190	0
"	133 M	5-22-37	-0-	715,745	0
TOTAL	6		332	4,592,422	
RED LAKE					
ATLANTIC RICHFIELD COMPANY					
W. Red Lake Unit	2UZ D	7-18-27	None	76,199	0
"	21Z D	"	3,012	260,958	739
"	4UZ F	"	None	100,734	0
"	41Z F	"	693	349,473	875
"	11UZ O	"	None	49,240	0
"	11LZ O	"	1,819	290,990	939
"	13UZ A	"	None	61,222	0
"	13LZ A	"	6,145	404,423	1146
"	14UZ H	"	None	109,064	0
"	14LZ H	"	4,484	381,145	973
"	16UZ I	"	None	126,021	0
"	16LZ I	"	1,104	197,942	984
"	17 M	5-18-27	5,009	372,270	423
TOTAL	7		22,266	2,779,681	
B & D OIL COMPANY					
S. Red Lake Grayburg Unit	3 A	35-17-27	None	290,388	
"	6 F	"	"	225,481	
"	7 H	"	"	260,749	
"	8 E	36-17-27	"	469,356	

CASING & CEMENTING PROGRAMS
IN ALL WELLS WITHIN ONE MILE OF
ADDA DISPOSAL WELL NO. A-22

BEFORE THE
OIL CONSERVATION COMMISSION PAGE 1
Santa Fe, New Mexico

OPERATOR	U	S	T	R	SURFACE	INTERCASE	PRODUCTION	T.D.	P.B.D.
ANERADA HESS CORP									
							Submitted by	5644	
							Hearing Date	4-5-64	
#1 Walden	K	15	22	37	13 3/4" @ 170' w/1200	8 3/4" @ 275' w/1200	5 1/2" @ 7870' w/600	7870'	
#2 Walden	K	15	22	37	13 3/4" @ 191' w/1200	8 3/4" @ 2775' w/1200	5 1/2" @ 6470' w/500	6470'	6384
#3 Walden	N	15	22	37	13 3/4" @ 177' w/1200	8 3/4" @ 2753' w/1200	5 1/2" @ 7875' w/600	7875'	7445
#4 Walden	L	15	22	37	13 3/4" @ 173' w/1200	8 3/4" @ 2751' w/1200	5 1/2" @ 7912' w/600	7917'	6488
#5 Walden	L	15	22	37	13 3/4" @ 173' w/1200	8 3/4" @ 2745' w/1200	5 1/2" @ 6475' w/500	6495'	6292
#6 Walden	M	15	22	37	13 3/4" @ 173' w/1200	8 3/4" @ 2762' w/1200	5 1/2" @ 8090' w/600	8090'	6408
#7 Walden	N	15	22	37	13 3/4" @ 134' w/175	8 3/4" @ 2751' w/1200	5 1/2" @ 6475' w/500	6475'	6470
#5 Wood	B	22	22	37	13 3/4" @ 173' w/1200	8 3/4" @ 2747' w/1200	5 1/2" @ 8116' w/600	8116'	5985
#6 Wood	A	22	22	37	13 3/4" @ 133' w/150	8 3/4" @ 2757' w/1400	5 1/2" @ 7524' w/600	7524'	
#7 Wood	A	22	22	37	13 3/4" @ 192' w/1200	8 3/4" @ 2758' w/1200	5 1/2" @ 6440' w/500	6440'	
#8 Wood	B	22	22	37	13 3/4" @ 161' w/1200	8 3/4" @ 2753' w/1200	5 1/2" @ 6432' w/600	6455'	
#9 Wood	G	22	22	37	13 3/4" @ 174' w/1200	8 3/4" @ 2753' w/1200	5 1/2" @ 8025' w/600	8025'	
#10 Wood	H	22	22	37	13 3/4" @ 168' w/1200	8 3/4" @ 2756' w/1200	5 1/2" @ 7476' w/600	7670'	
ANADARKO PROD CO.									
#1 Elliott-Fed.	G	15	22	37	13" @ 502' w/1200		7" @ 3574' w/350	3717'	
#2 Elliott-Fed.	G	15	22	37	8 5/8" @ 376' w/125		5 1/2" @ 4010' w/470	4010'	4001
#10 Hugh	C	14	22	37	8 5/8" @ 315' w/150		5 1/2" @ 3990' w/340	3990'	3850
#11 Hugh	F	14	22	37	8 5/8" @ 324' w/160		5 1/2" @ 3890' w/500	3890'	
#1 LMPSU Tr. 1	M	14	22	37	10" @ 478' w/100	8 3/4" @ 1053' w/75	7" @ 3854' w/150	3800'	3620
#2 LMPSU Tr. 1	M	14	22	37	8 5/8" @ 395' w/250		4 1/2" @ 3740' w/430	3740'	
#1 LMPSU Tr. 2	E	23	22	37	8 1/4" @ 111' w/300		7" @ 3245' w/50	3700'	
#2 LMPSU Tr. 2	D	23	22	37	8 5/8" @ 355' w/250		4 1/2" @ 3740' w/425	3740'	
#1 LMPSU Tr. 3	H	22	22	37	12 1/2" @ 250' w/90	8 1/4" @ 1120' w/150	6 5/8" @ 3380' w/250	3685'	
#2 LMPSU Tr. 3	G	22	22	37	12 1/2"	8 1/4"	7" @ 3383	3692'	
#3 LMPSU Tr. 3	B	22	22	37	12 1/2"	8 1/4"	7" @ 3383	3686'	
#4 LMPSU Tr. 3	D	22	22	37	12 1/2" @ 150' w/100	8 1/4" @ 1125' w/150	7" @ 3383' w/250	3686'	

CASING & CEMENTING PROGRAMS
IN ALL WELLS WITHIN ONE MILE OF
AGUA DISPOSAL WELL NO. A-22

PAGE 2

OPERATOR	U	S	T	R	SURFACE	INCL.	PRODUCTION	T.D.	P.B.D.	
ANADARKO (cont'd.)										
#1 LMPSTU Tr. 4	L	22	22	37	8 1/2" E 100' w/75	2 1/4" E 40' w/75	7" C 3370 w/150	3680		
#2 LMPSTU Tr. 4	K	22	22	37				3685		
#3 LMPSTU Tr. 4	F	22	22	37	8 1/2" E 115' w/215		7" C 3396 w/150	3680		
#4 LMPSTU Tr. 4	E	22	22	37	8 1/2" E 330' w/150		5 1/2" E 3710 w/275	3710		
#1 LMPSTU Tr. 6	A	21	22	37	15 1/2" E 175' w/75	2 1/4" E 115' w/50	6 1/2" E 3370 w/150	3636		
#1 LMPSTU Tr. 5A	D	22	22	37	16" E 195' w/60		7" C 3400 w/250	3712		
#1 LMPSTU Tr. 7	H	21	22	37	15 1/2" E 115' w/75, 15' E 237' w/100	2 1/4" E 115' w/50	6 1/2" E 3350 w/150	3620		
#3 LMPSTU Tr. 5B	M	22	22	37	13" C 95' w/100	6 1/2" E 33' w/50	4 1/2" E 3654 w/100	3654		
#7 LMPSTU Tr. 13C	B	27	22	37	16" E 122' w/100 SK		7" E 3410 w/200	3655		
#1 LMPSTU Tr. 13A	M	22	22	37	13" C 273' w/240		7" C 3360 w/400	3590		
#8 LMPSTU Tr. 13C	A	27	22	37	16" E 112' w/150		7" E 3449 w/200	3705		
#1 LMPSTU Tr. 14	O	22	22	37	8 1/2" E 355' w/325		5 1/2" E 3696 w/350	3700	3684	
#2 LMPSTU Tr. 14	J	22	22	37	12 1/2" E 250' w/100	2 1/4" E 115' w/150	6 1/2" E 3375 w/250	3689		
#1 LMPSTU Tr. 15	L	22	22	37	10 3/4" E 165' w/65	2 1/4" E 112' w/150	7" C 3375 w/175	3684	3660	
#2 LMPSTU Tr. 15	P	22	22	37	9 1/2" E 373' w/200		4 1/2" E 3708 w/375	3708	3701	
#1 LMPSTU Tr. 16	M	23	22	37	13" C 295' w/250	6 1/2" E 1143' w/200	7" C 3700 w/160	6450	3734	5" liner 310' 6449
#1 LMPSTU Tr. 17	D	26	22	37	8 1/2" E 363' w/200		4 1/2" E 3700 w/400	3700	3697	
#1 LMPSTU Tr. 40	L	23	22	37	2 1/2" E 346' w/250		4 1/2" E 3730 w/450	3740		
#2 Walden	F	15	22	37	15 1/2" E 110' w/150	8" E 1113' w/250	7" C 3695 w/250	3720		
#3 Walden	L	15	22	37	15 1/2" E 114' w/100	8" E 1122' w/250	7" C 3525	3850		5 1/2" liner 310' 3850
#4 Walden										
#5 Walden	M	15	22	37	13 1/2" E 243' w/100	8 1/2" E 1157' w/200	7" C 3389 w/175	3855	5 1/2" liner 310' 3855	310' 3855
#6 Walden	N	15	22	37	12 1/2" E 243' w/100	8" E 1143' w/200	6 1/2" E 3550 w/250	3720	3700	
#7 Walden	L	15	22	37	8 1/2" E 314' w/200		5 1/2" E 3915 w/450	3915	3900	
#8 Walden	K	15	22	37	8 1/2" E 339' w/265		5 1/2" E 4102 w/500	4102		
#9 Walden	M	15	22	37	2 1/2" E 395' w/465		5 1/2" E 4008 w/500	4008		
#11 Walden	M	15	22	37	2 1/2" E 351' w/150		5 1/2" E 4600 w/315	4600	3900	
ATLANTIC RICHFIELD CO.										
#2 Ollie J. Boyd	D	23	22	37	15 1/2" E 124' w/200	2 1/4" E 1109' w/200	7" C 3455 w/100	6470	6250	5" E 6470 w/250
#3 Ollie J. Boyd	G	23	22	37	12 1/2" E 106' w/300	2 1/2" E 2787' w/1000	(collapsed 2460)	3781		Pulled 40' 5 1/2"
#4 Ollie J. Boyd	F	13	22	37	13 1/2" E 1105' w/1000	2 1/2" E 2812' w/1000	7" C 6418 w/350	6429	6323	

**CASING & CENTERING PROGRAMS
IN ALL WELLS WITHIN ONE MILE OF
AGLA DISPOSAL WELL NO. A-22**

OPERATOR	U	S	T	R	SURFACE	INTER.	PRODUCTION	T.D.	P.B.D.
CARTER FOUNDATION									
#3 Elliott	C	22	22	37	13 3/4" C 2664 w/770	9 5/8" C 2758 w/1500	7" C 8352 w/1100	8110	6706
#4 Elliott	C	22	22	37	13 3/4" C 2632 w/765	9 5/8" C 2749 w/1500	1" C 6514 w/800	6516	
#5 Elliott	D	22	22	37	13 3/4" C 2654 w/770	9 5/8" C 2753 w/1400	7" C 6561 w/800	6502	6405
CLARY PETRO. CO.									
#7 Parks	K	14	22	37	8 5/8" C 1061 w/600		5 1/2" C 6472 w/1000	6472	
#8 Parks	J	14	22	37	8 5/8" C 1093 w/500		5 1/2" C 6500 w/1200	6500	
#9 Parks	N	14	22	37	8 5/8" C 1107 w/450		5 1/2" C 6470 w/1200	6475	
CONTINENTAL OIL CO.									
#1 Elliott A-15	P	15	22	37					
#2 Elliott A-15	O	15	22	37					
#3 Elliott A-15	O	15	22	37	10 3/4" C 234 w/200	7 5/8" C 2754 w/500	5 1/2" C 7212 w/400	7213	
#4 Elliott A-15	O	15	22	37				6530	
#6 Elliott A-15	P	15	22	37	13 3/4" C 225 w/225	9 5/8" C 2705 w/500	7" C 6524 w/900	6530	
#1 Elliott B-15	G	15	22	37	9 5/8" C 1076 w/425		7" C 6340 w/100	7353	6341
#2 Elliott B-15	P	15	22	37					
#3 Elliott B-15	I	15	22	37	13 3/4" C 222 w/225	9 5/8" C 2689 w/500	7" C 6550 w/1050	6556	6350
EXXON CO. U.S.A.									
#2 Ferrel	I	22	22	37	10 3/4" C 322 w/275	7 1/2" C 2740 w/1500	5 1/2" C 7133 w/765	7960	5740
#3 Ferrel	I	22	22	37	10 3/4" C 331 w/275	7 1/2" C 2730 w/1600	5 1/2" C 724 w/550	8190	
#98 Paddock Unit	H	15	22	37	13 3/4" C 104 w/100	8 5/8" C 2776 w/1300	5 1/2" C 6502 w/300		
GULF ENERGY & MINERALS									
#2 Boyd	O	23	22	37	13 3/4" C 312 w/300	9 5/8" C 2874 w/1300	7" C 6335 w/700	6440	
#3 Boyd	J	23	22	37	13 3/4" C 309 w/300	9 5/8" C 2873 w/1300	7" C 6340 w/700	6420	6300
#1 Cpl. "A"	P	16	22	37	13 3/4" C 311 w/740	8 5/8" C 1131 w/600	7" C 3301 w/125	3701	3680
#5 Hugh	F	14	22	37	13 3/4" C 311 w/300	9 5/8" C 2863 w/1300	7" C 6390 w/700	6478	6390
#8 Hugh	E	14	22	37	8 5/8" C 1200 w/510		5 1/2" C 6549 w/1670	6550	6519

CASING & CEMENTING PROGRAMS
IN ALL WELLS WITHIN ONE MILE OF
AQUA DISPOSAL WELL NO. A-22

OPERATOR	U	S	T	R	SURFACE	INTOK.	PRODUCTION	T.D.	P.B.D.
<u>HENDRIX</u>									
#1 Cassat "F"	C	23	22	37	2 3/4" @ 1134 w/450		5 1/2" @ 732 w/635	7324	6925
#3 Cassat "F"	D	23	22	37	8 3/4" @ 1142 w/250		5 1/2" @ 726 w/720	7267	
#4 Cassat "F"	E	23	22	37	2 3/4" @ 1145 w/450		5 1/2" @ 727 w/740	7268	7260
#5 Cassat "F"	E	23	22	37	8 3/4" @ 1121 w/450		5 1/2" @ 722 w/1250	7228	
#1 Karcles	L	23	22	37	2 3/8" @ 1110 w/400		5 1/2" @ 7590 w/1150	7709	7590
<u>PENROSE</u>									
#2 Ferrel	P	22	22	37	10" @ 1582 w/100	8 3/4" @ 1182 w/150	7" @ 337 w/100	3757	3624
<u>SAMEDAN</u>									
#1 Boyd	J	23	22	37	10 3/4" @ 249 w/150	7 1/4" @ 348 w/600	5 1/2" @ 657 w/225	6455	
#2 Boyd	J	13	22	37	9 3/4" @ 1160 w/400		4 1/2" @ 726 w/600	7243	6611
#2 Parks	M	14	22	37	13 3/4" @ 276 w/150	9 3/4" @ 365 w/1500	7" @ 780 w/500	7324	
#1 Parks	D	14	22	37	13 3/4" @ 299 w/300	9 3/4" @ 2837 w/500	7" @ 643 w/500	6455	6255
<u>SKELLY</u>									
#10 Baker	A	27	22	37	8 3/4" @ 270 w/1100		5 1/2" @ 642 w/220	6458	6420
#9 Baker	N	22	22	37	13 3/4" @ 270 w/200	2 3/4" @ 279 w/1000	5 1/2" @ 645 w/450	7362	6438
#11 Baker	B	27	22	37	2 3/4" @ 270 w/1100		5 1/2" @ 642 w/220	6452	6429
<u>SOHIO</u>									
#2 Elliott B-15-2	H	15	22	37	1 3/4" @ 336 w/200		4 1/2" @ 3815 w/450	3815	3813
#3 Walden "A"	F	15	22	37	13 3/4" @ 185 w/150	8 3/4" @ 2832 w/1100	5 1/2" @ 7365 w/500	7568	
<u>STREET</u>									
#1 Ferrel	O	22	22	37	13" @ 173 w/180	8 3/4" @ 1182 w/325	7" @ 3367 w/175	3705	

[illegible]

NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARING

SANTA FE, NEW MEXICO

Hearing Date MARCH 10, 1976 TIME: 9:00 A.M.

NAME	REPRESENTING	LOCATION
W.G. Abbott	AGUA, INC	Hobbs
• [Signature]	James Christy & Oppio	Roswell
→ Dan KERNAGHAN	Anadarko	Houston
Rub Rendon	Anadarko	Eunice N.M.
[Signature]	Anadarko	Houston, Tex.
→ Tom Kellahin	Kellahin & Fox	Santa Fe
Les Clements	N.M.O.C.E.	Helix, NM
→ A.E. Kenyon	John H. Hendrix Prod.	Midland, Texas
R.L. Casey, Jr.	Anadarko	Houston, TX.
W.L. [Signature]		
Les Clements		

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION
SANTA FE - NEW MEXICO

The State of New Mexico by its Oil Conservation Commission hereby gives notice pursuant to law and the Rules and Regulations of said Commission promulgated thereunder of the following public hearing to be held at 9 o'clock a.m. on MARCH 10, 1976, Oil Conservation Commission Conference Room, State Land Office Building, Santa Fe, New Mexico.

STATE OF NEW MEXICO TO:

All named parties and persons
having any right, title, interest
or claim in the following cases
and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian, whether or not so stated.)

CASE 5644:

Application of Agua, Inc. for the
amendment of Order No. R-5137,
Lea County, New Mexico.

Applicant, in the above-styled cause, seeks the amendment of Order No. R-5137, which authorized the disposal of produced salt water into the San Andres formation through the open-hole interval from approximately 4000 feet to 5000 feet in applicant's Blinbry-Drinkard SWD System Well No. A-22, located in Unit A of Section 22, Township 22 South, Range 37 East, Blinbry-Drinkard-Langlie Mattix Area, Lea County, New Mexico. Said order limited surface injection pressures to 100 psi, and applicant seeks its amendment to permit surface injection pressures up to 1200 psi.

GIVEN under the seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 23rd day of February, 1976.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


JOE B. RAMEY, Secretary

S E A L

*Called this
ad to Mulba
11 am 2/23/76
JH*

Dockets Nos. 10-76 and 11-76 are tentatively set for hearing on March 17 and March 31, 1976. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: COMMISSION HEARING - WEDNESDAY - MARCH 10, 1976

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

CASE 5644: Application of Agua, Inc. for the amendment of Order No. R-5137, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-5137, which authorized the disposal of produced salt water into the San Andres formation through the open-hole interval from approximately 4000 feet to 5000 feet in applicant's Blinebry-Drinkard SWD System Well No. A-22, located in Unit A of Section 22, Township 22 South, Range 37 East, Blinebry-Drinkard-Langlie Mattix Area, Lea County, New Mexico. Said order limited surface injection pressures to 100 psi, and applicant seeks its amendment to permit surface injection pressures up to 1200 psi.

This well lies on the northern edge of a problem area as outlined in Order R-5003, Paragraph 7, Page 12 of said order. This paragraph requires that quarterly braden head surveys be conducted on 450 wells in 31 sections. The Commission staff of the Hobbs Office has just concluded the 3rd quarter survey as prescribed by this order. These tests were conducted between February 16, 1976 and February 26, 1976.

Problems still exist in 43 of the 450 wells surveyed, or 9.3% of the total wells. In addition to this survey, a special braden head survey was conducted between January 26, 1976, and February 5, 1976, on 152 wells just to the north of this area in Sections 2, 3, 4, 9, 10 and 11, of T22S, R37E. These tests were conducted due to a gas contaminated water well located in the NE/4 of the NW/4 of Section 10, T22S, R37E. Of the 152 wells surveyed, 64 or 42% had either pressure on the surface or intermediate casing.

WHAT CONCLUSIONS CAN YOU DRAW FROM THE RESULTS OF THESE SURVEYS
These tests indicate that even after some 9 months of continued
monitoring and extended workovers, problems still exist in this area,
and apparently a much greater problem exists to the north of this
well, as reflected by the results of the special test just conducted.
WHAT ARE THE PLANS OF CONCERNING THE TESTING OF WELLS IN THIS AREA
The Commission plans to extend this special survey to encompass all
wells from the north boundary of the area as prescribed by R-5003 to
the northern city limits of Eunice as soon as time will permit.

OFFER EXHIBITS

1.3

SURVEY AS PRESCRIBED BY ORDER R-5003 -- 450 wells tested with ~~99%~~ with problems now.

SKELLY OIL COMPANY --- 138 wells tested -- 1.4% with pressure

Penrose Skelly B Unit	#56-L	8-23-37	20# on surface - gas
King D	#1-E	6-23-37	10# salt water puff

AZTEC OIL & GAS CO. --- 3 wells tested -- 66% with problems

State R	#1-I	36-22-37	20# flow of salt water on surface casing
State BD	#1-J	"	600# flow of salt water on int. casing

WEK DRILLING CO. INC. -- 1 well tested -- 100% with problems

Ollie I. Boyd	#1-N	23-22-37	0# -- flow of salt water from surface csg.
---------------	------	----------	--

ATLANTIC RICHFIELD CO. -- 2 wells tested -- 100% with problems

Ollie J. Boyd	#2-D	23-22-37	180# gas on int. casing
"	#4-F	"	240# gas on int. casing

CONTINENTAL OIL COMPANY -- 14 wells tested -- 21% with problems

State JJ 36	#1-G	36-22-37	790# flow salt water on surface
Stephen B-7 Com	#2-G	7-23-37	825# gas & salt water on surface
Stephen B	#11-M	7-23-37	Hole in surface casing

AMERADA HESS CORP. -- 4 wells tested -- 75% with problems

E. Wood	#6-A	22-22-37	40# gas on int. casing
"	#8-B	"	60# gas on int. casing
"	#10-H	"	425# gas on int. casing

MARATHON OIL CO. -- 5 wells tested -- 60% with problems

J.L. Muncy	#1-P	24-22-37	170# gas on int.
"	#2-K	"	435# gas on int.
"	#4-H	"	20# on surface 2 min blow

TEXAS PACIFIC OIL CO. -- 21 wells tested -- 28% with problems

Will Carey	#5-F	22-22-37	285# gas on int. casing
"	#6-K	"	160# gas on int. casing
"	#7-F	"	410# gas on int. casing
Danglade	#2-P	13-22-37	360# oil & gas on int.
Ella Drinkard	#2-E	25-22-37	640# gas & water on surface
Elliott B-13	#1-E	13-22-37	105# gas on surface

GULF OIL CORP. -- 9 wells tested -- 44% with problems

O.I. Boyd	#3-K	23-22-37	180# water on int. casing
F.J. Danglade	#1-M	13-22-37	225# on int. (nc - JWR)
"	#2-N	"	750# gas & water on surface
Ella	#2-B	25-22-37	800# salt water on surface

AGUA, INC. -- 1 well tested -- 100% with problem

Blinebry-Drinkard SWD	#35-H	35-22-37	525# gas no water 45 sec. 1175# on prod. casing - well S.I.
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ARMER OIL COMPANY --- 11 wells tested -- 27% with problems

Gulf State	#2-F	2-23-37	310# water on surface, S.I. 3 mo.
Citgo State	#1-E	2-23-37	(1200# water on prod, 100% water -- no pressure on surface, was 27# on prod. before
Flour	#1-M	35-22-37	740# water on prod, none on surface was 40# on prod.

CARTER FOUNDATION PRODUCTION CO. -- 3 wells tested -- 66% with problems

E.M. Elliott	#3-C	22-22-37	100# gas on int. casing
E.M. Elliott	#4-C	"	100# gas on int. casing - 2 sec.

STOLTZ, WAGNER & BROWN -- 1 well tested -- 100% with problems

Walden	#1-A	21-22-37	100# gas/air on surf, 5 sec, up from #20
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MORANCO -- 1 well tested -- 100% with problems

State 36	#1-K	36-22-37	280# oil on surface & salt water
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EXXON CORPORATION -- 3 wells tested -- 33% with problems

W.B. Ferrel	#2-I	22-22-37	170# gas on Int. casing
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SUMMIT ENERGY, INC. -- 6 wells tested -- 50% with problems

Drinkard Estate	#4-H	25-22-37	10# on surface, 200# on int. (nc)
Gulf Sims	#1-P	25-22-37	950# on Int. casing oil flow
Gulf B State	#1-F	36-22-37	750# oil on surface up from 105#

ANADARKO PRODUCTION CO. -- 109 wells -- 4.5% with problems

LMPSU Tr. 8	#2-C	21-22-37	38# salt water on surface
"	#3-D	"	150# salt water on surface
" Tr. 10	#2-K	"	28# slight flow of salt water
" Tr. 4	#4-E	22-22-37	5# - 1 sec with water flow
" Tr. 37	#1-J	34-22-37	25# salt water on Int. casing

SPECIAL SURVEY --- J.J. WALKER --- 152 wells --- 42% of wells with problems

EXXON Corporation -- 50 wells tested -- 50% of wells with pressure on surface or intermediate casing.

Paddock San Angelo Unit	#9-A	3-22-37	15# on int. 15 min. large volume
"	#24-L	"	150# on int. 1 min, small volume
"	#25-K	"	100# on int. 5 min. mod. volume
"	#39-O	"	60# on surface 10 min. 100# on int. 2½ min.
"	#40-P	"	150# on surface 20 min, 75# on int. leak
"	#53-A	10-22-37	300# on int. (nc)
"	#75-K	"	40# on int. (nc)
"	#88-P	"	240# water flow Int. (fresh?)
"	#67-E	11-22-37	60# on Int. (nc)
"	#78-L	"	40# on Int. (nc)
"	#89-M	"	445# on Int. (NC)
"	#30-J	2-22-37	75# on Int. 30 sec.
New Mexico S State	#24-J	"	100# on Int. 2 sec.
Paddock San Angelo Unit	#31-I	"	20# surface 10 sec, 140# Int. (nc)
New Mexico S State	#2-P	"	3# oil flow surface - 20# int. (nc)
"	#23-P	"	360# surface (nc) - 400# Int. (nc)
"	#25-N	"	300# surface salt water flow, 500# Int. (nc)
Paddock San Angelo Unit	#42-N	"	20# gas on Int. (nc)
"	#17-E	"	175# on Int. (nc)
New Mexico S State	#21-L	"	50# on Int. (nc)
Paddock San Angelo Unit	#28-L	"	35# gas on Int. (nc)
New Mexico S State	#22-M	"	275# on Int. 10 Sec
Paddock San Angelo Unit	#56-B	11-22-37	150# gas on Int. 5 sec.
"	#57-A	"	175# on Int. 30 sec.
"	#70-H	"	145# on Int. 20 sec.

SKELLY OIL COMPANY -- 5 wells tested -- 20% of wells with pressure

Baker "B"	#6-M	10-22-37	340# gas on Int.
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WARREN PETROLEUM CO. --- 3 wells tested --- 66% with pressure

Eunice Plant SWD 161	#1	3-22-37	265# gas and small amount water - 2 sec.
Mark LPG	#1	"	45# air on surface

GULF OIL CORPORATION -- 23 wells tested -- 47% with pressure

Mark	#5-A	3-22-37	290# gas & oil on Int.
"	#7-H	"	350# oil on Int.
"	#9-G	"	190# on surface air/gas
S. Penrose Skelly Unit	#144-A	9-22-37	125# salt water on surface
"	#163-H	"	590# gas on surf. 10 min, not able to blow down
Rollon Brunson	#6-B	10-22-37	20# on surf. 10 min - 210# on Int. 3 min.
Eaves	#4-H	"	200# on Int. - never blew down
"	#5-H	"	190# gas on Int. (nc)
"	#6-A	"	225# fresh water flow 10 min, on Int.
South Penrose Skelly Ut.	#143-D	10-22-37	450# salt water on surf. bleed 10 min to 190#
"	#167-N	"	130# gas on surface

ANADARKO PRODUCTION CO. -- 17 wells tested -- 17% with pressure

R.L. Brunson Tr. 1	#1-P	4-22-37	160# gas on Int.
Lou Wortham	#5-C	11-22-37	200# gas on surface
"	#6-G	"	420# gas & water on surface

JOHN HENDRIX PRODUCTION CO. -- 13 wells tested -- 30% with pressure

Cossatot L	#1-N	11-22-37	120# water flow surface
Cossatot M	#1-L	"	100# on surface 10 sec.
"	#2-M	"	50# on surface 5 sec.
Tomas Long	#2-M	"	20# on Int. 5 sec.

MOBIL OIL COMPANY -- 12 wells tested -- 16% with pressure

Brunson Argo	#5-F	10-22-37	225# on Int. 48 sec.
"	#6-E	"	375# salt water on surface & 45# on Int. 20 sec.

AMOCO PRODUCTION CO. -- 1 well tested 100% with pressure

Owen A	#2-F	3-22-37	560# on int. gas
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GETTY OIL COMPANY --- 2 wells tested --- 100% with pressure

R.L. Brunson	#1-P	4-22-37	220# gas on Int.
"	#2-P	"	695# salt water on Int.

AMERADA HESS CORP. -- 2 wells tested -- 100% with pressure

A.B. Baker	#3-I	10-22-37	250# gas on Int.
"	#4-P	"	160# gas on Int.

ATLANTIC RICHFIELD CO. 1 well tested -- 100% with pressure

R.L. Brunson	#8-L	3-22-37	1180# gas on Int.
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MARATHON OIL CO. --- 7 wells tested -- 28% with pressure

Lou Wortham	#11-F	11-22-37	45# gas on Int. 15 sec.
"	#13-C	"	45# gas on surface 1 min 15 sec.

CITIES SERVICE OIL CO. -- 10 wells tested -- 80% with pressure

Brunson B	#2-K	3-22-37	300# gas on Int.
"	#3-M	"	60# gas on Int.
"	#6-M	"	460# gas on Int.
"	#7-N	"	180# gas on Int.
Brunson C	#10-O	"	180# gas on surface
"	#12-I	"	160# gas on surface
Brunson B	#1-I	4-22-37	1190# gas on Int.
"	#5-I	"	1020# gas on Int.

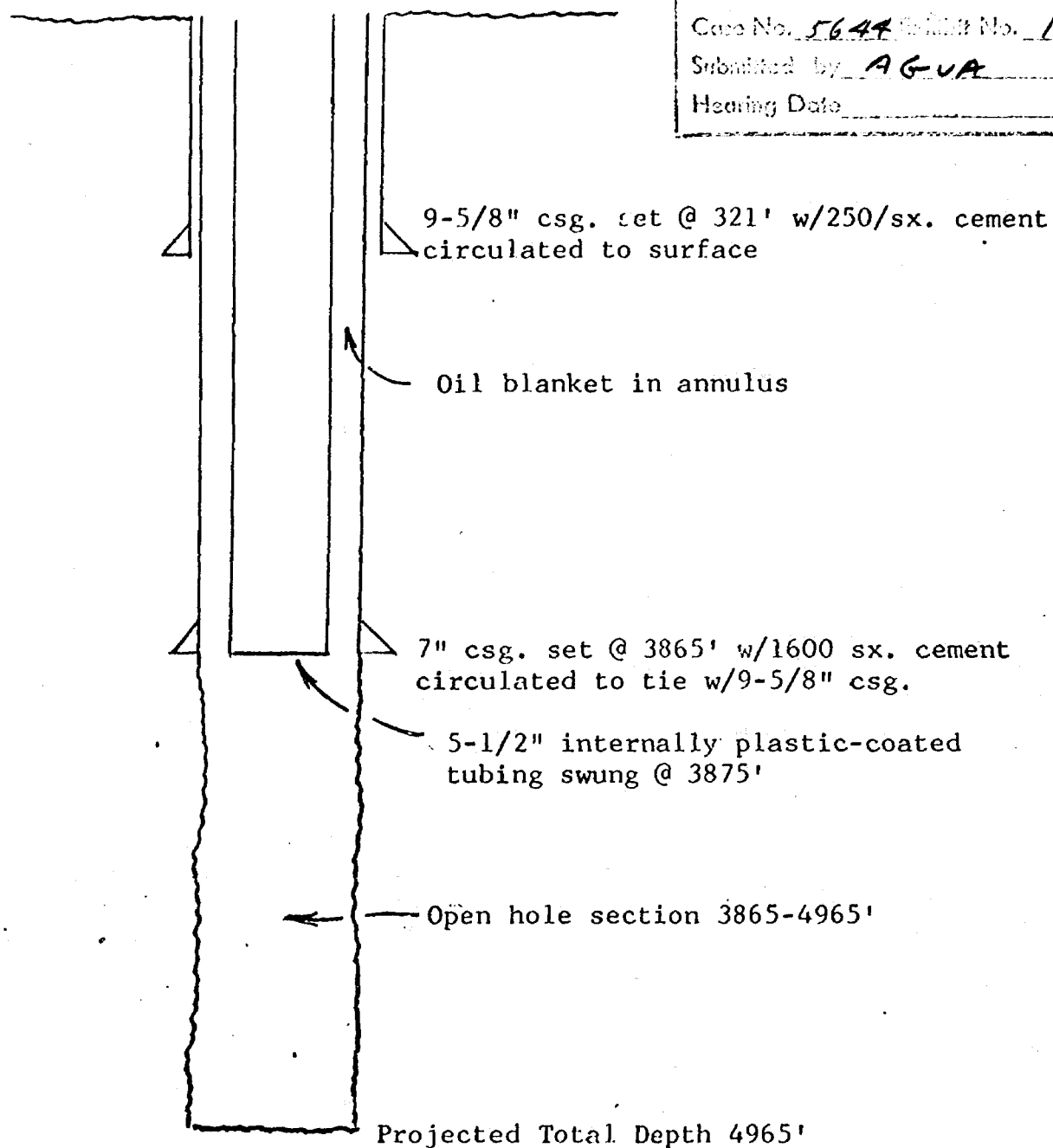
BEFORE THE
OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

Case No. 5644 Exhibit No. 1

Submitted by AGUA

Hearing Date _____



DIAGRAMMATIC SKETCH

Salt Water Disposal Well No. A-22
NE/4 NE/4 Section 22, T22S, R37E, Lea County, N.M.
BLINEBRY-DRINKARD SALT WATER DISPOSAL SYSTEM

DWN. 3/76 IVR

AGUA, INC.

SCALE

None

NO. OF COPIES RECEIVED	
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SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

Form C-105
Revised 1-1-65

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> OTHER <u>Disposal</u>		5. State Oil & Gas Lease No.	
2. TYPE OF COMPLETION NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER <input type="checkbox"/>		7. Unit Agreement Name	
3. Name of Operator <u>AGUA, INC.</u>		8. Farm or Lease Name <u>Blaineby-Drinkard SWD System</u>	
4. Address of Operator <u>P. O. Box 1978 Hobbs, New Mexico 88240</u>		9. Well No. <u>A-22</u>	
5. Location of Well UNIT LETTER <u>A</u> LOCATED <u>817</u> FEET FROM THE <u>North</u> LINE AND <u>965</u> FEET FROM THE <u>East</u> LINE OF SEC. <u>22</u> TWP. <u>22S</u> RGE. <u>37E</u> NMPM		10. Field and Pool, or Wildcat	
11. Date Spudded <u>1/26/76</u>		12. County <u>Lea</u>	
16. Date T.D. Reached <u>2/4/76</u>		18. Elevations (DF, RKB, RT, GR, etc.) <u>3352' GL</u>	
17. Date Compl. (Ready to Prod.)		19. Elev. Casinghead	
20. Total Depth <u>4965'</u>		21. Plug Back T.D.	
22. If Multiple Compl., How Many		23. Intervals Drilled By Rotary Tools <u>0-4965'</u> Cable Tools	
24. Producing Interval(s), of this completion - Top, Bottom, Name <u>3865-4965' (San Andres)</u>		25. Was Directional Survey Made <u>No</u>	
26. Type Electric and Other Logs Run <u>Schlumberger Sidewall Neutron Porosity, Gamma Ray & caliper</u>		27. Was Well Cased <u>No</u>	
28. CASING RECORD (Report all strings set in well)			
CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE
<u>9-5/8"</u>	<u>36</u>	<u>321'</u>	<u>12-1/4"</u>
<u>7"</u>	<u>20</u>	<u>3865'</u>	<u>8-3/4"</u>
LINER RECORD		TUBING RECORD	
SIZE	TOP	BOTTOM	SACKS CEMENT
31. Perforation Record (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
		DEPTH INTERVAL	
		AMOUNT AND KIND MATERIAL USED	
		<u>3865-4965'</u> <u>10,000 gals. 15% HCl acid</u>	
		<u>3865-4965'</u> <u>Re-treat w/10,000 gals. 15% HCl acid</u>	
33. PRODUCTION			
Date First Production		Production Method (Flowing, gas lift, pumping - Size and type pump)	
Date of Test		Well Status (Prod. or Shut-in)	
Hours Tested	Choke Size	Prod'n. For Test Period	
Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	
34. Disposition of Gas (Sold, used for fuel, vented, etc.)		Test Witnessed By	
35. List of Attachments <u>Inclination Report, BHP Survey Report, Sidewall Neutron Porosity & Gamma Ray Log</u>			
36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.			
SIGNED <u>[Signature]</u>		TITLE <u>Manager</u> DATE <u>3/2/76</u>	

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

T. Anhy	1117	T. Canyon	T. Ojo Alamo	T. Penn. "B"
T. Salt	1205	T. Strawn	T. Kirtland-Fruitland	T. Penn. "C"
T. Salt	2383	T. Atoka	T. Pictured Cliffs	T. Penn. "D"
T. Yates	2525	T. Miss	T. Cliff House	T. Leadville
T. 7 Rivers	2776	T. Devonian	T. Menefee	T. Madison
T. Queen	3308	T. Silurian	T. Point Lookout	T. Elbert
T. Grayburg	3603	T. Montoya	T. Mancos	T. McCracken
T. San Andres	3850	T. Simpson	T. Gallup	T. Ignacio Qtzte
T. Glorieta		T. McKee	Base Greenhorn	T. Granite
T. Paddock		T. Ellenburger	T. Dakota	T.
T. Blinberry		T. Gr. Wash	T. Morrison	T.
T. Tubb		T. Granite	T. Todilto	T.
T. Drinkard		T. Delaware Sand	T. Entrada	T.
T. Abo		T. Bone Springs	T. Wingate	T.
T. Wolfcamp		T.	T. Chinle	T.
T. Penn.		T.	T. Permian	T.
T. Cisco (Bough C)		T.	T. Penn. "A"	T.

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness In Feet	Formation	From	To	Thickness In Feet	Formation
0	1127	1127	Red beds & sand				
1127	1205	78	Anhydrite				
1205	2383	1178	Salt				
2383	2525	142	Anhydrite & shale				
2525	2776	251	Sand & shale				
2776	3308	527	Sand & anhydrite				
3308	3603	295	Anhydrite & dolomite				
3608	3850	247	Anhydrite & dolomite				
3850	4965	1115	Dolomite & limestone				

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

Case No. 56-27 Exhibit No. 2

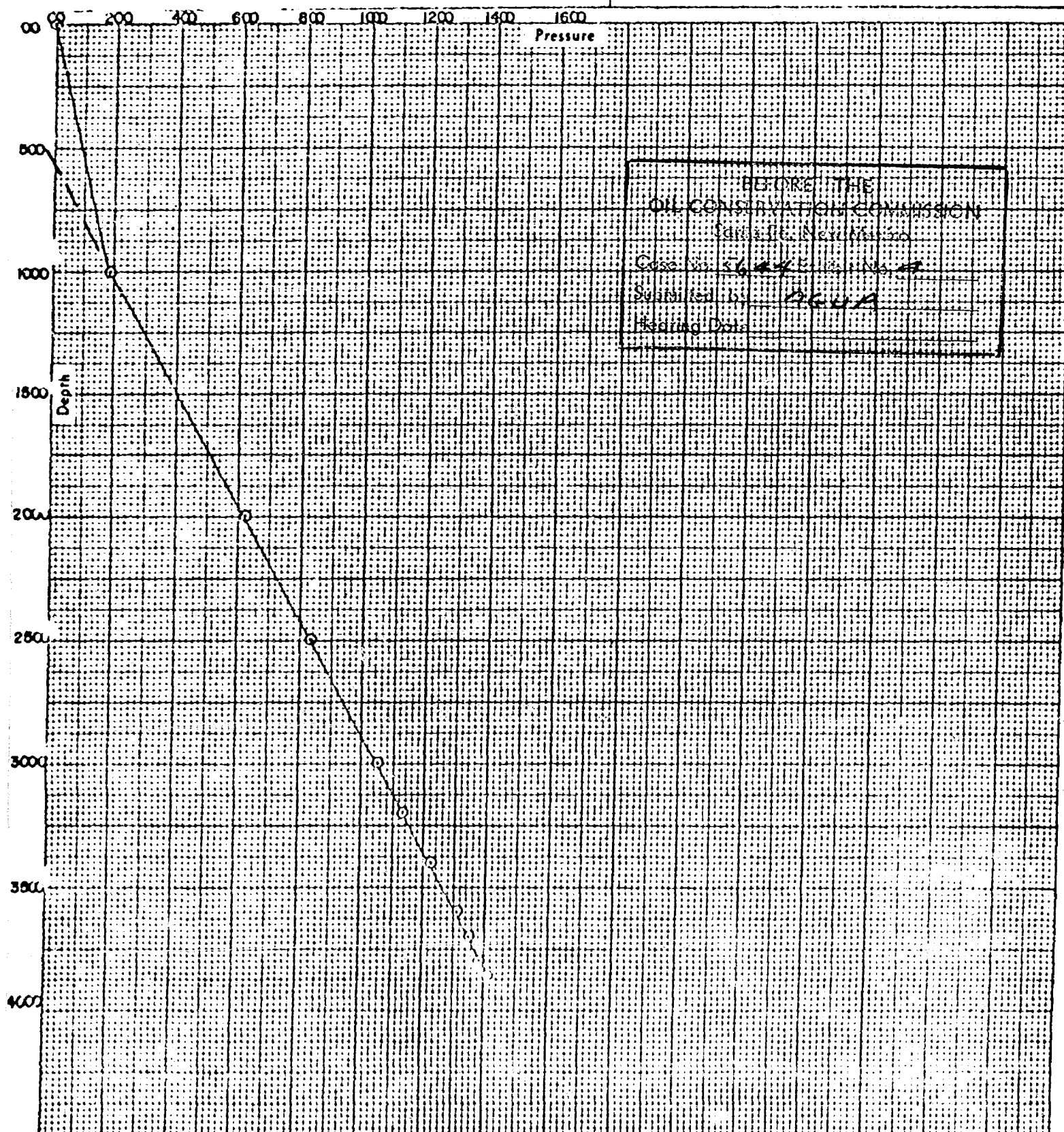
Submitted by M.G.V.A.

Hearing Date _____

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR AGUA INCORPORATED
LEASE S.W.D. A - 22
WELL NO. 1
FIELD
DATE 2-17-76 TIME 9:30 A.M.
STATUS Shut-In TEST DEPTH 3860'
TIME S.I. LAST TEST DATE
CAS PRES. BHP LAST TEST
TUB PRES. Vac. BHP CHANGE
ELEV FLUID TOP
DATUM WATER TOP 575'
TEMP RUN BY Winford Sutton
CLOCK NO 5255 GAUGE NO. 12434
ELEMENT NO. 9749-N (0-1400#)

DEPTH	PRESSURE	GRADIENT
000	Neg:	
1000	193	.193
2000	620	.427
2500	837	.434
3000	1052	.430
3200	1139	.435
3400	1225	.430
3600	1311	.430
3700	1350	.390
3800	1387	.370
3860	1408	.350



INJECTION & DISPOSAL WELL PRESSURES
IN THE 36-SECTION BREAKTHROUGH AREA

		<u>Avg. Inj. Press-psi</u>		
		<u>Nov. 1974</u>	<u>Dec. 1975</u>	
AGUA	B-D Disposal Well No. H-35	1715	Shut-in	San Andres
Anadarko	Walden Well No. 4 (SWD Well)	1200	1200	San Andres
Armer	Gulf State Well No. 1 (SWD Well)	1300	1200	San Andres
Anadarko	LMPSU (47 well avg.)	1803	1582	Queen
Petro-Lewis	N.M. "M" State (23 well avg.)	1659	1670	Queen
Skelly	Penrose "A" Unit 1975 - 29 well avg. 1974 - 28 well avg.	1800	1743	Queen
Skelly	Penrose "B" Unit 1975 - 26 well avg. 1974 - 25 well avg.	1750	1706	Queen
Anadarko	Cole Well No. 3 (M16-22-37)	1000	Not Avail.	Queen
Anadarko	Walden Well No. 6 (N16-22-37)	Not Avail.	1000	Queen
Continental	Elliott A-15 Well No. 1 (P15-22-37)	320	1400	Queen

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

Case No. 5644 Exhibit No. 7

Submitted by AGUA

Hearing Date _____

NOVEMBER 1975

1975

OPERATOR — LEASE	WELL	U L S T R	BBLS. WATER DISPOSED	CUMUL. BBLS. WATER DISP.	AVG. INJ. PRESS
AGUA INCORPORATED BLINEBRY DRINKARD	2 C	2 22S 37E	257832	2874304	VACUUM
CATO	35 H	35 22S 37E		13446411	
CORBIN ABO	5 P	5 8S 30E	20724	1185451	VACUUM
EMPIRE ABO	31 G	31 17S 33E	50304	3137230	1685
GOODWIN	1 D	1 18S 27E	2597	466924	1175
	31 E	31 18S 37E	15840	1576555	100
AMERADA HESS CORPORATION BAGLEY	1 N	2 12S 33E	118845	18222498	475
	2 N	11 12S 33E	P-AND-A	2573842	
	3 N	11 12S 33E	P-AND-A	19805293	
EAST CAPROCK	4 1	35 11S 33E	193647	2314241	VACUUM
	1 1	11 12S 32E		820978	
	2 1	14 12S 32E	134700	27317794	VACUUM
	3 1	14 12S 32E		37913484	
HIGHTOWER SWD SYSTEM KNOWLES	4 1	11 12S 32E	145925	2010174	VACUUM
	1 1	27 12S 33E	3	1559806	VACUUM
	1 1	2 17S 38E		14185222	475
L W WARD WIMBERLY	2 1	34 16S 38E	12757	25923	VACUUM
	5 1	11 13S 38E	73075	6742120	VACUUM
	13 1	24 25S 37E	21433	7635094	475
AMERICAN PETROFINA COMPANY OF TEXAS FEDERAL C	2 E	21 8S 36E	648	530102	400
AMOCO PRODUCTION CO BATE FEDERAL	3 C	35 19S 33E	6360	180994	VACUUM
BOUGH SWD SYSTEM	1 J	13 9S 34E	P-AND-A		
CATO	1 M	3 8S 30E		673562	
FARNSWORTH	1 N	7 26S 37E	150144	15005399	VACUUM
FOWLER	1 I	9 24S 37E	40755	255417	VACUUM
GLADIOLA	1 P	24 12S 37E	P-AND-A	5335553	
MIDWEST MORGAN FEDERAL	1 I	13 7S 33E	327	122192	650
MILLER FEDERAL	4 L	35 7S 31E	785	139926	VACUUM
STATE CF	1 I	13 11S 27E		774292	
	1 K	13 11S 27E	12600	59480	VACUUM
ANADARKO PRODUCTION COMPANY E W WALDEN	4 K	15 22S 37E	10902	2073798	1200
ARAH INC. STATE LC	1 I	1 17S 36E	232595	2291744	VACUUM
SAM D. ARES	3 D	2 25S 36E	1342	169019	100
ARNOTT RAMSAY A	4 M	35 24S 36E	3855	134784	GRAVITY
EVERETT					
ARMER OIL COMPANY GULF STATE	1 M	2 23S 37E	3198	147449	1200
ASHMUN AND HILLIARD G K MCDONALD	1 P	1 13S 37E	DISCONNECT	234267	
ATLANTIC RICHFIELD COMPANY	1 D	9 20S 33E	P-AND-A	306492	
ARCO FEDERAL	6 L	22 20S 34E	16992	1660402	2100
BALLARD DE FEDERAL	1 D	13 15S 37E	250232	78608121	DE
DENTON					

BEFORE THE
OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

Case No. 5644 Exhibit No. 8

Submitted by AGUA

Hearing Date

COMPANY LEASE	WELL UNIT	S.T.R.	BBLs. WATER INJ.	CUM. WATER INJ.	AVG. I PRESS.
AMERADA HESS CORP. CONT'D.					
L.M.W.U.	802 F	33-24-37	9,488	1,144,234	890
"	804 D	"	10,674	603,387	800
"	902 L	"	11,860	500,197	"
TOTAL	29		274,715	29,257,088	
AMOCO PRODUCTION COMPANY					
Cortland Myers Unit	2 P	22-24-37	22,776	1,701,245	839
"	5 F	"	15,568	1,529,581	729
"	6 J	"	13,596	1,586,626	705
TOTAL	3		51,940	4,817,452	
ANADARKO PRODUCTION COMPANY					
LMPSU Tr. 1	2 M	14-22-37	4,282	442,458	1500
" Tr. 2	2 D	23-23-37	9,170	504,909	1550
" Tr. 3	1 B	22-22-37	8,496	934,075	1150
"	3 B	"	7,256	503,657	1000
" Tr. 4	1 L	"	5,273	975,991	1300
"	3 F	"	6,406	899,697	"
" Tr. 5A	1 D	"	3,571	478,080	
" Tr. 4 B	11 P	21-22-37	4,990	901,362	1500
" Tr. 7	1 H	"	5,200	891,880	"
"	3 B	"	5,225	393,660	1650
" Tr. 8	1 F	"	6,473	889,248	1300
" Tr. 9	1 P	20-22-37	3,659	1,119,599	1250
" Tr. 10	3 J	21-22-37	8,266	958,301	1350
"	4 L	"	3,647	855,415	1450
" Tr. 12	1 N	21-22-37	5,608	855,485	1650
" Tr. 13A	1 N	22-22-37	4,666	890,874	1660
" Tr. 13B	2 D	27-22-37	7,284	845,622	1675
" Tr. 13C	5 F	"	2,305	869,665	1550
"	7 B	"	6,670	957,076	1750
" Tr. 14	2 J	22-22-37	6,787	910,478	1550
" Tr. 15	2 P	"	3,397	816,854	1775
" Tr. 17	1 D	26-22-37	4,120	643,910	1750
" Tr. 18	2 L	"	3,250	1,028,642	"
" Tr. 19	2 P	27-22-37	4,900	1,329,053	1775
"	4 H	"	1,600	566,273	"
"	5 J	"	1,520	1,231,206	"
" Tr. 21	2 N	"	5,330	1,372,967	1750
"	3 D	34-22-37	1,980	1,047,245	1725
"	7 F	"	2,820	1,214,429	1750
" Tr. 22	1 L	27-22-37	2,910	994,663	"
" Tr. 24	4	28-22-37	2,748	991,329	1100
" Tr. 25	2 h	"	3,616	689,815	1650
"	3 B	"	4,414	852,994	1400
" Tr. 28	3 F	"	3,911	880,061	1700

COMPANY LEASE	WELL UNIT	S.T.R.	BBLs. WATER INJ.	CUM. WATER INJ.	AVG. D. PRESS.
ANADARKO CONT'D.					
LMPSU Tr. 28	4 L	28-22-37	4,678	1,110,876	1500
"	7 N	"	1,191	827,892	1710
" Tr. 29	2 H	29-22-37	4,836	1,110,965	1610
" Tr. 31	1 H	32-22-37	3,176	1,088,833	1650
" Tr. 32	2 D	33-22-37	3,847	1,071,611	1700
" Tr. 33	1 F	"	3,039	988,408	1300
" Tr. 35	2 H	"	None	1,208,301	
"	3 B	"	1,711	969,080	1700
" Tr. 36	1 B	34-22-37	3,270	2,225,241	1775
"	4 H	"	6,160	1,970,363	"
" Tr. 37	1 J	"	3,770	1,896,957	1750
"	3 P	"	450	1,236,558	1775
" Tr. 38	1 D	28-22-37	4,062	1,038,979	1650
" Tr. 39	1 P	29-22-37	4,043	1,125,865	1660
" Tr. 40	1 L	23-22-37	3,882	445,102	1725
TOTAL	49		209,865	48,051,994	
BUCKLES, GAO. L.					
Knight	5 M	22-24-37	6,950	839,942	510
"	6 P	21-24-37	2,300	709,713	310
"	7 I	"	260	473,440	1100
"	8 L	22-24-37	435	640,507	"
"	9 L	"	5,580	844,096	800
"	10 M	"	6,200	899,933	750
"	11 M	"	950	255,483	1100
"	12 P	21-24-37	7,645	1,129,865	800
"	13 P	"	2,140	314,265	900
Jamison	5 H	"	5,580	432,922	1100
"	6 H	"	11,082	1,223,027	"
TOTAL	11		49,122	7,763,193	
CARTER FOUNDATION PRODUCTION COMPANY					
Blinebry Fed. E	11 P	34-23-37	6,403	797,173	1100
"	13 M	35-23-37	6,727	651,247	"
"	14 I	34-23-37	3,310	628,728	"
"	15 E	35-23-37	5,030	586,561	"
"	16 G	34-23-37	None	442,393	0
"	17 P	"	"	319,306	0
TOTAL	6		21,470	3,425,408	
CONTINENTAL OIL COMPANY					
Jack AB-29	2 I	29-24-37	12,154	959,507	800
"	4 O	"	25,180	1,151,806	"
"	6 G	"	17,916	819,112	"
TOTAL	3		55,250	2,930,425	

LIE MATTIX WATER INJECTION WELLS DEC. - CONT'D.

ANY E	WELL UNIT	S.T.R.	BBLs. WATER INJ.	CUM. WATER INJ.	PAGE # 53 AVG. INJ. PRESS.
L OIL CORPORATION					
Grey Qu. Ut.	2 D	3-25-37	15,500	1,220,435	700
	4 B	"	12,400	951,806	1000
	6 A	"	11,625	827,892	600
	9 F	"	4,650	644,637	975
	13 I	4-25-37	None	63,026	0
	15 L	3-25-37	9,300	703,999	800
	17 J	"	10,850	916,053	900
	19 P	"	18,600	1,007,593	600
	20 M	"	3,100	436,761	850
	23 O	"	10,850	1,061,582	600
	27 H	4-25-37	6,200	311,978	1000
	11		103,075	8,145,762	
L OIL CORPORATION					
Lie Mattix Queen Unit	2 E	14-25-37	13,883	1,637,608	100
	3 M	10-25-37	1,851	527,294	750
	7 P	"	13,883	1,147,645	300
	11 B	15-25-37	7,713	805,604	700
	13 D	14-25-37	12,340	1,541,327	300
	14 D	"	13,883	1,541,963	50
	15 F	15-25-37	2,314	516,556	750
	17 H	"	20,053	1,309,340	700
	19 J	"	6,942	747,166	525
	21 L	14-25-37	24,681	1,938,420	750
	22 N	15-25-37	1,851	267,519	575
	25 P	"	20,053	1,500,147	450
	27 M	14-25-37	20,053	1,177,532	100
	28 B	22-25-37	8,484	514,066	475
	31 D	23-25-37	10,798	1,721,391	400
	32 G	22-25-37	23,138	750,360	100
	35 E	23-25-37	23,140	2,125,205	700
	17		225,060	19,769,142	
O-LEWIS CORPORATION					
" State	4 C	19-22-37	(Gas Well)	399,694	0
	13 K	20-22-37	4,565	905,620	1750
	14 H	31-22-37	1,682	764,542	1425
	15 N	29-22-37	5,677	861,961	1950
	16 J	"	8,292	1,008,085	1500
	20 F	"	9,049	255,983	1750
	22 B	"	4,350	1,061,845	1925
	23 C	"	3,740	894,232	1900
	24 O	19-22-37	8,392	923,218	"
add 14	25 L	29-22-37	8,939	305,195	1700 + 1700

LANGLIE MATTIX WATER INJECTION DEC. - CONT'D.

COMPANY

LEASE

WELL
UNIT

S.T.R.

BBLS. WATER
INJ.

CUM. WATER
INJ.

PAGE # 54
AVG. INJ.
PRESS.

PETRO-LEWIS CORP. CONT'D.

N.M. "M" State

"	27 H	30-22-37
"	28 I	"
"	31 A	"
"	32 M	19-22-37
"	33 K	"
"	34 D	29-22-37
"	37 M	20-22-37
"	38 G	30-22-37
"	41 O	"
"	42 E	19-22-37
"	44 I	"
"	45 C	30-22-37
"	46 G	19-22-37
"	47 N	20-22-37

8,349
4,726
7,016
399
7,197
5,841
7,364
4,366
1,602
1,613
9,781
18
3,681
11,812

355,534
962,708
866,367
754,584
1,123,695
320,098
1,006,561
941,211
793,979
542,573
919,229
191,637
700,352
393,139

1850
1900
1875
1750
1200
1900
1650
1600
1400
0
1400
1975
775
1625

TOTAL
RESERVE OIL & GAS COMPANY
Cooper Jal Unit

25	104 E	18-24-37
"	107 K	"
"	109 K	"
"	110 I	"
"	112 M	13-25-36
"	114 O	"
"	116 M	17-24-37
"	118 O	"
"	120 C	24-24-36
"	122 A	"
"	124 C	19-24-37
"	127 H	24-24-36
"	130 K	"
"	133 K	19-24-37
"	136 P	24-24-36
"	137 D	25-24-36
"	139 B	"
"	141 D	30-24-37
"	143 F	25-24-36
"	144 H	"
"	145 G	18-24-37
"	146 I	13-24-36
"	147 E	19-24-37
"	148 J	24-26-36

135,966
11,997
9,389
11,997
11,997
11,997
8,700
11,997
8,700
11,997
11,997
11,997
12,026
10,874
11,997
None
11,997
11,997
11,997
11,997
11,997
8,700
8,700
12,043

18,344,497
567,046
373,710
570,055
436,291
584,310
581,005
425,029
570,586
427,496
578,691
573,432
581,783
589,659
544,269
581,931
184,965
577,890
579,977
587,552
584,389
582,980
426,183
430,861
584,631

533
277
0
1002
1038
951
1348
598
1105
919
0
1056
1087
0
1171
0
1085
1055
584
1082
970
1290
1248
839

TOTAL

24

259,087

12,524,721

LANGLIE MATTIX WATER INJECTION WELLS DEC. - CONT'D.

PAGE # 5

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	AVG. T PRESS.
SKELLY OIL CO. CONT'D.					
Myers Langlie Mattix Ut.	140 G	6-24-37	10,964	51,767	740
"	142 E	5-25-37	10,939	47,563	720
"	157 K	2-24-37	S.I.	22,467	0
"	169 K	5-24-37	10,607	51,256	100
"	171 K	6-24-37	10,939	50,610	0
"	175 O	"	10,939	50,547	0
"	*179 O	5-24-37	14,979	14,979	560
"	198 A	8-24-37	10,599	51,253	0
"	200 G	"	10,547	46,984	425
"	**202 A	7-24-37	10,939	50,714	340
"	216 G	8-24-37	10,594	51,197	0
"	233 K	"	10,593	51,527	0
"	235 I	7-24-37	10,939	46,567	340
"	241 K	12-24-36	10,940	46,655	0
"	63 A	36-23-36	10,963	35,905	0
"	208 G	12-24-36	10,939	35,884	140
"	101 K	36-23-36	10,963	26,876	0
"	144 G	5-24-37	10,579	26,438	0
"	***177 M	"	10,625	36,137	500
"	107 O	31-23-37	10,963	30,996	320
"	214 E	8-24-37	10,633	14,998	0
"	*248 M	"	2,974	2,974	375

(*179-0 Nov.&Dec.total)(**202-A Nov.Cum.39775,not 39,795)(Nov.Total Cum. 1,128,785)(Nov.177-0 posted in error,eliminate)

TOTAL	39		427,380	1,556,165	
SKELLY OIL COMPANY					
Skelly Penrose "A" Unit	2 L	34-22-37	9,005	1,443,196	1940
"	4 J	33-22-37	4,610	747,150	"
"	6 J	"	6,300	803,005	1950
"	8 N	"	1,590	598,579	1940
"	10 P	33-23-37	9,080	927,535	1810
"	12 N	34-22-37	8,716	2,405,878	1800
"	13 B	3-23-37	9,360	566,875	1580
"	17 B	4-23-37	2,725	643,905	1900
"	21 H	"	14,610	852,965	1920
"	23 F	3-23-37	15,390	1,339,995	1500
"	26 J	"	16,330	1,352,685	1675
"	28 L	"	7,555	1,119,860	1400
"	30 J	4-23-37	7,650	566,630	1850
"	32 L	"	3,775	877,235	"
"	34 N	"	6,355	592,160	1550
"	36 P	"	14,820	1,017,357	1750
"	38 N	3-23-37	10,625	853,955	1900
"	40 P	"	7,255	707,575	1900

COMPANY LEASE	WELL UNIT	S.T.R.	BBLs. WATER INJ.	CUM. WATER INJ.	AVG. INJ. PRESS.
SKELLY OIL CO. CONT'D.					
Skelly Penrose "A" Unit	42 B	10-23-37	8,920	818,156	1920
"	44 D	"	8,575	869,120	1800
"	46 B	9-23-37	8,030	977,570	1350
"	48 H	"	6,785	657,855	1700
"	50 F	10-23-37	11,860	791,250	1725
"	52 H	10-23-37	1,940	482,120	1960
"	53 J	"	3,740	391,970	1750
"	55 L	"	7,315	739,770	1800
"	57 J	9-23-37	4,250	755,052	"
"	59 P	"	6,195	225,695	750
"	61 F	4-23-37	9,205	597,800	1920
TOTAL	29		232,566	24,722,898	
SKELLY OIL COMPANY					
Skelly Penrose "B" Unit	1 B	32-22-37	7,780	504,379	1900
"	3 D	"	7,695	1,121,903	1500
"	5 F	"	8,765	1,058,944	"
"	8 J	"	10,290	627,745	1800
"	10 L	"	8,130	372,626	1900
"	12 P	31-22-37	7,925	863,675	2090
"	14 N	32-22-37	6,005	932,030	1750
"	16 P	"	7,445	972,870	1800
"	17 D	4-23-37	5,600	730,936	2000
"	19 B	"	4,400	435,805	"
"	21 D	"	6,615	622,400	1800
"	25 H	6-23-37	7,565	1,117,045	"
"	27 F	5-23-37	7,005	1,203,309	"
"	29 H	"	1,535	767,940	2075
"	32 J	"	4,429	563,519	2100
"	34 L	"	6,240	601,060	1900
"	36 P	6-23-37	4,258	1,342,501	1600
"	38 N	5-23-37	6,152	1,314,305	1600
"	40 P	"	5,656	1,097,856	1900
"	42 D	9-23-37	6,462	911,272	1200
"	45 D	7-23-37	7,970	708,485	"
"	50 H	9-23-37	S.I.	1,127,768	
"	52 F	"	1,881	800,420	1600
"	54 L	"	7,191	881,776	"
"	59 P	8-23-37	7,572	199,593	1450
"	61 N	9-23-37	5,954	166,387	1300
"	62 F	8-23-37	T.A.	835,736	
"	63 B	"	5,060	575,450	1200
TOTAL	28		165,580	22,457,735	

PENROSE SKELLY

ANADARKO PRODUCTION COMPANY

COMPANY	WELL UNIT	S.T.R.	BBLs. WATER INJ.	CUM. WATER INJ.	AVG. INJ. PRESS.
R.E. Cole	3 M	16-22-37	7,709	278,949	
E.M. Walden	6 N	16-22-37	19,421	782,121	1000
TOTAL	2		27,130	1,061,070	

CONTINENTAL OIL COMPANY

Elliott A-15	1 I	15-22-37	7,316	159,339	14.00
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GULF OIL CORPORATION

South Penrose Skelly Unit Pilot Area

106 O	6-22-37	None	756,632		
111 E	"	"	870,129		
113 G	"	"	647,597		
127 K	"	"	795,321		
129 I	6-22-37	"	817,174		0
133 M	5-22-37	"	719,344		

TOTAL	6		None	4,606,197	
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RED LAKE

ATLANTIC RICHFIELD COMPANY

W. Red Lake Unit	2UZ D	7-18-27	None	76,199	0
"	21Z D	"	2,991	294,397	730
"	4UZ F	"	None	100,734	0
"	41Z F	"	1,609	389,073	693
"	11UZ O	"	None	49,240	0
"	111Z O	"	1,861	341,779	798
"	13UZ A	"	None	61,222	0
"	131Z A	"	3,314	459,829	972
"	14UZ H	"	None	109,064	0
"	141Z H	"	1,578	426,598	990
"	16UZ I	"	None	126,021	0
"	161Z I	"	771	214,091	734
"	17 M	5-18-27	2,057	423,938	542

TOTAL	7		14,181	3,072,185	
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B & D OPERATING COMPANY

S. Red Lake Grayburg Unit	3 A	35-17-27	800	306,983	300
"	6 F	"	400	235,771	"
"	8 E	36-17-27	800	486,451	"
"	9 E	"	500	237,120	"
"	11 G	"	500	206,652	"
"	18 J	35-17-27	400	217,245	"

SOUTHEAST NEW MEXICO SALT WATER DISPOSAL SYSTEMS

NOVEMBER, 1974

COMPANY LEASE	WELL UNIT	S.T.R.	NOV. BBLs. WATER DISPOSED	ACCUM. BBLs. WATER DISPOSED	Pressure
<div style="float: right; border: 1px solid black; padding: 5px; transform: rotate(-10deg);"> 1974 BEFORE THE OIL CONSERVATION COMMISSION Santa Fe, New Mexico Case No. 5641 Submitted by <u>AGUA</u> Hearing Date <u>1715 psi</u> <u>Vacuum</u> <u>2125 psi</u> <u>1030</u> <u>100#</u> </div>					
AGUA, INC.					
Bliebry Drinkard	H-35 H	35-22-37	173,000	11,647,919	
	C-2 C	2-22-37	86,156	1,112,596	
Cato	P-5 P	5-18-30	16,079	1,015,509	
Corbin Abo	G-31 G	31-17-33	47,473	2,560,519	
Empire	O-1 O	1-18-27	8,310	387,463	
Goodwin	E-31 E	31-18-37	15,840	1,358,975	
AMERADA HESS CORPORATION					
Bagley	1 N	2-12-33	110,540	16,876,629	Vacuum
	2 C	11-12-33	P&A	2,573,842	
	3 F	"	T.A.	19,592,012	
	4 N	35-11-33	119,066	119,066	Vacuum
L.W. Ward	2 J	11-13-38	80,048	5,774,112	"
East Caprock	1 I	11-12-32	-0-	820,978	
	2 B	14-12-32	-0-	27,484,891	
	3 C	"	-0-	37,913,484	
	4 O	11-12-32	169,925	294,719	Vacuum
Hightower	1 P	27-12-33	-0-	1,558,601	
Knowles	1 D	2-17-37	19,238	14,025,126	475#
Wimberly	13 M	24-25-37	28,804	6,271,438	
AMERICAN PETROFINA COMPANY OF TEXAS					
Federal "C"	2 E	21-8-36	1,657	515,603	1400
AMOCO PRODUCTION COMPANY					
Bates Federal	3 C	35-19-33	6,480	108,202	Vacuum
Cato	1 M	3-18-30	0	673,562	
Farnsworth	1 N	7-26-37	148,080	13,208,776	25#
Fowler	1 I	9-24-37	25,751	1,699,780	Vacuum
Miller	4 L	35-17-31	2,033	127,993	"
Morgan D Federal	5 I	13-7-33	700	119,080	650 psi
State CF	1 I	13-11-27	10,800	697,894	1800 psi
ANADARKO PRODUCTION COMPANY					
Walden	4 K	15-22-37	3,862	1,990,741	1200
ARCO					
Empire Abo Unit C	49 L	29-17-29	29,478	184,799	Gravity

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	
MERADA HESS CORPORATION CONT'D.					
MWU	119 J	33-24-37	13,711	822,325	1100
	121 H	34-24-37	13,711	881,292	"
	122 F	"	6,856	989,645	1180
	124 D	"	13,711	1,811,851	1100
	125 B	"	6,856	540,845	1180
	142 L	"	15,082	1,212,876	1100
	151 J	"	13,711	1,132,414	1050
	165 N	"	8,227	290,911	975
	166 P	"	12,340	383,908	650
	202 N	28-24-37	274	657,777	175
	204 M	"	15,082	531,664	700
	302 H	28-24-37	9,598	1,823,785	1120
	307 P	"	13,711	1,931,758	1100
	308 J	"	13,711	1,452,633	1120
	504 F	27-24-37	2,742	375,990	1200
	505 C	"	823	351,190	1175
	601 L	"	13,712	1,874,104	1100
	604 N	"	4,113	1,282,332	1150
	703 J	"	13,025	906,152	"
	707 P	"	1,372	163,689	1190
	710 H	34-24-37	8,227	595,268	"
	802 F	33-24-37	12,340	1,016,642	800
	804 D	"	13,712	469,757	700
	902 L	"	13,712	347,059	700
TOTAL	29		295,478	25,879,834	
AMOCO PRODUCTION COMPANY					
Cortland Myers Unit	2 P	22-24-37	22,373	1,399,762	804
	*5 F	"	18,993	1,320,891	805
	6 J	"	27,644	1,293,440	840
(*5-F Sept. Cum. error 1,281,774 not 1,280,774)					
TOTAL	3		69,010	4,014,093	
ANADARKO PRODUCTION COMPANY					
LMPSU	Tr. 1	2 M	14-22-37	374,690	1500
	Tr. 2	2 D	23-23-37	405,845	1200
	Tr. 3	1 H	22-22-37	826,655	1175
		3 B	"	401,088	1100
	Tr. 4	1 L	"	887,164	1600
		3 E	"	795,326	1500
	Tr. 5A	1 D	"	411,403	
	Tr. 5B	1 P	21-22-37	829,235	1700
	Tr. 7	1 H	"	820,101	1725
		3 B	"	316,220	1500
	Tr. 8	1 F	"	810,523	1725
			15,133		

LANGLE MATIX WATER INJECTION WELLS NOV. - CONT'D.

PAGE # 55
AVG. INJ.
PRESS.

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	
ANADARKO PRODUCTION COMPANY CONT'D.					
LMFSU Tr. 9	1 P	20-22-37	13,677	1,055,331	2025
" Tr. 10	3 J	21-22-37	13,150	854,026	1700
"	4 L	"	12,613	791,895	1800
" Tr. 12	1 N	21-22-37	12,813	783,710	1875
" Tr. 13A	1 N	22-22-37	14,670	823,752	1850
" Tr. 13B	2 D	27-22-37	9,587	762,332	1650
" Tr. 13C	5 F	"	5,668	831,603	1850
"	7 B	"	6,030	883,706	1725
" Tr. 14	2 J	22-22-37	3,684	820,024	1450
" Tr. 15	2 P	"	13,157	764,705	1800
" Tr. 17	1 D	26-22-37	10,750	572,790	1750
" Tr. 18	2 L	"	9,290	970,392	1650
" Tr. 19	2 P	27-22-37	7,960	1,267,533	1900
"	4 H	"	5,030	541,883	1825
"	5 J	"	6,020	1,206,586	2000
" Tr. 21	2 N	"	9,190	1,304,047	"
"	3 D	34-22-37	6,350	999,945	1900
"	7 F	"	13,050	1,160,359	2000
" Tr. 22	1 L	27-22-37	5,020	946,163	1700
" Tr. 24	4 J	28-22-37	7,444	932,328	2025
" Tr. 25	2 H	"	10,770	630,858	1900
"	3 B	"	10,681	786,596	1850
" Tr. 28	3 F	"	13,021	815,050	2025
"	4 L	"	12,468	1,043,635	"
"	7 N	"	8,963	799,821	"
" Tr. 29	2 H	29-22-37	9,848	1,050,975	"
" Tr. 31	1 H	32-22-37	1,023	1,043,158	"
" Tr. 32	2 D	33-22-37	11,518	1,027,611	"
" Tr. 33	1 F	"	7,226	945,996	"
" Tr. 35	2 H	"	None	1,208,301	
"	3 B	"	11,953	923,259	2025
" Tr. 36	1 B	34-22-37	2,190	2,169,489	1700
"	4 H	"	5,170	1,910,893	2000
" Tr. 37	1 J	"	6,640	1,843,547	"
"	3 P	"	13,130	1,193,748	1950
" Tr. 38	1 D	28-22-37	2,295	960,161	2025
" Tr. 39	1 P	29-22-37	11,884	1,060,324	"
" Tr. 40	1 L	23-22-37	11,970	387,730	1900
TOTAL	49		490,790	44,952,512	
BUCKLES, GEO. L.					
Knight	5 M	22-24-37	7,180	761,820	150

COMPANY- LEASE	WEL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	AVG. INJ. PRESS.
MOBIL OIL CORP. CONT'D.					
Langlie Mattix Queen Unit	19 J	15-25-37	5,162	646,296	500
	21 L	14-25-37	9,679	1,765,708	500
	22 N	15-25-37	1,291	212,042	450
	25 P	"	6,453	1,332,686	450
	27 M	14-25-37	7,743	979,082	50
	28 B	22-25-37	1,291	411,971	300
	31 D	23-25-37	9,034	1,523,184	150
	32 G	22-25-37	3,872	632,566	350
	35 E	23-35-37	9,035	1,918,185	1000
TOTAL	17		92,921	17,377,476	
PETRO-LEWIS CORPORATION					
N.M. "M" State	4 C	19-22-37	(Gas Well)	399,694	0
	13 K	20-22-37	7,561	827,428	1665
	14 H	31-22-37	1,043	736,933	1745
	15 N	29-22-37	6,917	760,146	1835
	16 J	"	6,389	902,640	1420
	20 F	"	9,578	153,442	1575
	22 B	"	7,102	969,578	1850
	23 C	"	6,203	816,220	1825
	24 O	19-22-37	7,295	819,701	1625
	25 L	29-22-37	9,158	189,844	1650
	26 E	"	10,258	978,482	1825
	27 H	30-22-37	7,707	256,108	1800
	28 I	"	5,772	872,060	1825
	31 A	"	7,756	775,930	"
	32 M	19-22-37	3,903	700,537	1755
	33 K	"	10,602	1,017,747	1155
	34 D	29-22-37	6,066	258,419	1850
	37 M	20-22-37	8,492	894,065	1750
	38 G	30-22-37	8,374	866,473	1825
	41 O	"	6,932	727,230	1850
	42 E	19-22-37	2,570	489,822	0
	44 I	"	7,747	809,467	1325
	45 C	30-22-37	2	191,027	1910
	46 G	19-22-37	5,330	623,566	625
	47 N	20-22-37	9,518	264,439	1640
TOTAL	25		162,275	16,300,998	
RESERVE OIL & GAS COMPANY					
Cooper Jal Unit	104 E	18-24-37	12,656	402,643	553
"	107 K	"	12,656	263,715	350
"	109 K	"	12,656	405,977	0
"	110 I	"	12,656	272,369	968

LANGELIE MATTIX WATER INJECTION WELLS NOV. - CONT'D.						PAGE # 60
COMPANY- LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	AVG. INJ. PRESS.	
SHELL OIL CO. CONT'D.						
Langlie Mattix W.F. Ut. #1	17 O	23-24-37	3,723	1,189,578	1500	
TOTAL	9		34,211	9,084,148		
SKEELLY OIL COMPANY						
J. C. Johnson	4 D	20-23-37	1,665	1,665	0	
SKEELLY OIL COMPANY						
Myers Langlie Mattix	157 K	2-24-37	None	22,467		
SKEELLY OIL COMPANY						
Skelly Penrose "A" Unit	2 L	34-22-37	5,460	1,363,866	1970	
"	4 J	33-22-37	7,260	703,205	1960	
"	6 L	"	1,115	756,815	1970	
"	8 B	"	5,590	566,264	1960	
"	10 P	"	9,740	840,405	1880	
"	12 N	34-22-37	9,680	2,303,615	1725	
"	13 B	3-23-37	8,980	488,905	1500	
"	17 B	4-23-37	7,870	594,480	1840	
"	21 H	"	9,705	740,695	1440	
"	23 F	2-23-37	25,300	1,209,345	1750	
"	26 J	"	24,855	1,166,925	1860	
"	28 L	"	None	1,031,895	0	
"	30 J	4-23-37	13,590	502,185	1950	
"	32 L	"	9,980	799,970	2000	
"	34 N	"	9,410	517,445	1680	
"	36 P	"	14,075	911,177	1800	
"	38 N	3-23-37	2,495	782,425	1880	
"	40 P	"	7,170	613,035	1850	
"	42 B	10-23-37	10,230	723,946	1985	
"	44 D	"	15,605	789,790	1900	
"	46 B	9-23-37	8,520	899,820	1650	
"	48 H	"	6,140	584,150	1775	
"	50 F	10-23-37	18,190	681,255	1750	
"	52 H	"	4,590	453,005	1700	
"	53 J	"	9,430	321,050	1900	
"	55 L	"	8,820	666,620	1800	
"	57 J	9-23-37	6,105	695,872	1825	
"	59 P	"	15,020	109,390	1125	
"	61 F	4-23-37	9,665	495,490	1970	
TOTAL	29		284,590	22,313,040		
SKEELLY OIL COMPANY						
Skelly Penrose "B" Unit	1 B	32-22-37	1,535	407,879	1900	
"	3 D	"	9,740	1,034,483	1800	
"	5 F	"	None	998,794		
"	8 J	"	10,145	507,530	1800	
"	10 L	"	2,370	352,531	2075	

LANGLEIE MATTHEX WATER INJECTION WELLS NOV. - CONT'D.

 PAGE # 61
 AVG. INJ.
 PRESS.

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	
SKELLY OIL CO. CONT'D.					
Skelly Penrose "B" Unit	12 P	31-22-37	4,540	793,050	2000
"	14 N	32-22-37	9,765	845,550	1900
"	16 P	"	10,820	880,695	1800
"	17 D	4-23-37	1,320	719,431	2090
"	19 B	"	9,505	369,580	2000
"	21 D	"	8,760	535,900	1800
"	25 H	6-23-37	12,325	1,025,255	1800
"	27 F	5-23-37	11,000	1,104,959	"
"	29 H	"	2,555	748,890	2075
"	32 J	"	6,084	500,129	2100
"	34 L	"	7,587	520,957	1900
"	36 P	6-23-37	11,768	1,254,031	1600
"	38 N	5-23-37	8,843	1,223,043	1500
"	40 P	5-23-37	9,154	1,009,794	1500
"	42 D	9-23-37	8,612	830,047	1200
"	45 D	7-23-37	11,145	617,080	1600
"	50 H	9-23-37	S.I.	1,127,768	
"	52 F	"	5,473	770,892	1900
"	54 L	"	5,985	808,555	1700
"	59 P	8-23-37	7,979	89,390	1300
"	61 N	9-23-37	6,773	91,521	"
"	62 F	8-23-37	T.A.	835,736	
"	63 B	"	7,338	496,958	1300
TOTAL	28		191,121	20,500,428	
SKELLY OIL COMPANY					
E. L. Steeler	6 J	17-23-37	5,645	752,805	1500
"	7 H	"	2,065	2,065	1000
TOTAL	2		7,710	754,870	
TENNECO OIL COMPANY					
Ginsberg Federal	6 E	31-25-38	12,256	514,804	
TEXACO INC.					
J.F. Black	6 F	21-24-37	17,640	430,543	1900
"	7 C	"	19,889	684,121	"
TOTAL	2		37,529	1,114,664	
TEXACO INC.					
C. C. Fristoe "A" Fed.NCT/1	6 D	35-24-37	5,790	465,884	800
UNION TEXAS PETROLEUM CORPORATION					
Langlie Jal Unit	1 B	31-24-37	17,550	373,072	250
"	3 D	32-24-37	16,860	295,898	720
"	5 B	"	20,250	417,753	700
"	7 H	"	6,060	101,814	400
"	9 F	"	11,190	282,617	660
"	11 H	31-24-37	12,810	348,733	600

COMPANY LEASE	WELL UNIT	S.T.R.	BBLS. WATER INJ.	CUM. WATER INJ.	PAGE 7 84 AVG. INJ. PRESS.
LaRUE, C. E. & B. N. MUNCY, JR. CONT'D.					
Fed. Love	16-J K	4-18-32	450	484,979	2100
TOTAL	10		4,050	4,113,301	
<u>PENROSE SHELLY</u>					
ANADARKO PRODUCTION COMPANY					
R.E. Cole	3 M	16-22-37	5,451	183,981	1000
E. M. Walden	6 N	15-22-37	24,533	460,236	
TOTAL	2		29,984	644,217	
CONTINENTAL OIL COMPANY					
Elliott A-15	1 I	15-22-37	3,802	48,018	320
GULF OIL CORPORATION					
So. Penrose Shelly Ut. Pilot Area					
"	106 C	5-22-37	-0-	755,058	0
"	111 E	"	-0-	868,340	0
"	113 G	"	332	645,196	0
"	127 K	"	-0-	792,893	0
"	129 I	6-22-37	-0-	815,190	0
"	133 M	5-22-37	-0-	715,745	0
TOTAL	6		332	4,592,422	
<u>RED LAKE</u>					
ATLANTIC RICHFIELD COMPANY					
W. Red Lake Unit	2UZ D	7-18-27	None	76,199	0
"	2LZ D	"	3,012	260,958	739
"	4UZ F	"	None	100,734	0
"	4LZ F	"	693	349,473	875
"	11UZ O	"	None	49,240	0
"	11LZ O	"	1,819	290,990	939
"	13UZ A	"	None	61,222	0
"	13LZ A	"	6,145	404,423	1146
"	14UZ H	"	None	109,064	0
"	14LZ H	"	4,484	381,145	973
"	16UZ I	"	None	126,021	0
"	16LZ I	"	1,104	197,942	984
"	17 M	5-18-27	5,009	372,270	423
TOTAL	7		22,266	2,779,681	
B & D OIL COMPANY					
S. Red Lake Grayburg Unit	3 A	35-17-27	None	290,388	
"	6 F	"	"	225,481	
"	7 H	"	"	260,749	
"	8 E	36-17-27	"	469,356	

CASING & CEMENTING PROGRAMS
IN ALL WELLS WITHIN ONE MILE OF
AGUA DISPOSAL WELL NO. A-22

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

PAGE 1

Case No. 5844 Exhibit No. 9

OPERATOR	U	S	T	R	SURFACE	INTER.	REVISION	A F 20
							Hearing Date	T.D. P.B.D.
AMERADA HESS CORP.								
#1 Walden	K	15	22	37	13 1/2" @ 1700' w/200	8 5/8" @ 2250' w/100	5 1/2" @ 2870' w/600	7870'
#2 Walden	K	15	22	37	13 1/2" @ 191' w/200	8 5/8" @ 2175' w/1200	5 1/2" @ 6490' w/500	6470' 6384
#3 Walden	N	15	22	37	12 1/2" @ 177' w/200	8 5/8" @ 2253' w/1200	5 1/2" @ 2875' w/600	7875' 7445
#4 Walden	L	15	22	37	12 1/2" @ 178' w/200	8 5/8" @ 2251' w/1200	5 1/2" @ 2912' w/600	7917' 6488
#5 Walden	L	15	22	37	13 1/2" @ 173' w/200	8 5/8" @ 2745' w/1800	5 1/2" @ 6475' w/500	6495' 6292
#6 Walden	M	15	22	37	13 1/2" @ 173' w/200	8 5/8" @ 2762' w/1850	5 1/2" @ 6090' w/650	6040' 6408
#7 Walden	N	15	22	37	13 1/2" @ 134' w/175	8 5/8" @ 2251' w/1150	5 1/2" @ 6475' w/500	6475' 6470
#5 Wood	B	22	22	37	13 1/2" @ 173' w/200	8 5/8" @ 2747' w/1850	5 1/2" @ 8116' w/650	8116' 5985
#6 Wood	A	22	22	37	13 1/2" @ 133' w/150	8 5/8" @ 2157' w/1400	5 1/2" @ 7524' w/650	7524'
#7 Wood	A	22	22	37	13 1/2" @ 192' w/200	8 5/8" @ 2158' w/1150	5 1/2" @ 6440' w/500	6440'
#8 Wood	B	22	22	37	13 1/2" @ 167' w/200	8 5/8" @ 2753' w/1850	5 1/2" @ 6432' w/600	6455'
#9 Wood	G	22	22	37	13 1/2" @ 174' w/200	8 5/8" @ 2753' w/1850	5 1/2" @ 8025' w/650	8025'
#10 Wood	H	22	22	37	13 1/2" @ 168' w/200	8 5/8" @ 2756' w/1850	5 1/2" @ 7476' w/650	7670'
ANADARKO PROD CO.								
#1 Elliott-Fed.	G	15	22	37	13" @ 302' w/200		7" @ 3574' w/350	3717'
#2 Elliott-Fed.	G	15	22	37	8 5/8" @ 376' w/215		5 1/2" @ 4010' w/470	4010' 4001
#10 Hugh.	C	14	22	37	8 5/8" @ 315' w/150		5 1/2" @ 3990' w/340	3990' 3850
#11 Hugh.	F	14	22	37	8 5/8" @ 324' w/160		5 1/2" @ 3890' w/500	3890'
#1 LMPSU Tr. 1	M	14	22	37	10" @ 478' w/100	8 5/8" @ 1083' w/75	7" @ 3254' w/150	3800' 3620
#2 LMPSU Tr. 1	M	14	22	37	8 5/8" @ 345' w/250		4 1/2" @ 3740' w/430	3740'
#1 LMPSU Tr. 2	E	23	22	37	8 1/4" @ 1174' w/300		7" @ 3245' w/150	3700'
#2 LMPSU Tr. 2	D	23	22	37	8 1/4" @ 335' w/250		4 1/2" @ 3740' w/425	3740'
#1 LMPSU Tr. 3	H	22	22	37	12 1/2" @ 150' w/90	8 1/4" @ 1120' w/150	6 5/8" @ 3380' w/250	3685'
#2 LMPSU Tr. 3	G	22	22	37	12 1/2"	8 1/4"	7" @ 3383	3692'
#3 LMPSU Tr. 3	B	22	22	37	12 1/2"	8 1/4"	7" @ 3383	3686'
#4 LMPSU Tr. 3	D	22	22	37	12 1/2" @ 150' w/100	8 1/4" @ 1125' w/150	7" @ 3383 w/250	3686'

CASING & CEMENTING PROGRAMS
IN ALL WELLS WITHIN ONE MILE OF
AGUA DISPOSAL WELL N.P. A-22

PAGE 2

OPERATOR	U	S	T	R	SURFACE	INJECT.	PRODUCTION	T.D.	P.B.D.	
<u>ANADARKO (cont'd)</u>										
#1 LMPSU Tr. 4	L	22	22	37	8 1/2" E 1109 W/75	2 1/4" E 1064 W/75	7" C 3370 W/150	3680		
#2 LMPSU Tr. 4	K	22	22	37				3685		
#3 LMPSU Tr. 4	F	22	22	37	8 1/2" E 1150 W/275		7" C 3396 W/150	3680		
#4 LMPSU Tr. 4	E	22	22	37	8 1/2" C 330 W/250		5 1/2" E 3710 W/275	3710		
#1 LMPSU Tr. 6	A	21	22	37	15 1/2" E 175 W/175	2 1/4" C 1162 W/50	6 1/2" C 3370 W/150	3636		
#1 LMPSU Tr. 5A	D	22	22	37	16" E 198 W/160		7" C 3400 W/250	3712		
#1 LMPSU Tr. 7	H	21	22	37	15 1/2" E 105 W/175	15" E 237 W/100	24" E 115 W/100	100	6 1/2" C 3355 W/150	3610
#3 LMPSU Tr. 5B	M	22	22	37	13" C 295 W/100	6 1/2" E 3313 W/50	4 1/2" E 3654 W/100	3654		
#7 LMPSU Tr. 13C	B	27	22	37	16" C 132 W/100 SX		7" E 3410 W/250	3655		
#1 LMPSU Tr. 13A	M	22	22	37	13" C 273 W/240		7" C 3360 W/140	3590		
#1 LMPSU Tr. 13C	A	27	22	37	16" C 112 W/150		7" E 3440 W/250	3705		
#1 LMPSU Tr. 14	O	22	22	37	8 1/2" C 335 W/1325		5 1/2" C 3686 W/350	3700	3684	
#2 LMPSU Tr. 14	J	22	22	37	12 1/2" E 2500 W/100	8 1/4" E 1125 W/150	6 1/2" E 3385 W/150	3689		
#1 LMPSU Tr. 15	L	22	22	37	10 3/4" E 103 W/65	8 1/2" E 1123 W/150	7" C 3375 W/175	3684	3660	
#2 LMPSU Tr. 15	P	22	22	37	8 1/2" E 373 W/200		4 1/2" E 3708 W/375	3708	3701	
#1 LMPSU Tr. 16	M	23	22	37	13" C 295 W/250	8 1/2" E 1143 W/200	7" C 3380 W/160	6450	3734	5" liner 3100-3500
#1 LMPSU Tr. 17	D	26	22	37	8 1/2" E 363 W/200		4 1/2" C 3700 W/400	3700	3697	
#1 LMPSU Tr. 40	L	23	22	37	8 1/2" E 346 W/250		4 1/2" C 3730 W/450	3740		
#2 Walden	F	15	22	37	15 1/2" C 110 W/150	8" E 1113 W/250	7" C 3695 W/250	3720		
#3 Walden	L	15	22	37	15 1/2" E 112 W/160	8" E 1122 W/250	7" C 3585	3850		5 1/2" liner 3500-3600
#4 Walden										
#5 Walden	M	15	22	37	13 1/2" E 243 W/100	8 1/2" E 1158 W/150	7" C 3389 W/175	3855	5 1/2" liner 3500-3600	3500-3600
#6 Walden	N	15	22	37	12 1/2" E 243 W/100	8" C 1143 W/200	6 1/2" E 3550 W/250	3720	3700	
#7 Walden	L	15	22	37	8 1/2" E 314 W/200		5 1/2" C 3915 W/440	3915	3900	
#8 Walden	K	15	22	37	8 1/2" C 339 W/265		5 1/2" C 4102 W/500	4102		
#9 Walden	M	15	22	37	25 1/2" E 395 W/265		5 1/2" C 4008 W/500	4008		
#11 Walden	M	15	22	37	8 1/2" C 351 W/150		5 1/2" E 4600 W/315	4600	3900	
<u>ATLANTIC RICHFIELD Co.</u>										
#2 Ollie J. Boyd	D	23	22	37	15 1/2" C 124 W/200	8 1/4" C 1103 W/200	7" C 3455 W/100	6470	6250	5" E 6470 W/200
#3 Ollie J. Boyd	G	23	22	37	13 1/2" E 186 W/300	9 1/2" C 2187 W/1000 (collapse 2400)		3781		Pulled 400 9 1/2"
#4 Ollie J. Boyd	F	13	22	37	13 1/2" E 1105 W/1000	9 1/2" E 2582 W/1000	7" C 6418 W/350	6420	6323	

**CASING & CEMENTING PROGRAMS
IN ALL WELLS WITHIN ONE MILE OF
AGUA DISPOSAL WELL NO. A-22**

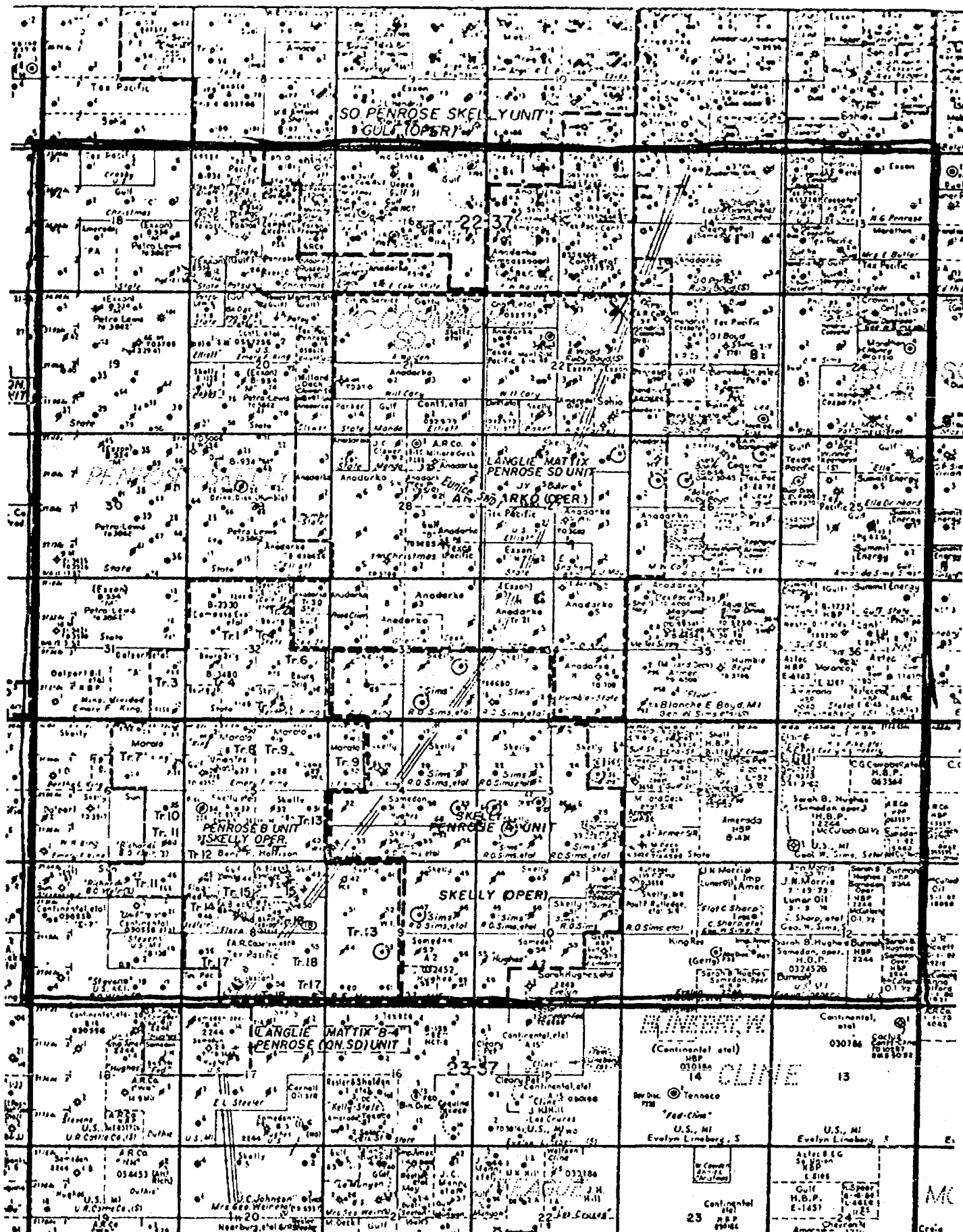
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OPERATOR	U	S	T	R	SURFACE	INTER.	PRODUCTION	T.D.	P.B.D.
CARTER FOUNDATION									
#3 Elliott	C	22	22	37	13 3/4" @ 2264 w/270	9 5/8" @ 2758 w/1150	7" @ 8052 w/1100	8110	6706
#4 Elliott	C	22	22	37	13 3/4" @ 2253 w/265	9 5/8" @ 2749 w/1150	7" @ 6514 w/800	6516	
#5 Elliott	D	22	22	37	13 3/4" @ 2254 w/230	9 5/8" @ 2753 w/11400	7" @ 6500 w/800	6502	6405
CLARY PETRO. CO.									
#7 Parks	K	14	22	37	8 5/8" @ 1061 w/600		5 1/2" @ 6472 w/1200	6472	
#8 Parks	J	14	22	37	8 5/8" @ 1093 w/500		5 1/2" @ 6500 w/1200	6500	
#9 Parks	N	14	22	37	8 5/8" @ 1107 w/450		5 1/2" @ 6470 w/1200	6470	
CONTINENTAL OIL CO.									
#1 Elliott A-15	P	15	22	37					
#2 Elliott A-15	O	15	22	37					
#3 Elliott A-15	O	15	22	37	10 3/4" @ 234 w/200	7 5/8" @ 2754 w/500	5 1/2" @ 7212 w/400	7213	
#4 Elliott A-15	O	15	22	27				6530	
#6 Elliott A-15	P	15	22	37	13 3/4" @ 225 w/225	9 5/8" @ 2705 w/500	7" @ 6529 w/900	6530	
#1 Elliott B-15	G	15	22	37	9 5/8" @ 1174 w/425		7" @ 6390 w/100	7353	6341
#2 Elliott B-15	P	15	22	37					
#3 Elliott B-15	I	15	22	37	13 3/4" @ 222 w/150	9 5/8" @ 2689 w/500	7" @ 6550 w/1000	6556	6350
EXXON CO. U.S.A.									
#2 Ferrel	I	22	22	37	10 3/4" @ 322 w/275	7 5/8" @ 2780 w/1500	5 1/2" @ 7283 w/765	7940	5740
#3 Ferrel	I	22	22	37	10 3/4" @ 331 w/150	7 5/8" @ 2830 w/1600	5 1/2" @ 7254 w/830	8190	
#98 Paddock Unit	H	15	22	37	13 3/4" @ 114 w/100	8 5/8" @ 2776 w/1300	5 1/2" @ 6529 w/300		
GULF ENERGY & MINERALS									
#2 Boyd	O	23	22	37	13 3/4" @ 318 w/300	9 5/8" @ 2879 w/1300	7" @ 6335 w/700	6440	
#3 Boyd	J	23	22	37	13 3/4" @ 307 w/300	9 5/8" @ 2873 w/1300	7" @ 6340 w/700	6420	6300
#1 Cyle "A"	P	16	22	37	13 3/4" @ 312 w/740	8 5/8" @ 1131 w/600	7" @ 3301 w/125	3701	3689
#5 Hugh	F	14	22	37	13 3/4" @ 301 w/300	9 5/8" @ 2863 w/1300	7" @ 6390 w/700	6478	6390
#8 Hugh	E	14	22	37	8 5/8" @ 126 w/510		5 1/2" @ 6549 w/1670	6550	6519

CASING & CEMENTING PROGRAMS
IN ALL WELLS WITHIN ONE MILE OF
HIVA DISPOSAL WELL NO. A-22

OPERATOR	U	S	T	R	SURFACE	INTER.	PRODUCTION	T.D.	P.B.D.
<u>HENDRIX</u>									
#1 Cassatet "F"	C	23	22	37	2 3/4" @ 1134 w/450		5 1/2" @ 7524 w/635	7324	6925
#3 Cassatet "F"	D	23	22	37	2 3/4" @ 1142 w/450		5 1/2" @ 7261 w/600	7267	
#4 Cassatet "F"	E	23	22	37	2 3/4" @ 1145 w/450		5 1/2" @ 7274 w/600	7282	7260
#5 Cassatet "F"	E	23	22	37	2 3/4" @ 1121 w/450		5 1/2" @ 7422 w/600	7428	
#1 Karcles	L	23	22	37	2 3/4" @ 1110 w/450		5 1/2" @ 7520 w/600	7709	7590
<u>PENROSE</u>									
#2 Ferrel	P	22	22	37	10 @ 158 w/150	8 3/4" @ 1172 w/600	7 @ 3375 w/150	3757	3614
<u>SAMEDAN</u>									
#1 Boyd	J	23	22	37	10 3/4" @ 249 w/150	7 1/2" @ 3476 w/600	5 1/2" @ 6217 w/225	6455	
#2 Boyd	J	13	22	37	9 5/8" @ 1160 w/450		4 1/2" @ 7243 w/600	7243	6611
#2 Parks	M	14	22	37	13 3/4" @ 296 w/150	9 1/2" @ 365 w/150	7 @ 782 w/150	7324	
#4 Parks	D	14	22	37	13 3/4" @ 299 w/300	9 1/2" @ 2837 w/500	7 @ 643 w/150	6455	6255
<u>SKELLY</u>									
#10 Baker	A	27	22	37	2 3/4" @ 270 w/1400		5 1/2" @ 6423 w/225	6458	6420
#9 Baker	N	22	22	37	13 3/4" @ 200 w/200	2 3/4" @ 2740 w/1000	5 1/2" @ 6450 w/450	7362	6438
#11 Baker	B	27	22	37	2 3/4" @ 270 w/1400		5 1/2" @ 6429 w/225	6452	6429
<u>SOHIO</u>									
#2 Elliott B-15-2	H	15	22	37	1 5/8" @ 352 w/200		4 1/2" @ 3815 w/450	3815	3813
#3 Walden "A"	F	15	22	37	13 3/4" @ 185 w/150	2 3/4" @ 2832 w/1400	5 1/2" @ 7365 w/450	7568	
<u>STREET</u>									
#1 Ferrel	O	22	22	37	13 @ 173 w/180	8 3/4" @ 1152 w/325	7 @ 3367 w/125	3705	

OPERATOR	U	S	T	R	SURFACE	INTER.	PRODUCTION	T.D.	P.B.D.
TEXAS PACIFIC OIL CO.									
#1 Boyd	G	23	22	37	13 3/4 E 287 W / 275	9 1/2 E 213 E / 1200	5 1/2 E 6533 W / 400	6419	
#2 Boyd	H	23	22	37	10 3/4 E 265 W / 1250	8 1/2 E 265 W / 1000	5 1/2 E 5420 W / 750	5540	
#2-Y Boyd	H	23	22	37	13 1/2 E 1097 W / 1200	8 1/2 E 1108 W / 450	5 1/2 E 6324 W / 400	6417	6351
#4 Boyd	B	23	22	37	13 1/2 E 281 W / 350	9 1/2 E 546 W / 1200	5 1/2 E 3615 W / 500	3990	
#5 Boyd	B	23	22	37	13 1/2 E 314 W / 300	8 1/2 E 2419 W / 800	5 1/2 E 6377 W / 500	6448	
#4 Will Cary	C	22	22	37	8 1/8 E 1126 W / 300	7 E 340 W / 1200	5 1/2 E 7226 W / 500	7479	
#5 Will Cary	F	22	22	37	10 3/4 E 177 W / 125	7 1/2 E 2763 E / 150	5 1/2 E 8070 W / 200	8086	6434
#6 Will Cary	K	22	22	37	10 3/4 E 219 W / 135	7 1/2 E 2761 W / 150	5 1/2 E 7093 W / 500	7130	
#7 Will Cary	F	22	22	37	10 3/4 E 192 W / 135	7 1/2 E 2761 W / 150	5 1/2 E 6414 W / 350	6467	5950
#8 Will Cary	L	22	22	37	10 3/4 E 192 W / 135	7 1/2 E 2761 W / 150	5 1/2 E 7135 W / 25	7162	
#9 Will Cary	D	22	22	37	8 5/8 E 1140 W / 65		4 1/2 E 7335 W / 150	7303	7260
#1 Elliott "A-15"	J	15	22	37	10 3/4 E 115 W / 150	7 1/2 E 2801 W / 1450	5 1/2 E 7603 W / 395	7690	3960
#2 Elliott "A-15"	J	15	22	37	10 3/4 E 177 W / 135	7 1/2 E 2777 W / 150	5 1/2 E 6417 W / 450	6470	
WEK DRILLING									
#1 Boyd	N	23	22	37	8 5/8 E 1120 W / 350		5 1/2 E 6434 W / 250	6434	6430
WOLFSON	I	23	22	37	10 3/4 E 147 W / 65	8 1/2 E 1119 W / 150	7 E 3367 W / 125	6430	5 E 6434 W / 200



LEA COUNTY, NEW MEXICO

T-22-S R-37-E & T-23-S R-37-E
NOVEMBER 19, 1974

EXHIBIT "A"
CASE NO. 5377

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

Agua EXHIBIT NO. 10
CASE NO. 5644

Submitted by
Hearing Date 3/10/76

Case No. 5644
Submitted by [Signature]
Hearing Date 3/10/76

Gulf Energy and Minerals Company - U. S.

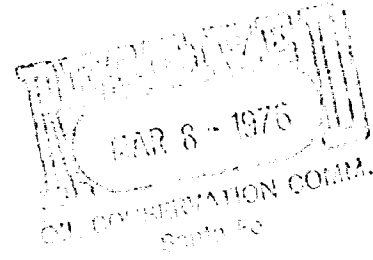
PRODUCTION DEPARTMENT
MIDLAND DISTRICT

P. O. Drawer 1150
Midland, Texas 79701

B. L. Choate
DISTRICT PRODUCTION MANAGER
R. F. Ward, Jr.
DISTRICT OPERATIONS MANAGER
C. E. Fields
DISTRICT SERVICES MANAGER
A. J. Evans, Jr.
DISTRICT ENVIRONMENTAL, SAFETY,
AND JOINT OPERATIONS MANAGER
J. C. Howard
DISTRICT EMPLOYEE RELATIONS MANAGER

4 March 1976

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



Attention: Mr. Joe D. Ramey
Secretary-Director

Re: Case 5644 Commission Hearing Application
of Agua, Inc. for Amendment of Order No.
R-5137, Lea County, New Mexico

Gentlemen:

By Oil Conservation Commission letter dated August 22, 1975 Agua Incorporated was ordered to shut-in their Blinbry-Drinkard SWD System Well No. 35-H located in Unit H, Section 35, T-22S, R-37E, Lea County, New Mexico, by September 26, 1975. It was the opinion of the Commission that pressure on the surface casing constituted a hazard to fresh water in the area.

In order to handle water normally disposed by Well No. 35-H, Agua, Inc. laid a temporary line from Well No. 35-H to their disposal well No. 2-C located in Unit C, Section 2, T-22S, R-37E. Injection into Well No. 35-H was terminated on September 19, 1975, in compliance with the Commission's directive.

Under Order R-4495 dated October 7, 1975 the Commission approved Agua's request to add perforations in their No. 2-C disposal well in the San Andres formation. The approval was conditional for injection into the San Andres perforations for a period of four months. This condition was further extended for an additional 90 days.

By Order No. R-5137 the Commission authorized the drilling of Agua, Inc. disposal Well No. A-22 located 817 feet from the North Line and 965 feet from the East Line of Section 22, T-22S, R-37E, Lea County, New Mexico. This order restricted the well-head pressure on the injection well to no more than one hundred psi provided, however, the Secretary Director of the Commission shall have the authority to increase the pressure limit.



A DIVISION OF GULF OIL CORPORATION

Oil Conservation Commission
4 March 1976
Page 2

Well No. A-22 has been drilled and completed through open hole interval 3865'-4965' with 7" casing set at 3865' and cemented to the surface of the ground. Injectivity tests revealed that adequate disposal capacity could not be attained at pressure less than 100 psi surface pressure. Agua has petitioned the Commission to amend Order No. R-5137 to allow surface injection pressures up to 1200 psi.

[A review of the data published in the Monthly Statistical Report of the New Mexico Oil and Gas Engineering Committee reveals that salt water disposal wells in Township 22 South, Range 37 East are operating at wellhead injection pressures as high as 1200 psi. This review also revealed that waterflood injection wells in Township 22 South, Range 37 East are operating at wellhead injection pressures as high as 2090 psi.

[In order not to jeopardize the approximately 10,000 barrels of oil per day produced from the 430 wells tied into Aqua's Blinbry-Drinkard system, Gulf Oil Corporation respectfully requests that the Commission allow the disposal of water into Aqua's Well No. A-22 at wellhead injection pressures comparable to those pressures allowed for other disposal and injection wells in Township 22 South, Range 37 East.

Yours very truly,

R. F. Ward, Jr.
R. F. WARD, JR.

CFK:jm

cc: J. T. Sexton
Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico 88240

Aqua, Inc.
P. O. Box 1978
Hobbs, New Mexico 88240



L. P. Thompson
Division Manager
Production Department
Hobbs Division
Western Hemisphere Petroleum Division

Continental Oil Company
P.O. Box 460
1001 North Turner
Hobbs, New Mexico 88240
(505) 393-4141

March 8, 1976

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

Attention Mr. Joe D. Ramey

Gentlemen:

Commission Hearing March 10, 1976, Application of Agua Inc.

Continental Oil Company is one of the owners of the Blinebry Drinkard Saltwater Disposal System operated by Agua, Inc. and is also a working interest owner in Anadarko's Langlie Mattix Penrose Sand Unit and in Skelly's Skelly Penrose "B" Unit as well as the operator of various properties in the 36-section area which was the subject of Cases Nos. 5377 and 5403. Continental operates several properties which deliver substantial volumes of produced water into the Blinebry Drinkard Saltwater Disposal System. We are aware of the pressure limitation placed on Agua in their drilling of a new disposal well and have been concerned about the apparent inconsistency of this limitation in comparison with the lack of limitation or less stringent limitation placed on other injectors of water in the area.

We should like to point out that the production of crude oil should be encouraged in New Mexico in order to supply the tremendous demand in the United States. Each barrel of oil we do not produce in this country must be imported. It is a fact of life that water must be produced with a large part of our domestic oil production. The Commission has directed that we must dispose of produced water underground and we concur in this directive. We do not believe that it serves the best interest of the State of New Mexico or the United States to force operators of leases to shut-in those leases because the water cannot be disposed off within the pressure limitation placed by the Commission. We do not believe that it serves the best interest of the industry for a new disposal well to be restricted to a less pressure for injection of water than is used, with Commission's apparent approval by other disposal systems in the same area.

We believe that if the Commission is unwilling to relax the pressure limitation on the new disposal well that it should give serious consideration to requiring the waterflood project in the immediate area to substitute this produced water in place of outside water which is piped into the area for injection. The parties to such a water exchange should be subject to the same compulsion or lack of compulsion in arriving at mutuality agreeable terms for such exchange.

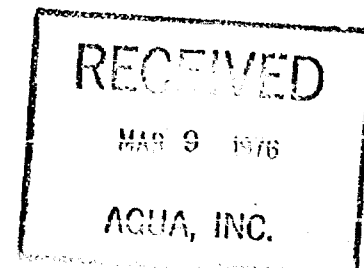
NMOCC
Page 2
March 8, 1976

Continental Oil Company respectfully urges the Commission to take appropriate action to permit the produced water now handled by the Blinebry Drinkard SWD System to be disposed of without unnecessary hardship to any of the parties here involved.

Yours very truly,



VTL:reh
CC:
CFE: FOH: JWK



MGMABQA ABQ
1-029918A068 03/08/76
TLX UNOTEX PET HOU
4205 HOUSTON TX 8 MARCH 1976

western union Mailgram®



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION
P O BOX 2088
SANTA FE NM 87501

ATTN: MR. JOE D. RAMEY
SECRETARY-DIRECTOR
RE: CASE 5644; APPLICATION OF AGUA, INC. FOR THE AMENDMENTS
OF ORDER NO. R-5137, LEA COUNTY, NEW MEXICO.

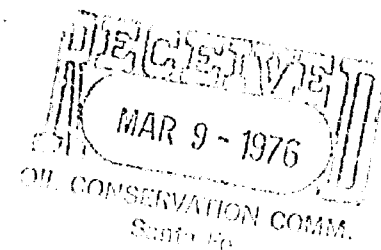
GENTLEMEN:

THIS LETTER IS WRITTEN TO REQUEST YOUR FAVORABLE ACTION ON THE
ABOVE APPLICATION OF AGUA, INC. THE SURFACE INJECTION PRESSURE
LIMITATION OF 100 PSI CONTAINED IN ORDER NO. R-5137 IS
UNNECESSARILY RESTRICTIVE AND COULD LOGICALLY BE INCREASED TO
1200 PSI UNDER THE CONDITIONS RECITED IN AGUA'S LETTER TO YOU
DATED FEBRUARY 16, 1976.

UNION TEXAS PETROLEUM
BY W.L- HIXON

1742 EST

MGMABQA ABQ





PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79761
PHILLIPS BUILDING

NATURAL RESOURCES GROUP
Exploration and Production

March 3, 1976

Agua, Inc. Operated Blinebry-
Drinkard SWD System, Lea County,
New Mexico—Order No. R-5137

File: W2-Wo-45-76

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

Attention: Joe D. Ramey
Secretary-Director

Gentlemen:

Phillips is a member of the Agua, Inc. operated Blinebry-Drinkard Salt Water Disposal System. Water produced on our Sims and New Mex "D" Leases is disposed of through this system.

Phillips supports Agua, Inc. in its request for approval to inject waste waters into the Blinebry-Drinkard Salt Water Disposal Well No. A-22 at a surface injection pressure not to exceed 1200 psi.

This well was drilled and completed in compliance with the authority granted in Order No. R-5137. After acid treatment it is apparent that the well will not accept satisfactory quantities of water at surface wellhead pressure of not more than one-hundred psi. The well is completed so as to restrict fluid injection into only the San Andres zone and is essential to the continued operation of the Blinebry-Drinkard SWD System.

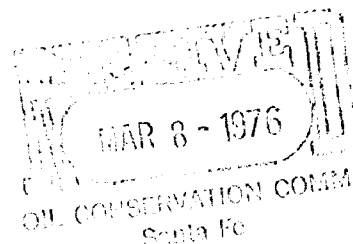
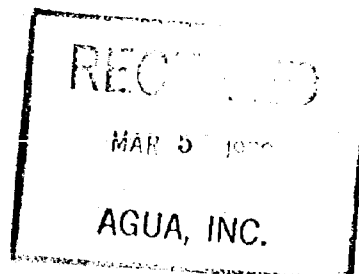
Your approval of this amendment of Order No. R-5137 is respectfully requested.

Very truly yours,

PHILLIPS PETROLEUM COMPANY

F. F. Lovering
F. F. Lovering
Manager, Southwestern Region

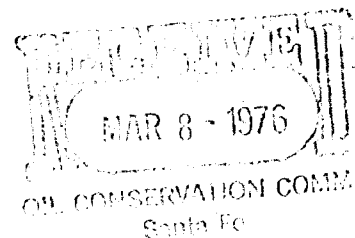
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March 3, 1976

Agua, Inc. Operated Minebry-
Drinkard S/D System, Lea County,
New Mexico—Order No. R-5137

File: W2-40-45-76



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

Attention: Joe D. Ramoy
Secretary-Director

Gentlemen:

Phillips is a member of the Agua, Inc. operated Minebry-Drinkard Salt Water Disposal System. Water produced on our Sims and New Mex "D" Leases is disposed of through this system.

Phillips supports Agua, Inc. in its request for approval to inject waste waters into the Minebry-Drinkard Salt Water Disposal Well No. A-22 at a surface injection pressure not to exceed 1200 psi.

This well was drilled and completed in compliance with the authority granted in Order No. R-5137. After acid treatment it is apparent that the well will not accept satisfactory quantities of water at surface wellhead pressure of not more than one-hundred psi. The well is completed so as to restrict fluid injection into only the San Andres zone and is essential to the continued operation of the Minebry-Drinkard S/D System.

Your approval of this amendment of Order No. R-5137 is respectfully requested.

Very truly yours,

PHILLIPS PETROLEUM COMPANY

F. F. Lovering
F. F. Lovering
Manager, Southwestern Region

LLF:gb



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87501

DIRECTOR
JOE D. RAMEY

LAND COMMISSIONER

PHIL R. LUCERO
August 3, 1976



STATE GEOLOGIST
EMERY C. ARNOLD

Mr. James Jennings
Jennings, Christy & Copple
Attorneys at Law
Post Office Box 1180
Roswell, New Mexico 88201

Re: CASE NO. v 5644
ORDER NO. R-5137-B

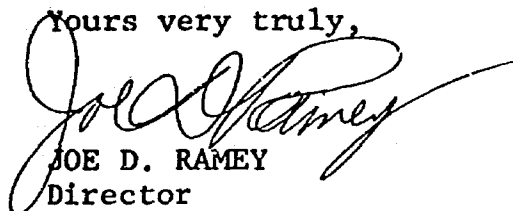
Applicant:

Agua, Inc.

Dear Sir:

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

Yours very truly,


JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other Tom Kellahin