CASE 5713: RESUME DISPOSAL, AGUA SWD NO. H-35, LEA COUNTY, NEW MEXICO

CASE NO.

5713

APPLICATION,

TRANSCRIPTS,

SMALL EXHIBITS,

ETC.

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

DIRECTOR
JOE D. RAMEY

LAND COMMISSIONER
PHIL R. LUCERO

STATE GEOLOGIST
EMERY C. ARNOLD

May 10, 1978

Re: CASE NO. 5713
ORDER NO. R-5730

Mr. James Jennings
Jennings, Christy & Copple
Attorneys at Law
Post Office Box 1180
Roswell, New Mexico 88201

Applicant:

OCC (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 x
Aztec OCC

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

CASE NO. 5713
Order No. R-5730

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION TO PERMIT AGUA, INC. AND ALL OTHER INTERESTED PARTIES TO APPEAR AND SHOW CAUSE WHY AGUA, INC., SHOULD BE AUTHORIZED TO RESUME SALT WATER DISPOSAL INTO THE SAN ANDRES FORMATION IN ITS SWD WELL NO. H-35 LOCATED IN UNIT H OF SECTION 35, TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 14, 1976, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 10th day of May, 1978, 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 the Agua, Inc. Salt Water Disposal Well No. H-35 located in Unit H of Section 35, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico, is located in an area where water flows have been encountered in formations above the formations utilized for disposal and injection.

(3) That after what appeared to be mechanical problems with said well, the Secretary-Director of the Commission ordered said well to be shut-in at 8 a.m., September 26, 1975.

(4) That subsequent tests indicate said well to be mechanically sound.

(5) That a tracer survey conducted on said well indicates disposed of water to be entering the proper disposal interval.

(6) That the plugged and abandoned well designated the Summit Energy Company Shell State Well No. 1, located in Unit D, Section 36, Township 22 South, Range 37 East, NMPM, is within one-half mile of said Well No. H-35.

(7) That the Summit Energy Company Shell State Well No. 1 may not be adequately plugged and could allow the migration of disposed water from the disposal interval to shallower formations or to fresh water aquifers if high pressure injection is permitted in said Well No. H-35.

(8) That injection should be allowed to resume in said Well No. H-35.

(9) That the injection pressure in said Well No. H-35 should be limited to 1000 psi.

IT IS THEREFORE ORDERED:

(1) That immediate resumption of injection into the San Andres formation is hereby authorized for the Agua, Inc. SWD Well No. H-35 located in Unit H of Section 35, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.

(2) That the injection well or system shall be equipped with a pressure limiting switch or other acceptable device which will limit the wellhead injection pressure to no more than 1000 psi.

(3) That the operator shall conduct bradenhead pressure surveys on said Well No. H-35 monthly and file the results with the Division Hobbs office.

(4) That upon proper showing that the Summit Energy Company Shell State Well No. 1 has been re-entered and properly plugged and abandoned, the Director of the Division may authorize increased injection pressure to a pressure slightly under formation fracture pressure.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

S E A L

fd/

AGUA, INC.
POST OFFICE BOX 1978
HOBBS, NEW MEXICO
88240
TELEPHONE: 505 393-6188

February 24, 1978

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

Re: Blinebry-Drinkard SWD Well
Nos. H-35 and A-22

Dear Mr. Ramey:

Pursuant to your letter request of January 23, 1978, we are enclosing the following information on all wells, within one mile of the Blinebry-Drinkard Salt Water Disposal Nos. H-35 and A-22, which penetrated the San Andres formation:

1. A tabulation showing the location of wells, hole sizes, casing sizes and depths, cement used on each casing string, and the cement tops.

2. A diagrammatic sketch of the plugged and abandoned wells showing the above information, casing recovered and depth and volume of plugs.

Further, we are enclosing analyses of waste waters entering the terminal storage tank and of waters backflowed from the open-hole interval San Andres in Disposal Well No. H-35. The back-flowed waters show a chloride count that is indicative of the San Andres formation; the System waters entering terminal storage are, also, most indicative of waters collected from multi-zone production batteries.

At the present time, collected waste waters enter terminal storage facilities of Disposal Well No. H-35 at the rate of 40-95 BPH or 1100 BWPD. Such waters are then being pumped

through a 6-mile "emergency" 6-inch PVC plastic line to Disposal Well No. C-2 for subsurface gravity disposal into the San Andres formation. The "emergency" 6" PVC plastic line between Disposal Well No. H-35 and Disposal Well No. C-2 was installed in September, 1975 and, being laid in the west borrow ditch of County Road No. C-17, the line is subject to leaks and is a discomfort to adjoining landowners and lessees. Then, too, AGUA has line-looping AFE's approved and awaiting the availability of the 6" PVC plastic line pipe.

The San Andres formation in the Eunice area is approximately 1,000' in gross thickness, lies approximately 1,400' below the base of the salt section and is a most acceptable reservoir for disposal purposes.

The Blinebry-Drinkard SWD System has experienced a 22.5 percent increase (849,703 bbls.) in water handled and disposed since the Arab Boycott in October, 1974. Also, the System has connected an additional 109 new wells, representing a 21.2 percent well increase, during the same time frame. It is reasonable to assume that the System will experience a continuing increase in both wells connected and water handled for disposal.

In conclusion, we urge you to approve injection of disposal water into our SWD H-35 because we believe this is in the best interest of the State of New Mexico. The Blinebry-Drinkard SWD System serves the most concentrated area of producing oil wells in the State, and has been the most active area of development especially since the Arab embargo.

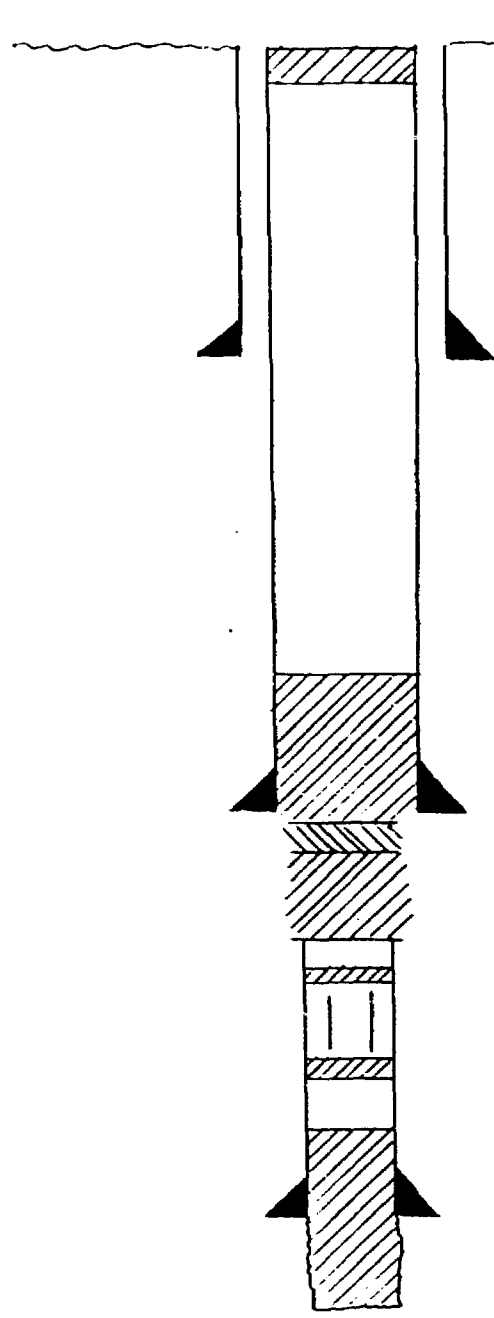
Yours very truly,

AGUA, INC.

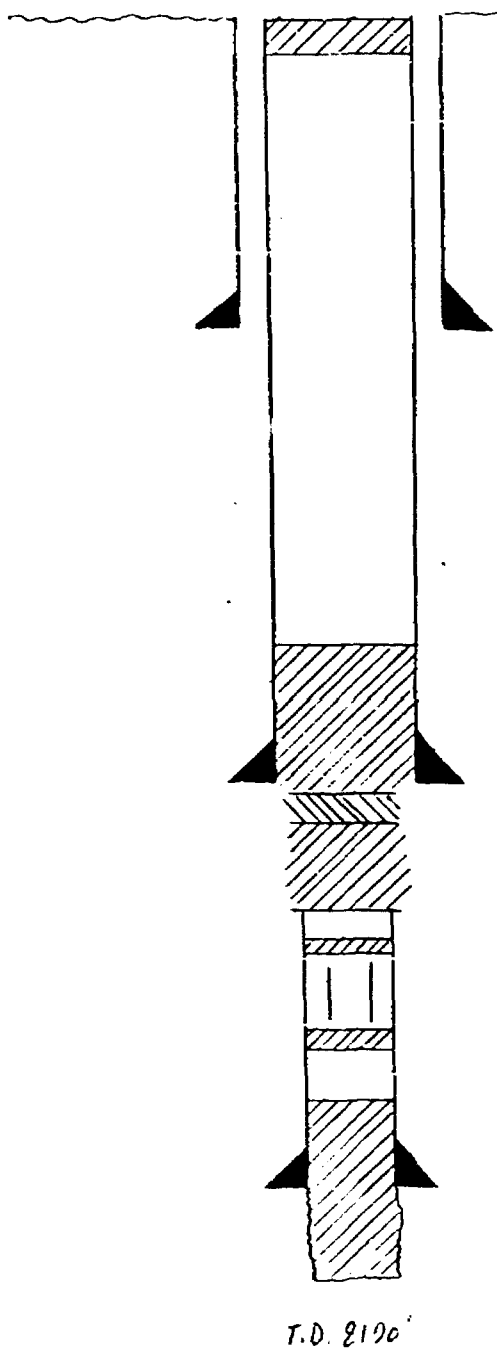
W. G. Abbott

W. G. Abbott
Manager

JVR/jo
Enclosures
cc: All Parties
Blinebry-Drinkard SWD System
w/o Enclosures



Humble Oil Co. – Ferrell #3
Unit J 1880' FSL & 2180' FEL 22-22-37
Lea County, New Mexico
Plugged and Abandoned 11/27/72

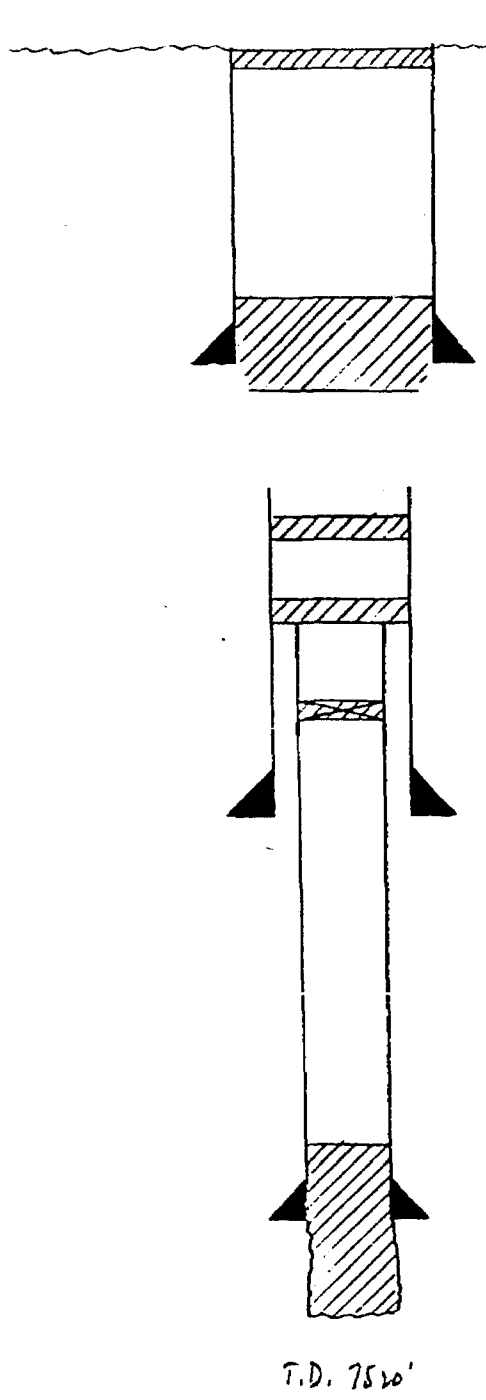


Humble Oil Co. – Ferrell #3

Unit J 1550' FSL & 2180' FEL 22-22-37

Lea County, New Mexico

Plugged and Abandoned 11/27/72



Spot 10' cmt. plug @ surface

13 3/8" csg. set @ 220' w/200 sx. cmt.
Spot 100' cmt. plug from 270-170'

Top 8 5/8" csg. shown to be @ 1340'
Spot 100' cmt. plug @ 1380'

Spot 100' cmt. plug on 8 1/2" csg. stub
Shot off 8 1/2" csg. @ 1701' and pulled

C.I.B.P. set @ 2294' w/100 sx cmt. cap

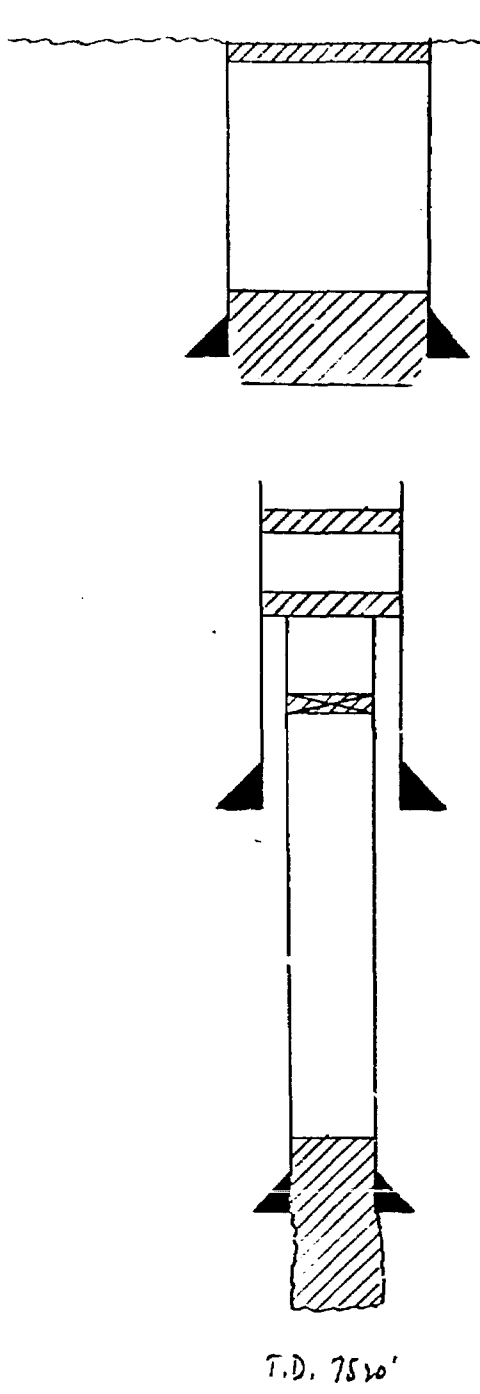
8 5/8" csg. set @ 2558' w/300 sx. cmt.

P.B.T.D. 6287'

5 1/2" csg. set @ 6500' w/ 400 sx. cmt.

T.D. 7520'

Campbell & Hedrick - Lee #1
Unit I 2310' FSL & 330' FEL 26-22-37
Lea County, New Mexico
Plugged and Abandoned 11/21/70



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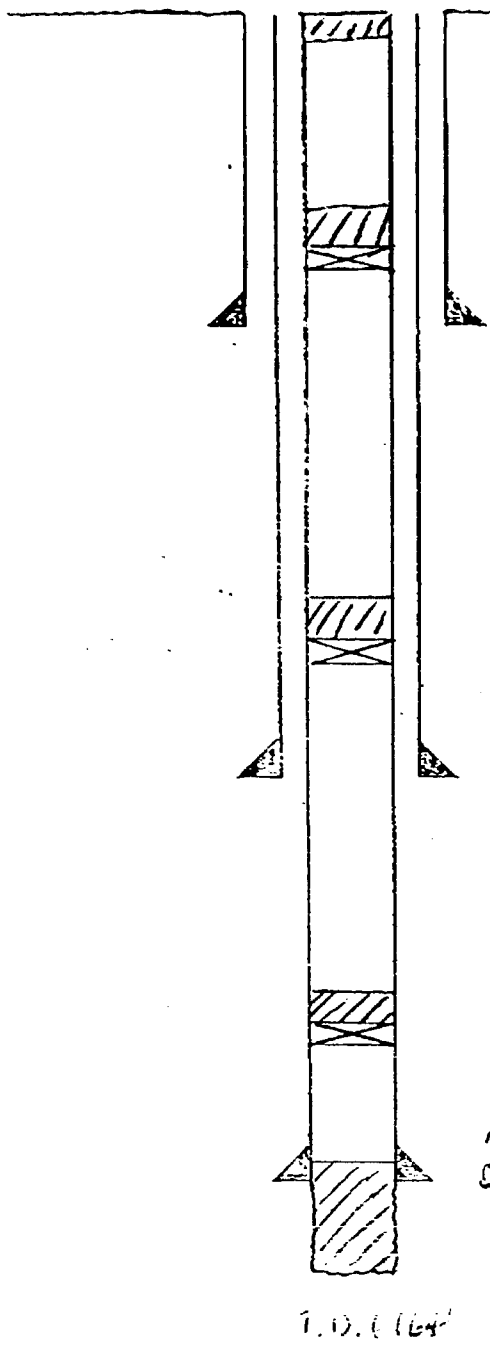
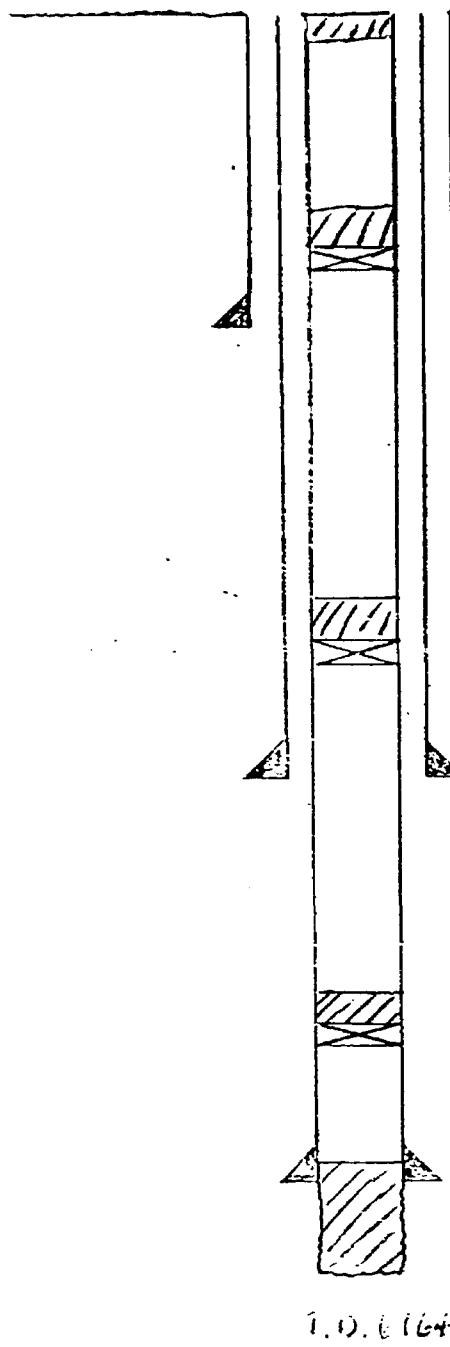
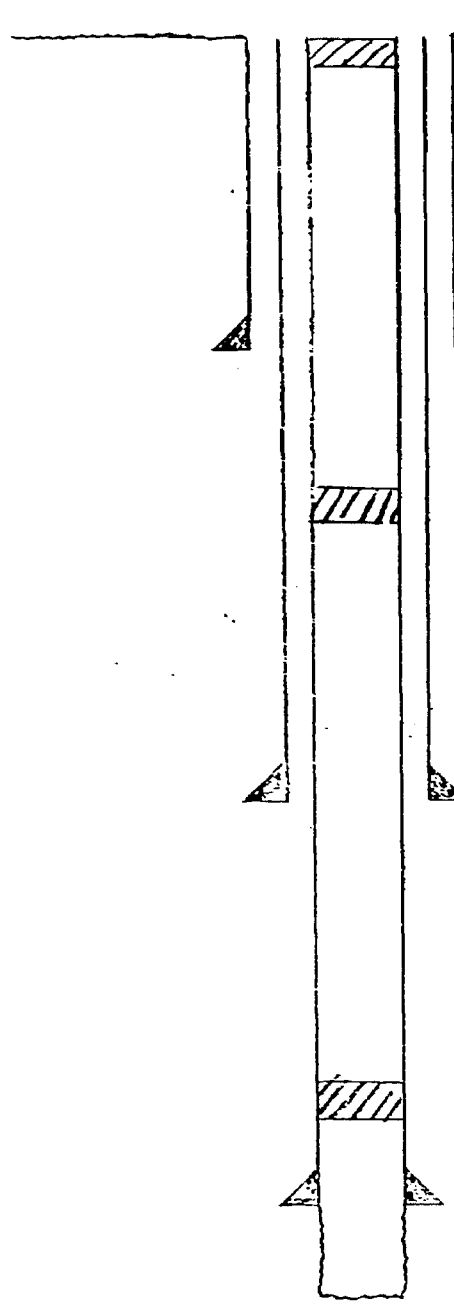


Texas Pacific Oil Co. - Sims #3
Unit K 1980' FSL 35-11-37
Lea County, New Mexico

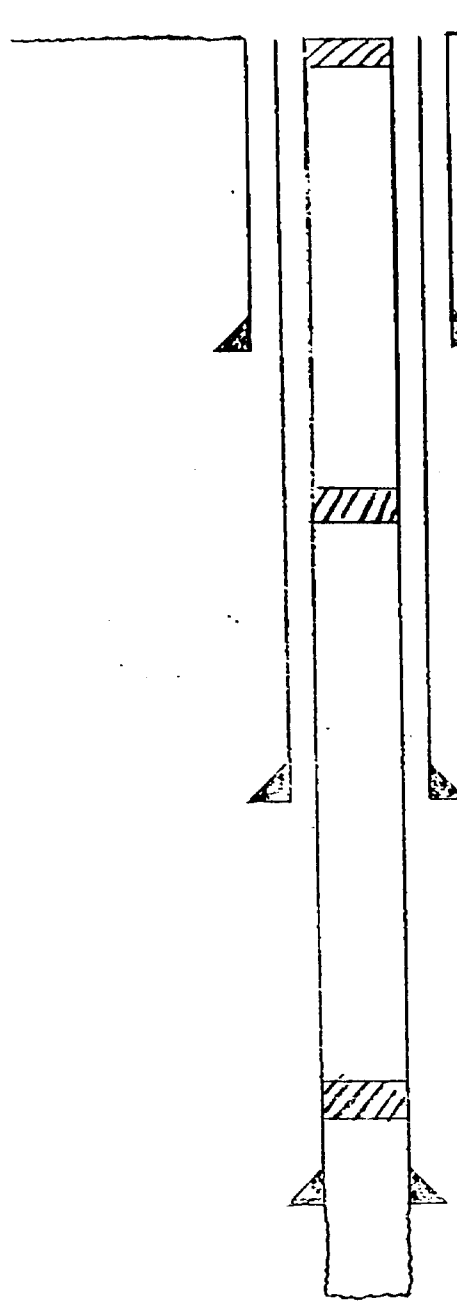


Texas Pacific Oil Co. - Sims #3
Unit K 1980' FSL & 1980' FWL 25-22-37
Lea County, New Mexico



Blair & Price - C & E Federal #1

Unit M 660' FSL & WL 1-23-37



Blair & Price - C & E Federal #1

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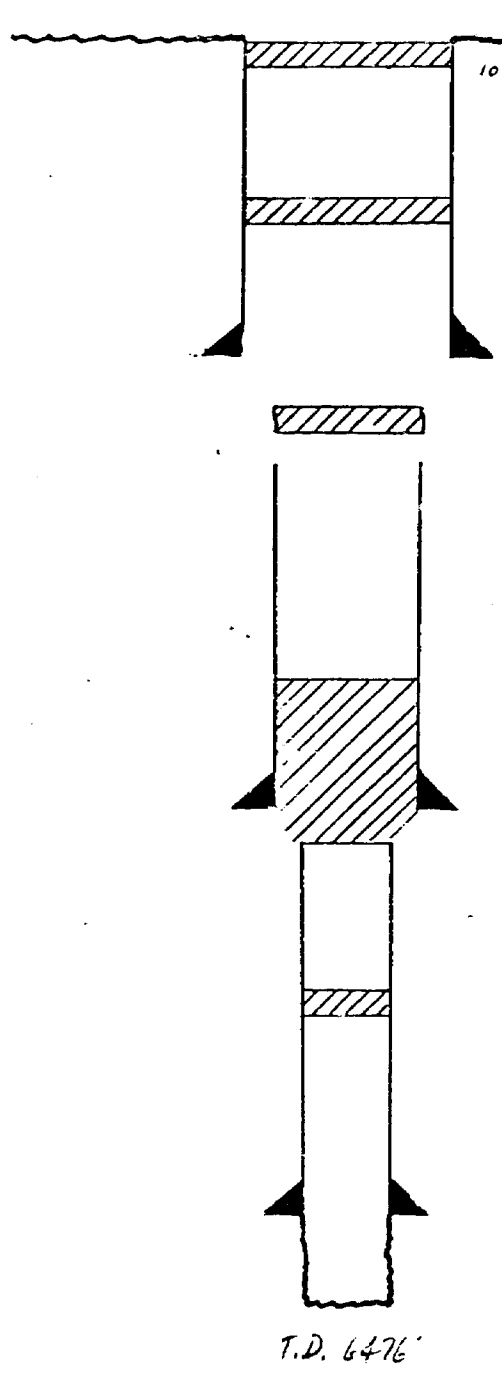
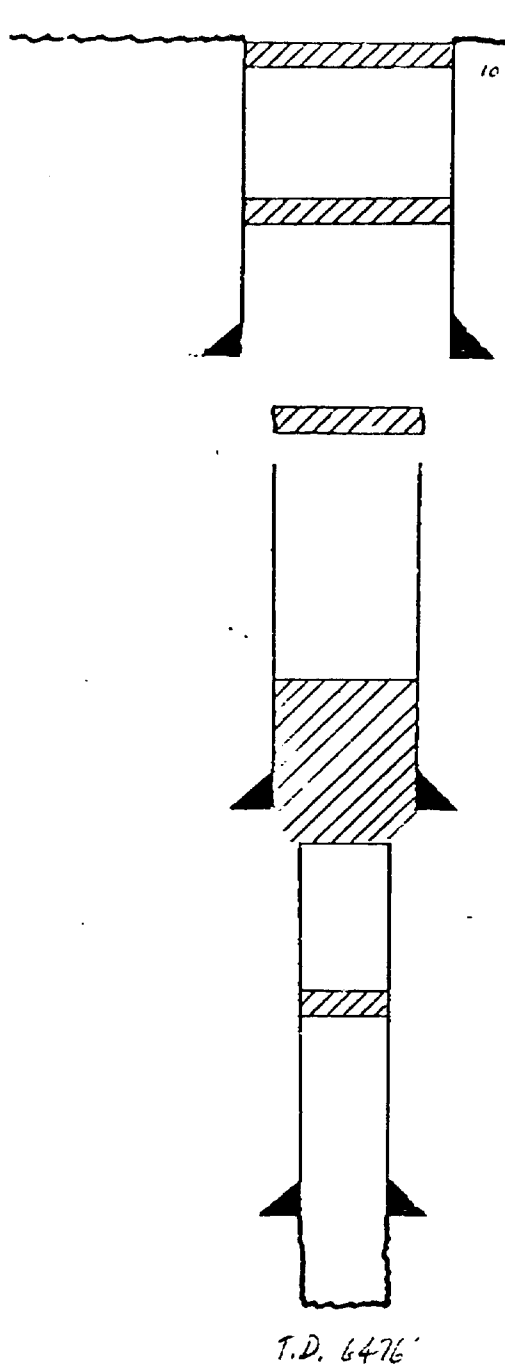


Exxon Co.-USA – Paddock Unit #98

Unit H 1980'FNL & 660'FEL 15-22-37

Lea County, New Mexico

Plugged & Abandoned 11/14/75

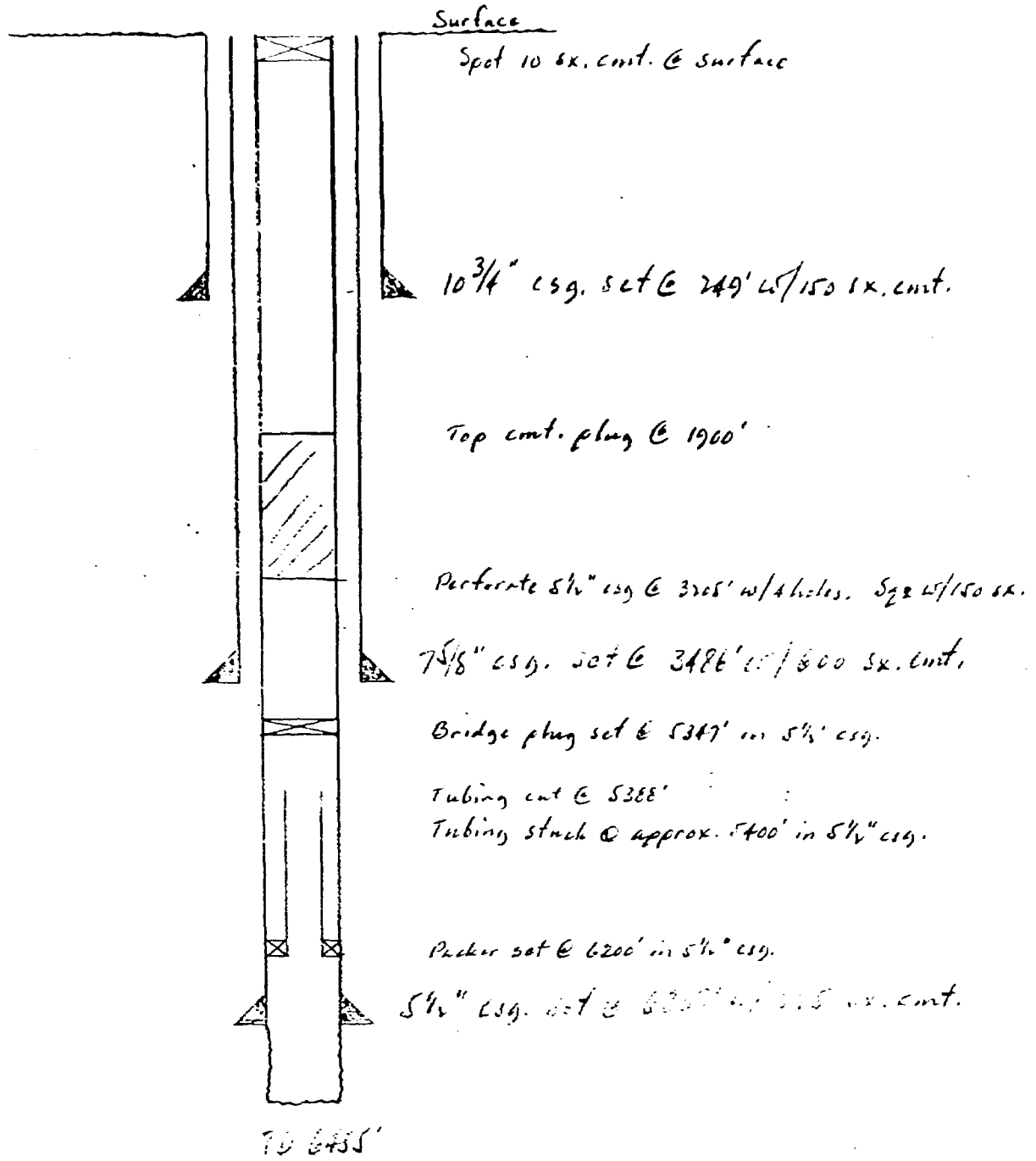


Exxon Co.-USA – Paddock Unit #93

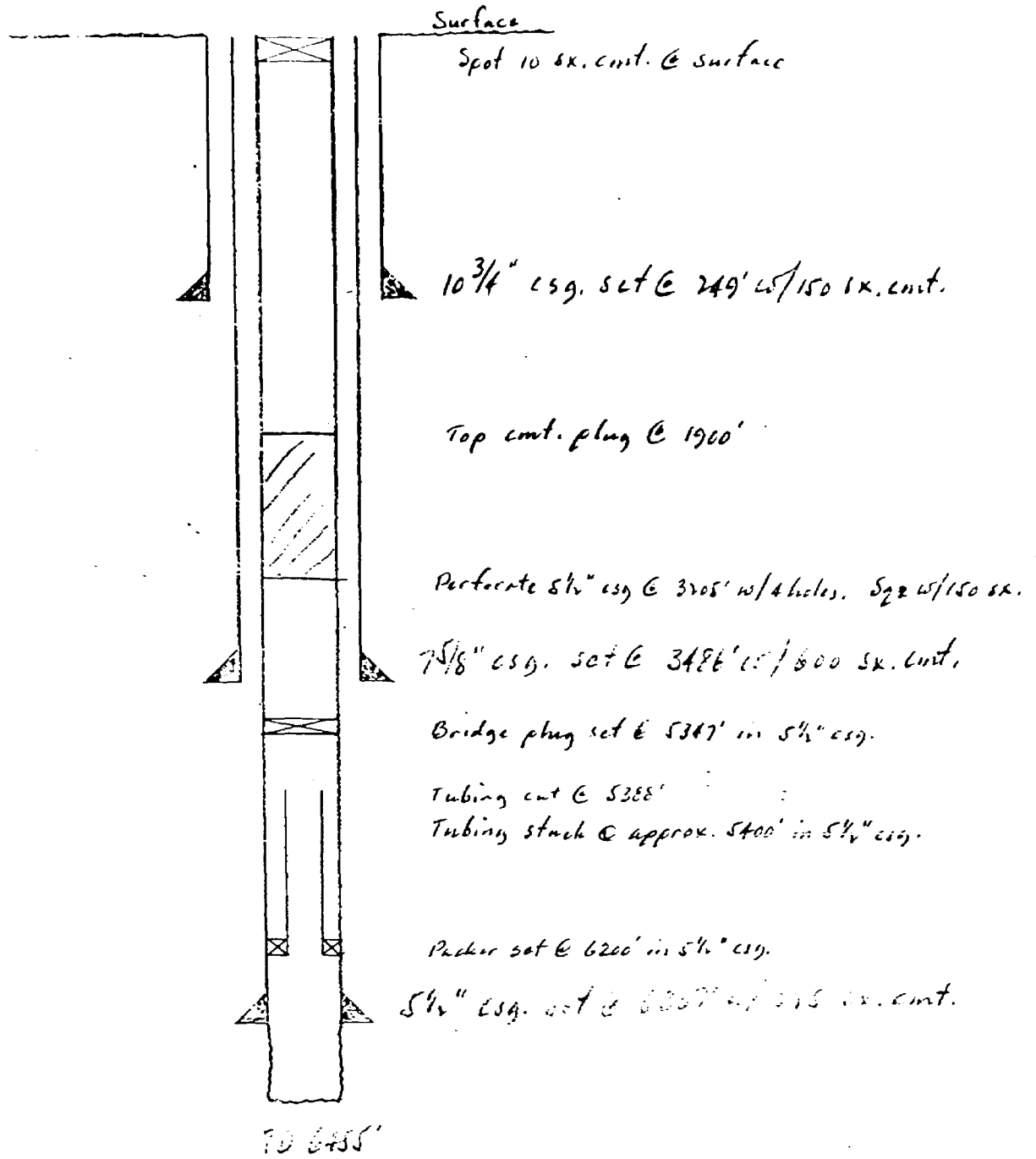
Unit H 1980'FNL & 660'FEL 15-22-37

Lea County, New Mexico

Plugged & Abandoned 11/14/75



Samedan Oil Corp. - Boyd #1
Unit J 1980' FSL & EL 23-22-37
Lea County, New Mexico



Samedan Oil Corp. – Boyd #1
Unit J 1980' FSEL 23-22-37
Lea County, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION
Hobbs, New Mexico

WATER ANALYSIS

Well Ownership: AGUA, INC. Well No. H-35

Land Status: ☐ State ☐ Federal ☐ Fee

Well Location: Unit H, Section 35, T 22 S - R 37 E

Type Well: WATER INJECTION Depth: ____ feet.

Well Use: SWD

Sample Number: #1 Date Taken: Aug. 20, 1975
BY: Nathan Clegg

Specific Conductance: _____ m/ɔ

Total dissolved Solids: _____ PPM.

Chlorides: 32,660 PPM.

Sulfates: _____ PPM.

Ortho-phosphates: ☐ V. low ☐ Low ☐ Med. ☐ High

Sulfides: ☐ None ☐ Low ☒ Med. ☐ High

_____ : _____

Date Analized: 8-21-75 By: John W. Runyan
N.M.O.C.C.

Remarks:

Sample taken from incoming line into storage tank at SWD station.

1 ml Sample = 9.2 silver nitrate x 3550.0 factor = 32,660 ppm

NEW MEXICO OIL CONSERVATION COMMISSION
Hobbs, New Mexico

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UNITED CHEMICAL CORPORATION
OF NEW MEXIC

601 N. LEECH P. O. BOX 1499
HOBBS, NEW MEXICO 88240
PHONE
(505) 393-7751

CHEMICAL RESIDUAL FORM - LAB COPY

COMPANY: Agua, Inc.
P. O. Box 1978
Hobbs, NM 88240
ATTENTION: W. G. Abbott

DATE: December 22, 1977

TYPE OF RESIDUAL: Chloride

LOCATION	PPM
B. D. SWD System Well H-35	30,000 Chloride
Backflow from tubing	

COMMENTS: Sample submitted 12-21-77

Elizabeth Wesley
Technician

EW/pv
cc: Jerry Golson
Ernest Underwood
Cy Foster

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Bad

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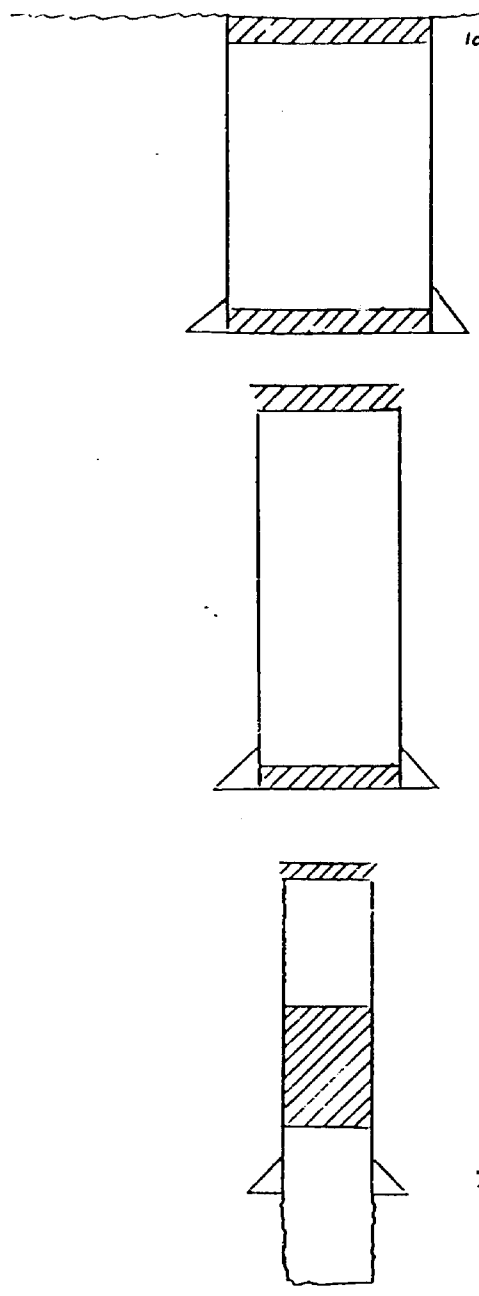
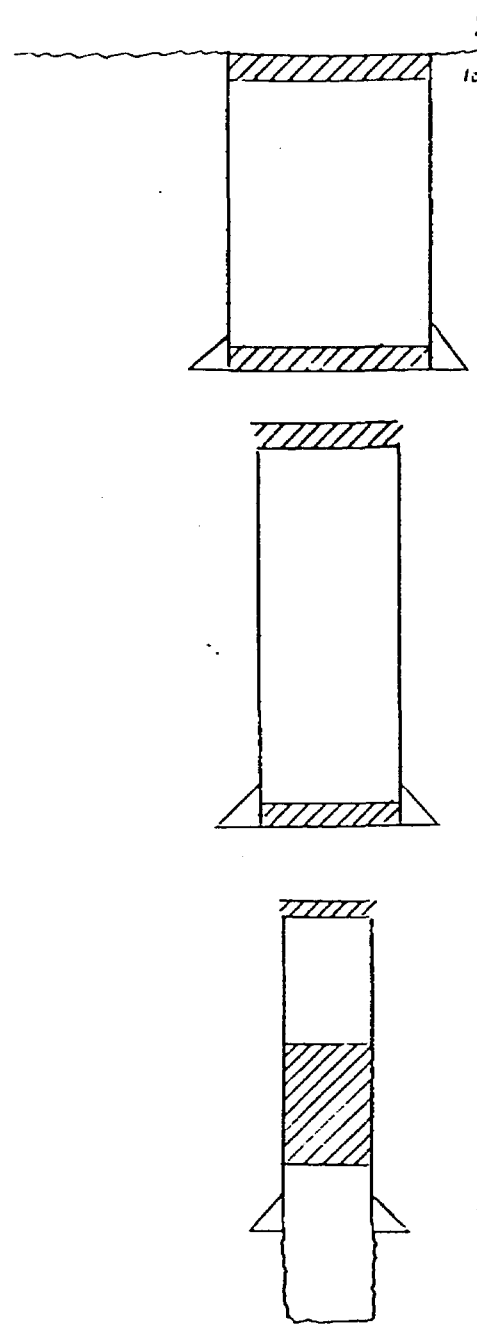


Summit Energy Co. - Shell State #1

Unit D, 660' FNL & 990' FWL 36-11-37

Lea County, New Mexico

Plugged & Abandoned 9/15/71



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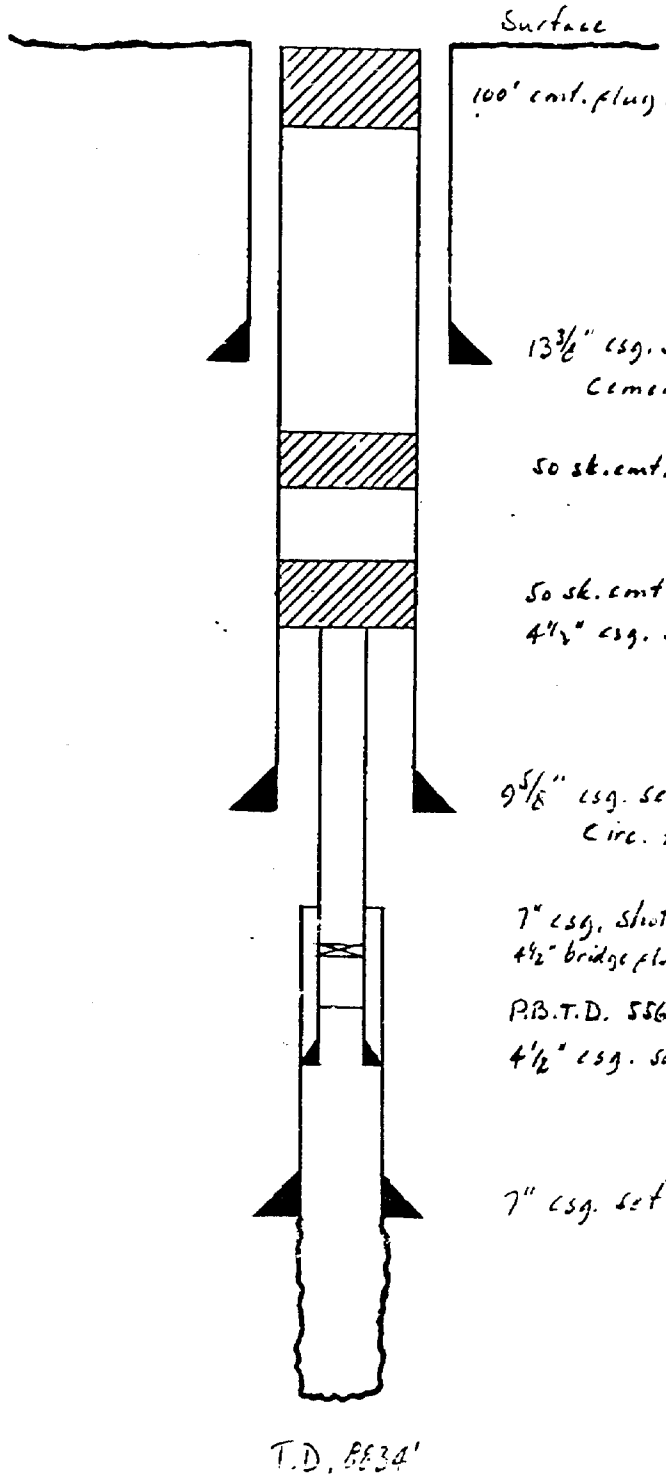
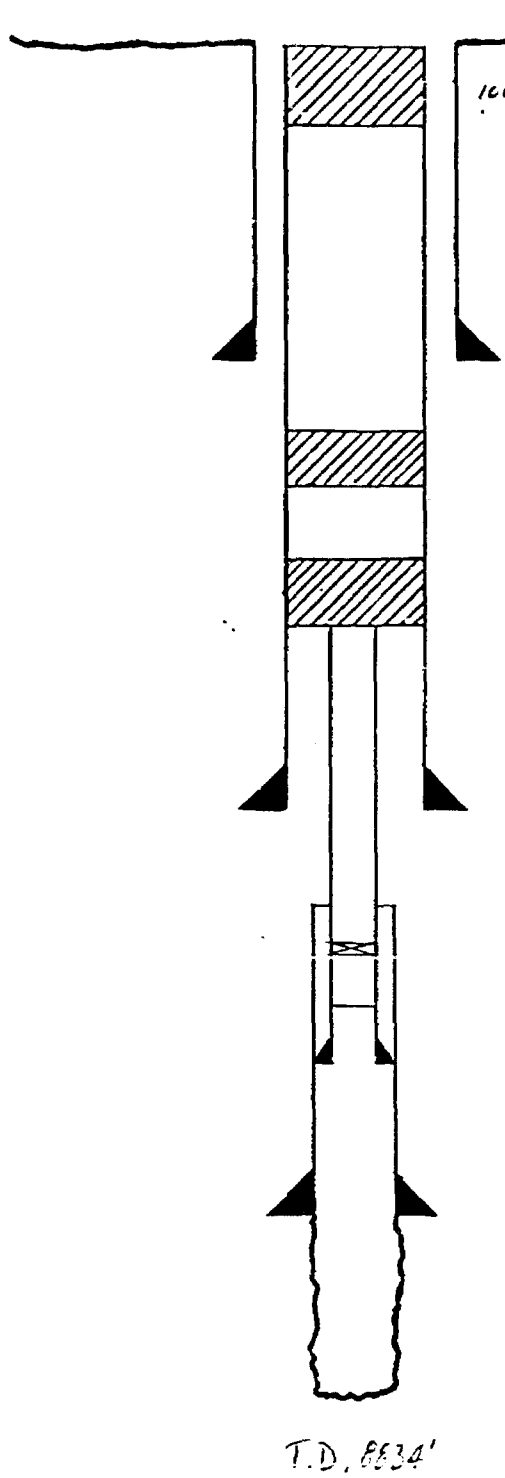


Check

Armer Oil Co.- May #1
Unit B 660' NL & 1980' FEL 35-22-37
Lea County, New Mexico
Plugged and Abandoned 11/1/24



Armer Oil Co.:- May #1
Unit B 660' NL & 1980' FEL 35-22-37
Lea County, New Mexico
Plugged and Abandoned 11/1/24

NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARING

SANTA FE, NEW MEXICO

Hearing Date JULY 14, 1976 TIME: 9:00 A.M.

NAME	REPRESENTING	LOCATION
J. E. Sperling	Hinkle, Sperling et al	Artesia
W. L. Jordan, Jr.	Exxon	Andrews, Tx.
W.C. Abbott	AGUA, Inc	Hobbs
James T. Jennings	Jennings Christy & Copple	Roswell
Jim Bennett	El Paso Natural Gas	El Paso
Harley Reavis	Exxon 713	Midland, Tx
Paul Eaton	Hinkle Bondurant et al	Roswell
Les Clements	N.M.O.C.C.	Hobbs
Tom Kellahin	Kellahin & Fox	Santa Fe
A.R. Kendrick	O C C	Santa Fe
Jim Gillham	U.S.G.S	Roswell
Carl Traywick	U.S.G.S	"
Nathan E. Clegg	N.M.O.C.C.	Hobbs NM
Pete Porter	self	Santa Fe

NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARING

SANTA FE , NEW MEXICO

Hearing Date JULY 14, 1976 TIME: 9:00 A.M.

NAME	REPRESENTING	LOCATION

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
JULY 14, 1976

Commission
~~EXAMINER~~ HEARING

IN THE MATTER OF:

Hearing called by the Oil Conservation Commission on its own motion to permit Agua, Inc., and all other interested parties to appear and show cause why Agua, Inc., should be authorized to resume salt water disposal into the San Andres formation in its SWD Well No. H-35 located in Unit H of Section 35, Township 22 South, Range 37 East, Lea County, New Mexico.

Case 5713

BEFORE: Joe Ramey, ~~Examiner~~ Director
Phil Lucero Chairman
Emery C. Arnold Member

TRANSCRIPT OF HEARING

BE IT REMEMBERED that on to-wit, the fourteenth day of July, 1976, this matter came on for hearing before the ~~Joe Ramey, Examiner,~~ New Mexico Oil Conservation Commission, Santa Fe, New Mexico, at the hour of nine o'clock in the forenoon.

HOWARD W. HENRY & COMPANY
General Court Reporting Service
601 Tijeras, N.W.
ALBUQUERQUE, NEW MEXICO 87102
Phone 247-2224

A P P E A R A N C E S

FOR THE OIL CONSERVATION COMMISSION:

MR. WILLIAM F. CARR
Legal Counsel for the Commission
State Land Office Building
Santa Fe, New Mexico 87501

FOR AGUA, INC.:

JENNINGS, CHRISTY & COPPLE
Attorneys at Law
Suite 1012
Security National Bank Building
Roswell, New Mexico
By: Mr. James T. Jennings

* * * * *

MR. RAMEY: The hearing will come to order. Call the next case, 5713.

MR. CARR: Case 5713 in the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Agua, Inc., and all other interested parties to appear and show cause why Agua, Inc., should be authorized to resume salt water disposal into the San Andres formation in its SWD Well Number H-35, located in Unit H of Section 35, Township 22 South, Range 37 East, Lea County, New Mexico.

MR. RAMEY: Call for appearances in the case.

MR. CARR: William F. Carr, appearing for

the Commission. I have three witnesses.

MR. JENNINGS: James T. Jennings, Jennings, Christy and Copple, appearing for Agua, and I have one witness, Mr. Abbott.

MR. RAMEY: I ask that all witnesses stand at this time and be sworn.

(THEREUPON, the witnesses were duly sworn.)

MR. RAMEY: Mr. Carr, call your first witness, please.

MR. CARR: I call Nathan Clegg.

(THEREUPON, Oil Conservation Commission Exhibits 1-A, -B, -C, -D, -E, -F, -G, -H, -I, and Two were duly marked for identification.)

NATHAN E. CLEGG

was called as a witness, and having been first duly sworn, testified upon his oath as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

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

A. Nathan E. Clegg.

Q. Mr. Clegg, by whom are you employed?

A. New Mexico Oil Conservation Commission.

Q. And how long have you been so employed?

A. Four-and-a-half years.

Q. Now what position do you hold with the Commission?

A. Oil and gas inspector.

Q. Now, would you briefly summarize for the Commission what your duties as oil and gas inspector entail?

A. My duties are inspect spills, casing leak surveys, plugging and abandoning wells and any other duties that might be in the rules and regulations.

Q. Have you ever testified before the Commission?

A. No, I haven't.

Q. Mr. Clegg, would you briefly summarize your work experience?

A. I have had twenty-five years as a production foreman for Sun Oil Company, Sunray DX, and Sun Oil Company, and previously was gang pusher, roustabout, unit operator.

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

A. Yes, I am.

Q. And the Agua H-35 salt water disposal well?

A. Yes, I am.

MR. CARR: Is the witness qualified?

MR. RAMEY: Yes. I think the witness is qualified.

Q (Mr. Carr continuing.) Mr. Clegg, do your duties with the Commission include witnessing certain tests?

A Yes, they do.

Q Have you been witnessing Bradenhead leak surveys, which are being run pursuant to the provision of Oil Conservation Commission Order Number 5003?

A Yes, sir.

MR. CARR: May it please the Court, at this time there are a number of cases which relate to this problem, and in order that the Commission can have a complete record before it when they prepare an order, I would request that the records of certain cases be incorporated, and the records are these cases: Case 5377, which is the original case concerning curtailment of injection in Lea County; Case 5403, which is -- which held to reopen the previous case, and also considered curtailment of injection in Lea County, and that -- there are two cases actually in that. One was held on April 12th, 1975, the other, November 19th, 1975. We also have Case 4916, which was a case called for the purpose of authorizing injection in the open hole interval in the Agua C-2 disposal well.

Case 5592, which authorized injection in the Agua, A-22 disposal well.

Case 5697, which extended authority to Agua -- to inject in the Agua C-22 Well.

And Case 5644, a case in which there has been no order entered as yet, which involved a request to increase the pressure on the outweighing 22.

Now is there any objection to that?

MR. JENNINGS: No, sir.

MR. CARR: Are those incorporated?

MR. RAMEY: Yes. The Commission will incorporate those cases.

Q. (Mr. Carr continuing.) Mr. Clegg, would you tell us just what is a Bradenhead survey?

A. That consists -- the Bradenhead starts with the surface casing, then we have the oil string, and the tubing. Some of them have intermediate strings in them, which they consist of two or three different heads.

Q. And so what do you do?

A. Observe the pressure reading on it, and if there is any pressure, bleed it off, and determine whether we have salt water or gas or various fluids in it.

Q. So when you run a Bradenhead survey, you test

the pressure in the tubing --

A. That's right.

Q. -- in which the salt water is injected?

A. That's right.

Q. And that tubing is hung in an intermediate production string, and you check the pressure between the tubing and that string?

A. That's right.

Q. And then you also -- and that sits in surface casing, and you check the pressure between the intermediate string, and the surface casing, is that correct?

A. The oil in the surface, yes, sir.

Q. Have you witnessed Bradenhead surveys on the Agua salt water disposal well, H-35?

A. Yes, sir, I have.

Q. At this time I'd like to hand you what's been marked Commission Exhibits 1-A through -I, and ask that you refer to what has been marked as Commission Exhibit 1-A and explain to the Commission what this is?

A. This is a field trip report when pressures were taken on this particular well at that time, while on the Agua well at that time.

Q. What is the date of this?

A. This is dated August 11th, 1975.

Q. Now, Mr. Clegg, was this actually a Bradenhead test or was this merely a survey of the gauges?

A. This is a field trip report and a survey of the pressures on the well.

Q. What pressures were reflected at that time?

A. Let's see, we had -- on the surface we had eight hundred pounds, and the casing pressure had eighteen hundred, and the tubing had seventeen hundred pounds.

Q. Now, are these normal pressures to expect?

A. No, they aren't. That other surface is -- shouldn't have been there.

Q. Did this pressure on the surface string cause some concern?

A. It sure did.

Q. Did you report this to anyone when you discovered this?

A. I reported it to my supervisor.

Q. Now, if you will turn and refer to what's been marked as Exhibit 1-B, would you explain to the Commission what that is?

A. This was a Bradenhead survey on August the 14th.

Q. And this is your field report on that?

A. Yes, sir.

Q. Now, was this actually a Bradenhead survey or Bradenhead test?

A. This is -- this is -- I'm almost sure there is a casing leak survey test on that particular date.

Q. But this is an actual test, not just a review of the gauges?

A. Yes, sir. That's right.

Q. Was this witnessed by anyone other than you?

A. Yes. Pete Turner with Agua was present at the time.

Q. And what pressure was reflected on the surface string?

A. The surface string at that time had eight hundred and fifty pounds.

Q. Now, as -- in this field report, you refer to a salt water flow. What do you mean by that?

A. Yes. That was -- the pressure was bled off through a valve above the surface from the surface string, and this pressure was bled off, and the salt water surfaced immediately after the pressure was bled off, and it was bled off out there for -- pressure behind it for at least two or three minutes and was shut back in.

Q. So is this correct, what you did, is you opened the valve, and oil -- or air or gas --

A. Yes.

Q. -- came out and then eventually salt water was produced?

A. That's right.

Q. Did it flow out on to the ground?

A. Yes, it did, until we shut it back in.

Q. What does a salt water flow of this nature indicate to you?

A. It indicates that possibly a leak or something that is causing it, undetermined to our knowledge.

Q. Okay. Now, from this test, then, examining this water flow, were you able to determine the source of this water?

A. Other than it was salty, no, I was not able to determine where it was coming from.

Q. What could be the effect of leaking salt water like this in this annular space?

A. Eventually it will eat up surface pipe and water will surface in the intermediate, and it will protrude into the fresh water zone, contaminate the fresh water zone.

MR. CARR: I'd ask at this time to refer to what's been marked as Oil Conservation Commission Exhibit 1-C,

and explain to the Commission what this is?

A. This is a water sample that was picked up on August the 15th and an analysis run on it.

Q. Okay. Now this is your field report and it shows that you took a water sample?

A. Yes, sir.

Q. All right. Did you have that water sample analyzed?

A. Yes, I did.

Q. Where did you take this water?

A. We took it to the office.

Q. Whereabouts was this water? Was it between the casing and production string, or the tubing?

A. It was between the -- it was in the surface string.

Q. Okay. And you took it to the office, it was analyzed, and what did your result show?

A. It was saturated with salt, super saturated.

Q. After this inspection, did you report this to anyone?

A. I reported to my supervisor.

Q. All right. Did you take any action concerning the well at that time?

A. No, I didn't, other than just to report it.

Q. Did you permit them to continue injecting in the well?

A. I believe at that time they were injecting into the well.

Q. Did you increase your monitoring activities of the well at that time?

A. Yes, we did. We kept monitoring and checking on it.

Q. Okay. Now, I'd like you to look at what's been marked as Exhibit 1-B and tell the Commission what this is.

A. This is the water samples that was picked up as a field trip report, August the 18th, and picked up samples in the water tank, picked up in the water tanks there.

Q. Okay. Did you have these samples from the water tank analyzed?

A. Yes, we did.

Q. And what did your analysis show?

A. They were -- had salt but not saturated at the point.

Q. And did you report this?

A. Yes, I did report it to my supervisor.

MR. RAMEY: Excuse me just a minute. Mr. Clegg, do you have any figures on, say, the chloride content of these water samples, or is that coming later?

A. I don't believe I have it. Yes, I do, too. Do you want those chlorides?

MR. CARR: Yes. Would you give us the chlorides on both of the samples, if you could?

A. Okay. On August the 15th --

Q. This was taken from the space between the surface casing and the injection -- or the production string?

A. That's right. This was a hundred and eighty-eight thousand eight hundred and sixty parts per million.

Q. Okay. And, Mr. Clegg, what did your analysis on the other sample show that was taken from the tank?

A. Thirteen thousand sixty-six hundred and sixty on a --

Q. What was that?

A. August the 18th, thirty-two thousand six hundred and sixty parts per million on it.

MR. RAMEY: Thank you.

Q. (Mr. Carr continuing.) Now, will you turn to what's been marked as Oil Conservation Exhibit 1-E, and tell the Commission what that is?

A. This is a letter from -- to Agua from the Commission, directing them to cease disposing of water in this particular well.

Q. Now, Mr. Clegg, would you refer to what's marked Exhibits 1-F, -G, -H and -I, and explain them to the Commission?

A. This is a field trip report where the -- checking the pressures on various strings, and on this -- the pressure on that particular time was -- at the surface, was five hundred and twenty-five pounds, casing pressure was eighteen hundred, and the tubing is seventeen hundred and fifty pounds.

Q. And that was taken August 25th, correct?

A. That's right.

Q. And as you go on through these, are these just subsequent reports of inspections?

A. Yes, they are.

Q. Do they all reflect that the well was pressured up?

A. That's right.

Q. Mr. Clegg, when did you last check this well?

A. I checked this July the 9th at about four p.m.

Q. And that was last Friday?

A. Yes, sir.

Q. Was there still pressure on the surface string?

A. Yes, there was. There's -- on the surface we had three hundred and fifty pounds, and on the casing we had seven twenty-five, and on the tubing we had three hundred and sixty pounds. That's taken at two forty-five p.m., Friday.

MR. JENNINGS: What was that casing?

A. The casing was seven twenty-five.

MR. RAMEY: Would you read all three of those again, Mr. Clegg?

A. Yes, sir. The surface was three hundred and fifty pounds; casing was seven twenty-five; and the tubing was three hundred and sixty pounds, at two forty-five p.m., Friday.

Q. Mr. Clegg, based on your experience with this well, would you have any recommendation to make to the Commission concerning injection in the H-35?

A. Other than I don't think there should be any water put in it until the pressures have been depleted and everything.

MR. CARR: I have nothing further of Mr. Clegg.

MR. RAMEY: Any questions of the witness, Mr. Jennings?

MR. JENNINGS: Yes.

CROSS EXAMINATION

BY MR. JENNINGS:

Q. Mr. Clegg, from your examination of the well and the tests that you have run, what have you determined to be the source of the water and the pressure?

A. I made a determination, it is other than a salt saturated.

Q. What does that indicate to you?

A. It indicates it is saturated with salt.

Q. Does that indicate the source of the water?

A. Well, I -- I couldn't answer that, because I don't know.

Q. How do you explain the difference in the chloride content between the water that was between the tubing and the casing and the water that was in the -- or it is in the tubing and the water that was coming up on the surface?

A. Well, that water that's coming from the field was with the low chlorides, and that was with the salt saturated was coming up out of the surface.

Q. Was that the water that Agua was in effect injecting?

A. It was coming to the surface tank, yes, sir.

Q. That was the water -- Agua was putting into the ground there?

A. Yes. It was coming to the tank.

Q. On your July 9th, 1976, test, when you tested the surface pressure, how long did you -- did you open it up?

A. No, sir. There was a chart on that with two

opinions on it, one from the tubing and the other from the surface.

Q. You just checked -- you didn't open it up to determine how long it would take it to bleed off?

A. No, sir.

Q. Have you ever done that?

A. No, sir, we have -- we never have, or I haven't.

Q. Has anyone checked this well on behalf of the Commission at any time to your knowledge other than yourself?

A. I think so.

Q. Who would that be?

A. Well, one of your own representatives was there Friday, and also Pete Turner was there on the original, to run the casing leak survey.

Q. No. I was speaking of anyone who might have conducted any test on behalf of the Commission.

A. Oh, I don't know -- I don't know whether they have or not.

Q. Is there anyone else in charge of -- or that checked -- or -- of testing operation other than you and Turner?

A. On the flow back and that way?

Q. Yes.

A. I have never even checked the flow backing.

All I have checked is the pressure.

Q. You just checked the pressures on it?

A. That's right.

Q. Now, if the flow back has been checked, it has been checked by someone other than yourself?

A. That's right.

Q. And if somebody did check it, you don't know who?

A. That's right.

Q. Mr. Clegg, have you had occasion to test other wells in the same area?

A. Yes. We ran tests on various wells in the area.

Q. Have you found that there is a surface pressure in these other wells?

A. Yes, we have.

Q. Could you point out any wells that appear to have surface pressure equal to the one -- the pressure in this Agua well?

A. Not offhand, I sure can't.

Q. Is the -- would it be true to say that there are a number of wells in the same area that have a similar problem?

A. There's problem in the area there, yes.

Q. Would you estimate how many wells have this similar problem?

A. I couldn't estimate how many.

Q. Well, do you check them?

A. Well, there's two or three of us working there and we all check them.

Q. Well, can you remember any in particular that you have found where they had this surface pressure?

A. Yes. We have squeezed a lot of wells there that has had pressure on them, on the string.

Q. When do you last recall having tested a well that showed surface -- substantial surface pressure other than the Agua well?

A. I don't remember the last time in that area. I have checked them in various areas, but I haven't checked them at that particular one.

Q. And you are just not in a position to point out any particular wells upon which you -- in this area where you found the pressures, but you know there are some?

A. Yes.

Q. Have you reported these wells to the Commission?

A. Yes. Everything that has pressure on the surface has been reported to the Commission.

Q. Have you made recommendations to the Commission concerning these other wells?

A. I just report them and recommendations come out of the Commission office.

Q. Do you remember when you last reported any such wells?

A. No, I don't. I'd have to look back on my trip sheets.

Q. Do you have those available?

A. No, sir.

Q. Are you familiar with the -- some of the injection wells in which they're injecting in connection with a water flood?

A. Some of them, yes, sir.

Q. Have you found any of these to have any surface pressure?

A. Yes, we have.

Q. Have you made any recommendations concerning these wells?

A. Yes, sir. They have -- I haven't made any recommendation. There's been work done on these particular wells.

Q. Do you have any thoughts as to how the problem in connection with the Agua well could be solved?

A. I think that -- I don't have -- I can't make a decision on how it is to be solved. It would have to come out

of the office.

MR. JENNINGS: I believe that's all.

MR. CARR: I just have a couple of questions.

MR. RAMEY: Mr. Carr.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Clegg, are you familiar with many wells in the area that have a surface pressure equal to eight hundred and fifty pounds?

A. No, sir, I'm not.

Q. And if you encounter a pressure like that, how would you go about repairing it or --

A. It would have to be squeezed off, cement circulated in behind the pipe and tie all the strings together with cement.

Q. Can you do that while it's pressured up?

A. Unable to do it with the pressure up.

MR. CARR: I have no further questions.

MR. RAMEY: Now, when you say pressured up, they are unable to do it while pressured up, do you mean in the oil string or the tubing string?

A. In the surface, behind where we have the pressure,

unable to squeeze it, if we have any water contamination, be unable to squeeze it and shut the water off.

MR. RAMEY: Mr. Jennings, any more?

MR. JENNINGS: Just one question.

RECROSS EXAMINATION

BY MR. JENNINGS:

Q. Have you, or -- first, could you tell whether that pressure is caused -- the cause of that pressure?

A. Can I tell?

Q. Yeah.

A. I'd be a millionaire if I could tell. Yeah. I could solve that if I knew what was causing it.

Q. All right. To rephrase the question, can you tell whether that is caused by water or some other source?

A. No. I can't see that. I sure can't.

Q. And you -- there's pressure, but you don't know whether it's water or gas or what?

A. Yeah. We can determine whether it is water or gas if it is coming to the surface, because we can open it there and determine whether it is air, water or gas, because we have got valves on all those Bradenheads and surface strings.

Q. Well, then, I thought you had testified that you

had not opened the valve to determine what it was, is that true?

A. We have been there when they have opened them.

Q. Well --

A. We don't open any valves. We are not allowed to open any valves, but we can usually -- a company representative there does the opening of the valves.

Q. Well, when you were there when the valve was open, what happened?

A. Pressure bled off and water surfaced immediately.

Q. Were you ever there at any time when it was tested and it was gas pressure?

A. No, sir.

Q. Do you know if any member of the Commission was ever there and witnessed a test in which the pressure was being caused by gas?

A. No, sir.

Q. And it was concluded there was no pressure?

A. No, sir.

MR. JENNINGS: I believe that's all.

MR. CARR: I have no further questions.

MR. LUCERO: I have one question.

CROSS EXAMINATION

BY MR. LUCERO:

Q. In your opinion, what would need to be done to continue the use of this well, if anything can be done, for a salt injection, salt water injection purpose?

A. In my opinion, it would have to -- all the pressure would have to be dissipated, and go down and set a bridge plug, a retrievable bridge plug and perforate that, and circulate cement to the surface, tie all the strings together, so it couldn't get out into the fresh water zone, and eventually that salt will eat up every string of pipe in the hole. And if they have to cement the well, then they go out and drill out the plug and test it and see if it holds in. If it doesn't, why, we have to use the same procedure again with cement.

Q. All right. In your opinion, if you didn't have any unnecessary delays, how long would that take?

A. Heavens, it would depend on how long it takes to bleed the pressure off of it, stop the flow and everything. It's kind of hard to answer a question like that.

MR. RAMEY: In other words, you're saying, Mr. Clegg, they will have to flow back the tubing --

A. That's right.

MR. RAMEY: -- to get the pressure off the former injection pressure that was going down the tubing?

A. That's right.

MR. RAMEY: They are going to have to bleed that off until the well will no longer flow salt water?

A. That's right. It will have to be bled off, and the well should be dormant before they ever cement it.

MR. RAMEY: And then they will have to go in and set a bridge plug and perforate it -- or they will have to pull the tubing, set a bridge plug, perforate the casing above the bridge plug and then --

A. That's right.

MR. RAMEY: -- circulate cement through these perforations and fill the annular space between the oil string and the tubing?

A. That's right.

MR. RAMEY: Or the surface casing?

A. Surface, yes, sir.

MR. LUCERO: You feel there is no way you could estimate in terms of a time period, assuming that you don't have any other delays, when all this can be done?

A. I just don't have any way of determining --

MR. LUCERO: Okay.

A. -- how long it would take.

MR. RAMEY: Any further questions of the witness?

MR. JENNINGS: No. That's all.

MR. RAMEY: You may be excused.

(THEREUPON, the witness was excused.)

MR. CARR: I call Les Clements.

LES CLEMENTS

was called as a witness, and having been first duly sworn, testified upon his oath as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

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

A. Leslie A. Clements.

Q. Mr. Clements, by whom are you employed?

A. New Mexico Oil Conservation Commission.

Q. In what capacity?

A. Oil and gas inspector.

Q. How long have you been so employed?

A. Sixteen-and-a-half years.

Q. Mr. Clements, do your duties include witnessing various kinds of tests for the Commission?

A. Yes, sir.

Q. Have you previously testified before the Commission or one of its examiners and had your credentials made a matter of record?

A. Yes, sir.

Q. Are you familiar with the subject matter of this case in the H-35 disposal well?

A. Yes, sir.

MR. CARR: Does the Commission accept his qualifications?

MR. RAMEY: Yes.

Q. (Mr. Carr continuing.) In your position, do you often work with tracer and temperature logs and read them and base decisions on your interpretations of them?

A. Yes, sir.

Q. Did you -- did you witness a tracer and temperature survey which was run on the Agua salt water disposal H-35 well on October 16th, 1975?

A. Yes, sir, I did.

Q. And who else was present at that time?

A. Mr. Turner and the Western Company representative.

Q. I will hand you what's been marked as Oil Conservation Commission Exhibit 2, and ask you to identify that, please?

A. This is a composite copy of the logs we run that day.

Q. And this was run on October 16th, 1975?

A. Yes, sir.

Q. Have you previously examined this log after being shown it?

A. Yes, sir.

Q. What conclusion have you reached from your examinations of this log?

A. Well, we have a problem. From about twelve hundred to thirteen hundred feet.

Q. What is the nature of that problem?

A. Well, there's some water moving somewhere down there.

Q. Are you -- can you identify for sure what it is?

A. It is a cooling effect.

Q. That's reflected on the temperature -- survey?

A. Yes, sir.

Q. Now are you -- can you identify with any certainty what that water is?

A. No, other than it is a problem -- it presents a problem. It is an indication that something is wrong.

Q. Did you notice anything else from the log?

A. Yes, sir, one about fourteen fifty.

Q. What about fourteen fifty?

A. There is a -- it drops off gradient again and indicates that something is moving by.

Q. What you're saying is that at about fourteen hundred and fifty feet the temperature drops off?

A. Yes, sir.

Q. And that indicates to you that, what?

A. That there is a fluid movement there.

Q. At that depth?

A. Yes, sir.

Q. Do you notice anything else from your examination of the log?

A. In previously looking at it we had to -- around twenty-five hundred to twenty-two -- or twenty-two hundred to twenty-five hundred feet, there is -- the gradient straightens out again and indicates that there is some fluid movement there.

Q. Now, Mr. Clements, have you inspected this well on occasion other than the time you --

A. Yes, sir.

Q. -- ran this log?

A. Yes, sir.

Q. Did you find pressure between the surface casing

and the production string?

A. Yes, sir, I sure did.

Q. In your inspection?

A. Yes, sir.

Q. Now, assuming that there is a flow at, say, fourteen hundred and fifty feet, in your opinion, could this be repaired?

A. I don't think it could be, in my opinion, at the time -- or at the present time be repaired properly.

Q. Now, what problems would you incur if you were attempting to repair that?

A. I believe that the survey indicates that there is water movement and cement absolutely will not set up if there be any water movement.

Q. And how would you correct this?

A. I believe that the well would have to be stabilized to zero pressure, and make certain that we have no movement in the salt section, or at these -- where these anomalies occurred on the log, and that it will have to be perforated and squeezed.

Q. Do you have any recommendation to make to the Commission concerning injection in the H-35 well?

A. I don't think it should be allowed till the

well is properly repaired.

MR. CARR: I have nothing further of Mr. Clements.

MR. RAMEY: Mr. Clements, what do you base your conclusion that cement will not set where you have moving water?

A. Two past experiences.

MR. RAMEY: Have you -- could you cite any work that's been done in the area?

A. Yes, sir. For instance, T.P. -- I can't remember the well, seemed like we spent something like a hundred thousand dollars trying to cement one of their wells off with movement.

MR. RAMEY: When you say "we," who do you mean?

A. T.P. Sorry about that. I witnessed it.

MR. RAMEY: But they got the well -- they did get the well squeezed off?

A. They got it isolated.

MR. RAMEY: By that, you mean --

A. Yes, sir. We have a window there, and we have a casing patch over the perforations. Also, we had a similar experience on the Armor Citco State Well.

MR. RAMEY: Any other questions of the witness?

CROSS EXAMINATION

BY MR. LUCERO:

Q. You referred to the fourteen fifty foot level?

A. Yes, sir.

Q. Am I correct in saying that you stated that the flow could not be repaired there?

A. Under the present setup, it is my opinion that it can't be.

Q. In other words, you're referring it to the present setup --

A. Yes, sir.

Q. -- because later on you said that it would be shut down until properly repaired?

A. Yes, sir. If -- I believe I stated that if the well was dissipated to zero pressure and that we ascertained there was no movement there, I believe it can be repaired, yes, sir.

Q. Okay. I thought you had said that the fourteen fifty foot level could not be repaired.

A. I don't think it can right now, sir.

Q. All right. But what you're saying is it can, but not right now?

A. Yes, sir. Right.

MR. LUCERO: Okay.

MR. RAMEY: Do you think, Mr. Clements, that you have movement into the annular space between the side of the hole and the oil string at twelve to thirteen hundred?

A. Yes, sir.

MR. RAMEY: And fourteen fifty?

A. Yes, sir.

MR. RAMEY: And twenty-two to twenty-five hundred?

A. Yes, sir.

MR. RAMEY: And water is entering the well bore --

A. Yes, sir.

MR. RAMEY: -- from some outside source --

A. Yes, sir.

MR. RAMEY: -- at these points? Where is the -- where is the surface pipe set on this well?

A. Let me see if it doesn't have it on top of this log. I don't have my field notes with me. It's eleven hundred and something.

MR. JENNINGS: Eleven eighty, sir, eleven eighty.

THE WITNESS: Eleven eighty.

MR. RAMEY: Any other questions of the witness?

Mr. Jennings?

MR. JENNINGS: I have a few.

CROSS EXAMINATION

BY MR. JENNINGS:

Q. Mr. --

A. Clements.

Q. -- Clements, do you have any other wells in this vicinity that have indicated a similar problem?

A. Yes, sir.

Q. Can you pinpoint some of the wells?

A. I don't have the exact location of them, but I could name the companies, if that would help you.

Q. Are they experiencing water flow in the same general area?

A. Yes, sir. This is --

Q. Is it generally in the salt?

A. Yes, sir.

Q. What are some of the other companies that are experiencing this same problem?

A. Well, Gulf, T.P., Armor, Skelly, just about every operator down there.

Q. Have you recommended that all of these wells be

shut in?

A. I recommended they be repaired.

Q. When did you make that recommendation?

A. I beiieve it was at one of the hearings that I don't -- whatever Mr. Nutter had a while ago on -- or Mr. Carr, incorporated in the hearing, one of those. I don't remember just which.

Q. Well, then, Agua is not a unique problem?

A. No, sir.

Q. All right. Have the other wells been repaired?

A. Some of them have, yes, sir.

Q. Well, let's look at the ones that have not. Are there some that have not been repaired?

A. Yes, sir.

Q. Could you tell me how many?

A. I'd have to look at my records. It would take a while to dig them out and I don't have them with me.

Q. Eight, ten, fifteen?

A. Oh, seventeen or eighteen, somewhere in that neighborhood. That's just a wild guess.

Q. Until these wells are repaired, would it help to repair the Agua well if the water is coming from these other wells?

A. I think that the water is not coming from these other wells because they are not injection wells. They are producing wells. There is a slight difference there.

Q. Well, where is the -- do you have any idea where the water is coming from?

A. I'm like Mr. Clegg. If I could answer that, I'd be a millionaire.

Q. Well, isn't it true that the Agua well has been shut in for -- I don't know, for -- since last September 17th?

A. But the pressure has not dissipated, either, has it?

Q. No.

A. Okay.

Q. Do you know of any efforts to relieve the pressure?

A. They're periodically flowing the water back from their well, Agua is, I understand.

Q. Well, will that relieve the pressure if the other wells are not repaired?

A. I don't know.

Q. Has any action been taken to have the other operators in the pool repair the well?

A. Yes, sir, but it was held in abeyance with the

formation of the committee, South Eunice Committee setup. I wrote letters requiring all of them to be repaired, Mr. Jennings.

Q. But you haven't cited any of them into shutting their wells?

A. Some of them are shut in. They are temporarily abandoned wells. They are -- none of them are -- however, are injection wells or disposal wells.

Q. Are you familiar with any area -- any injection wells that are being -- wells in which there is injection in connection with water flood operation in the area?

A. Am I familiar with any of them?

Q. Yes, sir.

A. Yes, sir.

Q. Are there a number of injection wells in the area?

A. Yes, sir.

Q. Are you familiar with the pressures in these injection wells?

A. Not right offhand. I have observed them many times, but I hate to sit here and tell you what I thought it was.

Q. Are they a hundred pounds?

A. No, sir. Considerably more than that. I'd say somewhere in the twelve to fifteen-hundred-pound range.

Maybe even possibly higher in some cases. I'm not sure.

Q. Would it be fair to say that there's probably a hundred injection wells in the area?

A. I don't know.

Q. There's a substantial number of them?

A. Yes, sir.

Q. And they are all injecting at substantial pressures?

A. The pressures, yes, not -- not as much as it was. We have curtailed the pressures and the volumes of water under this order 5003. This is the same order that we run the Bradenhead survey on, that Agua well.

Q. Now, Mr. Clements, sometime back we had a hearing here, I believe it was -- just a minute, I can't tell you, but I think it was November, in connection with case 5403, and at that time I believe you testified as to the test you had made on a number of wells?

A. Yes, sir.

Q. Do you recall the report that you gave under test of the Agua well, and I believe this test was made sometime between February 16th, and February the 25th?

A. February the -- sir, the dates again?

Q. My recollection -- my notes show it was -- the test

was made between February 16th, and February 25th. It might be wrong, but that's my --

A. I'm certain that it is probably another Bradenhead survey that we run, quarterly survey.

Q. And I think you testified at length, and probably -- I want to say case 5403.

MR. CARR: I think you're right.

MR. JENNINGS: Do you remember what your test of the Agua well showed at that time?

A. No, sir, I don't.

Q. To refresh your recollection, I will hand you what was marked, I believe, as Exhibit A in connection with that hearing, and call your attention to the Agua well in which there is a little star beside it.

A. All right. Okay.

Q. Does that refresh your recollection?

A. If this is our exhibit, I'm sure it is right.

Q. What does that show?

A. It shows five hundred and twenty-five pounds of gas in the water, forty-five second --

Q. What does that -- what does that -- just explain that to me now. I'm not a pressureman. What is the --

A. It's got five hundred and twenty-five pounds of

gas on it. It shouldn't be there. Surface pressure or casing should absolutely have nothing on them. They are for protection of fresh water and not to contain pressures.

Q. And what -- then after you bleed it -- did the gas dissipate?

A. I assume it did. It said it did.

Q. Well, you reported this, did you not?

A. I'm sure this information was passed on to me by someone else that run the test. At the time I was kind of overseeing a bunch of things.

Q. Well -- and you don't recall having made this test?

A. No, sir. I did not make it.

Q. What does the -- does it indicate that there was no water?

A. It does on this one, yes, sir, it does.

Q. How do you explain that?

A. I don't know.

Q. Could I have the exhibit?

A. It could be salted over. I think Mr. Abbott could explain that to you.

Q. Doesn't this indicate that there is no communication in that well?

A. I think you're asking for an opinion that

I don't know whether I have that or not.

Q. Well, you have expressed opinions about other things?

A. Yes, sir.

Q. Huh?

A. Yes, sir. You have got a problem there.

Q. Does it indicate --

A. A grave problem.

Q. Does it indicate there is communication or not?

A. You have got a -- you have got something coming from somewhere, haven't you?

Q. Well, how do yo explain the test in February that shows five hundred pounds of gas pressure and no water, and then there's tests made just on July 9th on Mr. Clegg, showed the surface pressure of three hundred and fifty pounds? Is it possible that that was gas, too?

A. No, sir. I flowed that well on October 16th, and it flowed salt water.

Q. Well, sir, I'm talking about -- this is later. This is in -- after October. I'm talking about now the -- this test, the gas -- the one that showed the gas was in February, and the latest one which showed a three-hundred-fifty-pound pressure was made on July 9th, earlier this week, or

last week, by Mr. Clegg.

A. Uh-huh.

Q. Now, my question was, could you tell whether that was water pressure or gas pressure?

A. No, sir, not without flowing it, we can't.

Q. When was the last time you flowed this, or you witnessed the flow?

A. The last time I flowed it was October 16th, 1975.

Q. Do you know of any subsequent time that it was flowed by anyone who worked for or with you in the Oil Conservation Commission?

A. No, sir.

Q. All right. Do you know why the other wells that present this problem have not been repaired?

A. Yes, sir. I think I told you that a minute ago, that I had wrote letters to each operator that had this problem, stating that these wells would have to be repaired, and then with the formation of the South Eunice Committee, which Mr. Abbott is a member of, they decided that they would hold this in abeyance till they monitored some of these problem areas.

Q. Well, now, you said they decided.

A. Yes, sir.

Q. Was that the Oil Conservation Commission or the

operators?

A. The operators and the Commission.

Q. Well, did they -- did they delay this with Commission approval?

A. I'm certain that it was, yes, sir.

Q. When did you write them?

A. I don't know. I'd have to go back and look in my files.

Q. Well, April, last August, or when?

A. Immediately after the first Bradenhead survey.

Q. That was -- when the first Bradenhead survey -- is this the one in February --

A. I don't know.

Q. -- or prior to that?

A. It was prior to that. And the ones that hadn't been repaired, I wrote them after the second Bradenhead survey, again.

MR. JENNINGS: I believe that's all.

MR. RAMEY: Mr. Clements --

A. Yes, sir.

MR. RAMEY: -- I think Mr. Jennings has indicated that the Commission has not shut any injection wells in other than perhaps the Agua well in the area, which is --

I'm sure is true, but there have been other injection wells shut in in trying to determine the source of these water flows that are in the area, have there not been?

A. Yes, sir. Yes, sir.

MR. RAMEY: And do you know approximately how many wells have been shut in?

A. Injection wells?

MR. RAMEY: Yes.

A. Eight to ten.

MR. RAMEY: And also there was a -- did you not attend a meeting, I believe it was in April of this year, wherein the operators were invited to attend the meeting from areas where we do have water flows in Lea County?

A. Yes, sir.

MR. RAMEY: Were there any threats or promises from the Commission at this time as to what possible action may be -- may have to be taken in these areas that you recall?

A. Yes, sir.

MR. RAMEY: Do you know what --

A. There's going to have to be solved.

MR. RAMEY: And if they weren't solved, what was -- what was an alternative?

A. Possibly shutting in of all injections in the southeast.

MR. RAMEY: Thank you.

THE WITNESS: Uh-huh.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Clements, in this area there are a number of different kinds of wells, is that correct?

jl;

A. Yes, sir.

Q. And the source of the problem that we are encountering in Lea County can't be clearly attributed to any one particular well?

A. No, sir.

Q. Is it safe to say that the Commission's attitude has been that any possible problem in any well is going to have to be corrected?

A. Yes, sir.

Q. Is that a fair statement?

A. Yes, sir.

MR. CARR: I have nothing further.

MR. RAMEY: Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Clements --

A. Yes, sir.

Q. -- you mentioned when you were reviewing that log there that there were three possible problem areas. One was in the neighborhood of twelve to thirteen hundred feet, I think. Now that would be at the approximate casing point for the surface casing --

A. Yes, sir. Right.

Q. -- or slightly below that?

A. Yes, sir.

Q. Now where would that be with respect to the salt formation?

A. I think immediately above it.

Q. That would be at the top of the salt?

A. Yes, sir.

Q. Okay. Then you had another possible problem area that was around fourteen, fifteen hundred feet?

A. Yes, sir.

Q. Where would that be with respect to the salt?

A. That would be in the salt.

Q. That would be in the salt?

A. Yes, sir.

Q. And then another possible area of concern was twenty-two to twenty-three, twenty-four, twenty-five hundred feet?

A. Yes, sir.

Q. And where would that be?

A. In the salt.

Q. In the salt?

A. Yes, sir.

Q. Or --

A. Or at the base of it.

Q. Down near the base of the salt?

A. Yes, sir.

Q. Now when you're talking about putting this well back on disposal use, you said it would have to be repaired first, but you didn't think it could be repaired until all the pressure had been bled off?

A. Yes, sir.

Q. And that the well was in a stable condition. Now, if the pressure has been bled off, and you have zero pressure on the tubing and zero pressure on the production casing, and zero pressure on the surface casing, does that mean necessarily, that these flows through these three salt areas,

or these three areas in the salt, that are indicated by the temperature log, does that mean necessarily, that all of those flows of water have ceased?

A. No, sir.

Q. So even if the pressure has been bled off, there would still be a possibility that you wouldn't be able to obtain a satisfactory cement job, if you attempted to squeeze those areas?

A. Very possibly.

Q. So maybe just bleeding off the pressure wouldn't necessarily mean that you could repair --

A. No, sir.

Q. -- the well to sufficient degree to put it back on disposal?

A. True.

MR. NUTTER: I believe that's all.

RECROSS EXAMINATION

BY MR. LUCERO:

Q. Mr. Clements, you made a distinction between the injection well problems and the producing well problems. Would you elaborate on that?

A. Yes, sir. Injection wells or disposal wells such as this well in question here is -- are injecting water into

the formation under pressure, where a producing well is just either -- some of them are temporarily abandoned, sir, but they are either flowing or pumping.

MR. RAMEY: But the water -- the water problems are not inside the production string on the producing wells, are they?

A. No, sir.

MR. RAMEY: They are on --

A. The surface strings and intermediate strings, yes, sir.

MR. RAMEY: I see. And some of these wells have pressure on the surface string and some have pressure on the intermediate string?

A. Yes, sir.

MR. RAMEY: Okay.

MR. JENNINGS: Just one other thing.

RECROSS EXAMINATION

BY MR. JENNINGS:

Q. Mr. Clements, I don't understand this too well. My understanding, the well -- as the water is being disposed of at a depth of some, oh, thirty-nine hundred feet, that is where the bottom of the -- of the hole, is it not, the bottom

of the other casing, the seven-inch or the seven --

A. I don't know. Mr. Jennings, I don't have that information with me.

Q. Well, assuming that the water is being -- there is thirty-nine hundred feet of seven-inch casing, and that there is open hole below that, wouldn't it indicate that that's where the water that's being put in at the surface is going?

A. Yes, sir.

Q. Do you have any indication or any evidence that the water at any place is getting out of the seven-inch casing, other than -- other than at the bottom?

A. No, sir.

Q. Do you have any indication or do you have anything that leads you to believe that the water that's being disposed of into that well is causing the pressure that is being asserted at the surface by -- in the surface -- outside the surface casing?

A. I can't answer that question.

Q. Well, you can't answer -- you don't have -- you do have any indication or you do not?

A. As I say, I can't -- I can't answer the specific first question that you had. Yes, there is indication that there is water coming from somewhere.

Q. But is there any indication that it is the water that is being disposed in that hole?

A. I can't answer that question.

Q. Does the -- is it of any significance to you that the water that is -- that was being produced at the surface or is causing the surface pressure is a hundred and eighty-six thousand parts per million of salt, and the water that's being injected into the well has only thirty-two thousand? Does that mean anything?

A. Certainly does. It means if that thirty-two thousand goes up through the salt, it will pick up that much.

Q. But do you have anything -- again, that indicates that it is going up through the salt?

A. I can't -- no, sir.

Q. Do you have --

A. Besides a temperature survey.

Q. Is this a temperature survey?

A. Yes, sir. It is a radioac- --

Q. Would you just refer to what you have marked as Fxhibit 2 --

A. Yes, sir.

Q. -- and tell me who ran that survey?

A. The Western Company, line division.

Q. For the purpose of the record, would you refer to page two, and just -- first, you will note there, that there were some remarks.

A. Yes, sir.

Q. Whose remarks are those?

A. Those are Western Company's.

Q. Are they the company who was employed to make the survey?

A. Yes, sir.

Q. And they were to make the survey, I assume, at Agua's expense?

A. Yes, sir.

Q. Do you feel that Agua -- that Western Company is a well qualified -- and that these surveys are evaluated by competent personnel?

A. I certainly do.

Q. Well, would you refer to the remarks and just read those to the Commission, please?

A. Okay. Tracer ran at one barrel per minute, and fourteen hundred pounds per square inch. Ninety-two percent of the fluid going past T.D., ten percent of casing shoe, temperature ran after tracer to find where fluid was coming in the well bore outside of seven-inch open surface pipe,

valve to flow back, but did not get enough flow back to change temperature. Possible fluid coming in at fourteen fifty, and channeled to surface, run two and three -- runs two and three, ran after flow back.

Q. Now, would you just explain to the Commission first what it means when it says ninety-two percent of the fluid going past T.D., ten percent, and casing shoe?

A. Well, the T.D., is the T.D. of the tool here, Mr. Jennings. It's not the T.D. of the well.

Q. What was the T.D. of the tool?

A. I don't know. I don't have that -- let's see, where did they run it to? Thirty-seven fifty, I assume. It says top log interval.

Q. And there was ninety-two percent of the fluid was going past thirty-seven fifty?

A. Yes, sir -- no, sir -- yes, sir.

Q. And ten percent at the casing shoe, what does that refer to?

A. It means that they lost ten percent of the fluid, the casing shoe that went into the formation of the casing shoe.

Q. Right there?

A. Yes, sir.

Q. Now does it make any indication of any areas

of possible problems other than at the fourteen-hundred-and-fifty-foot level?

A. The tracer survey does not. This is a different survey than we are talking about. This is a radioactive survey and not a temperature survey.

Q. But it does indicate where the water is going?

A. Yes, sir.

Q. And the only channeling possible at fourteen fifty channels into the surface?

A. No, sir. The tracer survey did not indicate that.

Q. But this is what the temperature survey indicated?

A. Yes, sir.

Q. Do you feel that these temperature surveys are quite accurate?

A. Yes, sir.

Q. And the tracer surveys are, too?

A. As far as they go, yes, sir.

MR. JENNINGS: I believe that's all.

MR. RAMEY: Mr. Clements, on the tracer survey, what is the extent or how far away from the well bore can a tracer survey detect fluid movement?

A. Eight to twelve inches.

MR. RAMEY: Eight to twelve inches?

A. Yes, sir.

MR. RAMEY: The Commission might -- might wonder about the validity when you add up to a hundred and two percent on a log, Mr. Jennings. Any other questions of the witness? Mr. Carr.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Clements, is it possible that the water in the surface string could be from the well of the water injected?

A. Yes, sir.

Q. Is it also a possible explanation that the high chloride content of the water taken from the surface string and the discrepancy between that and injection well could be a result of the water coming up through the salt?

A. Yes, sir.

MR. CARR: I have no further questions.

MR. JENNINGS: Just one thing in that line.

RECROSS EXAMINATION

BY MR. JENNINGS:

Q. There is an annulus between the tubing and the casing, is there not?

A. Yes, sir.

Q. And what is in that?

A. I believe Mr. Abbott said that he had some inert fluid, oil possibly, is that right, Bill?

MR. ABBOTT: Uh-huh.

Q. (Mr. Jennings continuing.) Is there oil showing up around the surface with this water that is being produced?

A. I don't think it is a significant volume to show up.

Q. Well, can't you see a stain, if there is a gallon of oil down there?

A. I don't even know how big an area we're talking about, Mr. Jennings. I don't think anyone else does, either.

Q. Well, you engineers ought to be able to figure the difference between the size of those pipes.

MR. RAMEY: Mr. Clements isn't an engineer, Mr. Jennings.

MR. JENNINGS: Oh, excuse me. He is an expert.

MR. RAMEY: I think he is an expert in his

field, but I don't believe he is an expert engineer.

MR. JENNINGS: Okay.

MR. RAMEY: I will identify him as such. Any further questions of the witness? He may be excused.

(THEREUPON, the witness was excused.)

MR. CARR: Call Mr. Sexton.

JERRY THOMAS SEXTON

was called as a witness, and having been first duly sworn, testified upon his oath as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

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

A. Jerry Thomas Sexton.

Q. Mr. Sexton, by whom are you employed and in what position?

A. New Mexico Oil Conservation Commission, supervisor of district one, southeast New Mexico.

Q. How long have you been so employed?

A. Since October of last year.

Q. Would you briefly outline your duties with the Commission?

A. To see that the rules and regulations of the

state are enforced.

Q. Have you ever testified before the Commission or one of its examiners?

A. No.

Q. Would you briefly summarize for the Commission your professional and educational background?

A. I graduated from the University of Kansas in 1959 with a B.S. in petroleum engineering, and worked twelve years for Cities Service Oil Company as a petroleum engineer in Kansas, Oklahoma, and New Mexico, and I worked three years with Rice Engineering and Operating Company as an engineer.

Q. And you have worked in New Mexico?

A. Yes.

Q. And you are familiar with the southern New Mexico?

A. Yes.

Q. Do you belong to any professional organization?

A. The A.I.M.E. and the A.P.I.

MR. CARR: If it please the Commission, I would tender Mr. Sexton as an expert witness in petroleum engineering.

MR. RAMEY: I think the witness is qualified to testify as a petroleum engineer.

Q. (Mr. Carr continuing.) Mr. Sexton, are you familiar with the circumstances surrounding this case?

A. Yes.

Q. In the Agua H-35 salt water disposal well?

A. Yes.

Q. In your opinion, what problems exist in this general area that surround the Agua H-35 disposal well which relate to the question of resumption of injection in this well?

A. Well, first, doesn't appear to me that the area has been stabilized. In June of this year Skelly had another injection well which their surface pipe water started flowing out their surface pipe, which is a continuation of the problems we have had, and then some operators east, while drilling the new wells, encountered water flows, and also we have had one operator spend one hundred fifty thousand dollars in trying to perforate and squeeze this water zone off, and due to water flow, they finally got their casing cemented off, but it didn't do a satisfactory job for the life of the well. And right now there's five wells that we are using as monitor wells set up in this committee, that I feel like if we required them to go in and perforate in the salt, circulate back up to the surface, that their cost per well would be in excess of a hundred thousand dollars, based upon these last

several work orders that have been done in the area, and this, to me, doesn't indicate that we have got the problem solved, and I have questioned that if Agua injects above the fracture pressure or even below the fracture pressure, whether their fractures have held since they have reduced the pressure, and I think we need some tests on this at a time when I would feel safe to re-inject water into the well, and I agree that the tracer log didn't show any water coming up directly to the salt section, but we ran the same tracers and the same logs on the -- all the injection wells in the area, and we found the same results, which indicates to me that the problem is unique and the committees nor anyone I know of has come up with the answer yet. They are being worked on and we may be getting closer, and I think there's been more like twenty injection wells shut down, and we are in the process of cycling them all to see if they have any response to these wells that are pressured up in the salt section, and to date we haven't had any, and I don't believe your well -- I'm not sure what your shut in pressure is on the Agua disposal well, but the committee feels like all three committees, that the shut in tubing pressure will have to be below five hundred pounds for it to show up on the -- on a response from these monitor wells that have pressure in the salt, so -- and Agua is a

member of the committee that is working in this area, and is aware that it is not a simple solution to it, and the Commission has let injection go on in the water floods in the area, but it's been on a voidage basis, which, to me, indicates that there is pumping wells that's going to produce this water that's being injected, and if you are leaking off it's going to be a reducing interval, because you only can inject what is produced, so it, in itself, is not something that is going to seriously extend the problem, like injecting into one well bore without any relief -- without any capacity on it, and to me, at the time we look at this well for injection again is when we can say that that area has been solved. Then we can go back in and look at your well, and see then if it can be corrected, but at this time to go in and inject water in an area that is pressured up and causing expensive work overs, and -- well, I don't believe this to be fair to the operators.

Q. Mr. Sexton, do you believe that authorizing injection to produce water in the H-35 would be in the best interest of conservation, would prevent waste and protect correlative rights?

A. I don't believe it would be.

Q. Okay. Do you have anything further to add

to your testimony?

A. I don't believe so.

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

MR. RAMEY: Mr. Sexton, you refer to fractures and such. Could you kind of clarify that for the Commission, what -- what happens when you fracture a formation?

A. Well, there's been a lot of -- a lot written on it, and you can find difference of opinions by professional people on what does happen, and there is no way of telling where a weakness in the fracture will occur. It may be some distance from the well bore. It may then go up and cross flow into a different formation and continue in a different zone than what it started out with, and it is -- this is -- we know we have some problem that is unique to the area, and we don't have the tools to -- available to the industry that I know of at this time to say for sure whether this is happening or whether it is not happening, but there have been numerous articles written that say this is a possibility. And when something unique comes up, you have to consider this as a factor.

MR. RAMEY: Do you have any rough idea of what the fracture pressure of the San Andres may be in this area?

A. I think we got this information from the

service companies that do fracture work, and it may vary from eleven to fourteen or fifteen hundred pounds.

MR. RAMEY: That is surface pressure?

A. Surface.

MR. RAMEY: Or is that bottom-hole pressure?

A. Surface pressure.

MR. RAMEY: What happens to a fracture? Is it a horizontal fracture or vertical fracture, or what is it?

A. I think probably at this depth, I would feel like most of it -- it would be a vertical fracture, which extends straight up and down, and not horizontal, so --

MR. RAMEY: Is there some rule of thumb or -- that you engineers use that -- as to where -- what depth fracturing, say, goes from vertical to horizontal?

A. I think most of it beyond two thousand feet, they could pretty well consider vertical. This varies with each formation, but like you say, as a rule of thumb, at this depth I would assume it would be a vertical fracture.

MR. RAMEY: So is there a possibility, say, of saying in the vicinity of the H-35 well, if there is a fracture, millions of barrels of water have moved through the fracture, take the pressure off and let -- will that fracture come back together?

A. It should. This is -- a lot of it depends on whether it's been etched out, and whether it's been -- and exactly what your fracture is, and what it is composed of, but supposedly if it is not propped, why, once you reduce the pressure, it should come back.

MR. RAMEY: Thank you. Do you have any further questions, Mr. Jennings?

MR. JENNINGS: Just a couple of questions.

CROSS EXAMINATION

BY MR. JENNINGS:

Q. Well, then, Mr. Sexton, as I understand your testimony, there are other problem wells in the area than Agua?

A. This is true. It is the whole -- probably -- the first area it included thirty-six section, I think, and now it's expanded to the east some several miles.

Q. And you testified that the number of injection wells that are still being allowed to inject water?

A. This is true.

Q. What formations are they injecting into?

A. I believe there again --

Q. Well, at what depth?

A. Around thirty-four hundred, I believe.

Q. Then they are injecting in a higher -- or closer to the surface than Agua?

A. Yes.

Q. Do you have knowledge about the pressure of these injection wells?

A. Yes. I think they could go possibly as high as eighteen hundred pounds, and they have been shut in, and part of them would drop almost immediately to, say, within seven days, go down to around five hundred, it looks like, and then some of them stay up to eleven or twelve hundred, and part of them are injecting at fourteen hundred pounds. But I might add that the ones that had high pressure were not taking water, both numerous ones so far have been shut down at eighteen hundred pounds, but they weren't taking, you know, maybe twenty barrels a day.

Q. It would take more pressure to get more water in there? Is that what you're saying?

A. Well, what I'm saying is that they probably weren't fractured or else it would -- once you reach a fracture pressure, then your rating goes up tremendously at that pressure, and these -- since these weren't taking large rates, why, I would assume that they were -- it was probably because of the characteristics of the formation, the reason they had

high pressure.

Q. Well, does the -- if Agua is requiring eighteen hundred pounds of pressure or thereabouts to inject into its wells, does that indicate that there were not fractures in the area?

A. No. I believe you probably were fracturing the zone, because I think you had one test -- didn't you say this one test was run at one barrel per minute at fifteen hundred pounds? And then you were injecting considerably more water at eighteen hundred pounds, and this, to me, indicates that you did have fractures.

Q. That was in -- on a tracer, yes.

Do you have any idea as to when you might complete the work or the -- that you are undertaking in the area on the other wells?

A. Well, I don't think we can put it off too long. I think Joe has already -- or Mr. Ramey already indicated at the meeting in April that it is not going to be an extending-- a-- not going to extend over a long period of time, and right now, I think maybe a third of the injection wells, and this is an estimate, have been shut in and cycled, and after that some after we get this done, I'm sure some radical steps will have to be taken at that time.

Q. You say a third of the wells have been shut in and cycled. You mean you are shutting in a few of them, and testing them, and then starting to -- letting them start up again at a later period?

A. When their pressure falls below five hundred pounds, why, then, they can start re-injecting and shut some more down.

Q. Well, have you found that their pressure is -- after it falls to five hundred pounds, is building up again?

A. No.

Q. Once you get the pressure down, it will stay there?

A. We're talking about in the injection pressures.

Q. Yeah.

A. Yes. I think that's right.

MR. JENNINGS: I believe that's all.

MR. RAMEY: Any other questions of the witness? You may be excused.

(THEREUPON, the witness was excused.)

MR. CARR: At this time I'd like to offer Oil Conservation Commission Exhibit Two, which is the log.

MR. RAMEY: You did offer one.

MR. CARR: One was previously offered.

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

(THEREUPON, Commission Exhibits 1-A, -B, -C, -D, -E, -F, -G, -H, -I, and Number Two, were duly admitted into evidence.)

MR. RAMEY: Mr. Jennings.

MR. JENNINGS: I have one witness, if it please the Commission, Mr. Abbott.

We have an exhibit here showing the whole thing, that might be helpful.

(THEREUPON, a discussion was held off the record.)

(THEREUPON, Agua Exhibits One, Two, Three and Five were duly marked for identification.)

W. G. ABBOTT

was called as a witness, and having been first duly sworn, testified upon his oath as follows, to-wit:

Q. Would you please state your name, occupation, and place of business?

A. My name is W. G. Abbott. I'm manager of Agua, Incorporated, at Hobbs, New Mexico.

Q. Mr. Abbott, have you appeared before this Commission on many occasions, including all of the cases

which have been incorporated in this record, and had your qualifications accepted?

A. Yes, sir.

MR. JENNINGS: Does the Commission desire me to further qualify Mr. Abbott?

MR. RAMEY: No. I think he's just barely qualified.

Q. (Mr. Jennings continuing.) Mr. Abbott, before we -- first, refer to what has been marked as Exhibit One, and I believe that's a map on the wall, and just identify that if you will, please?

A. Yeah. That's our Exhibit One, and it shows the line map, and the well map of the Blinebry-Drinkard salt water disposal system. There are four hundred and sixty-five producing wells tied into this disposal system that we are disposing of the salt water. The total water disposed at the present time is approximately four hundred barrels an hour.

Now if you will remember, the sequence of events, our H-35 well down here, that is the well that was shut in by order of the Commission in August of '75. At that time it was taking -- we were pumping water into the San Andres formation at the rate of about fifty-five hundred barrels a day, so with

the Commission order, we -- we had to have someplace to put that water, or it would shut down approximately two-thirds of the system, so we ran a temporary line up the so-called county road, and put a line over to our SWD C-2 well. Then we came to the Commission and got approval to perforate an additional zone in the San Andres so that this water, all the water that we are disposing in H-35, and also the C-2, would -- could be disposed in this SWD.

At the present time, ever since August, this water is being disposed in the C-2 under vacuum. If the -- if it is taking approximately, as I said, four hundred barrels an hour, vacuum, and I might point out that the well has been improving, in that we have -- previously we had had to acidize this well about once a month in order to maintain the four hundred barrels an hour by vacuum, but we -- our last acid job of the same size, by the way, we haven't had to re-acidize that well since about April 2nd, so it indicates to me a couple of things, maybe the permeability is better, or the reservoir pressure may be dropping, and it has more available head to dispose of that water by vacuum.

MR. RAMEY: You're referring to the C-2 well?

A. This is the C-2 well, yes.

Then to relieve the situation, we came down and

drilled this SWD, A-22 well.

MR. RAMEY: Which is located where, Mr. Abbott?

A. It's in the -- A-22 well is located in the unit letter A of Section 22, Township 22 South, Range 37 East. We drilled this well as a disposal well in the San Andres. We have been testing this well by hauling some water to it, and it will take approximately six to seven hundred barrels per day by gravity. We planned to use that as an injection well, but if you remember, one of the Commission hearings, and the order written from that hearing restricted our disposal to a hundred P.S.I. in the tubing. We thought that was unreasonable, since there are numerous injection wells in that area that have twelve hundred to two thousand pounds injection pressure, so we had a re-hearing, and asked that we be allowed to inject water in this well at twelve hundred P.S.I. That hearing was held over ninety days ago, and we haven't heard anything from the Commission as yet. It is a good disposal well. I say good, when you compare it with our SWD H-35, we think that it will accept the water readily, and as this the San Andres is a huge aquifer, we think that the pressure, if there is any pressure out of the tubing, we are asking for that twelve hundred pounds, will be dissipated close to the

well bore in this well. We have recently installed the surface lines to this A-22 location, some four-inch and some eight-inch lines, and we are in the process now of moving some tankage to that location, and we -- by closing valves and so on, we can divert quite a lot of water to that A-22 location.

Now, we don't want to move any injection pumps that we have located at H-35, A-22, because we don't know what pressure will be allowed by the Commission, and we are -- but we are getting ready to equip the well with -- with injection pumps. We had hoped to -- after we got this A-22, disposing of a major portion of the water, and the C-2, disposing under gravity, then we would like to be allowed to dispose in this H-35, especially from these wells that are just east of H-35.

A. I don't have any idea what the volume is, but I think it is around -- or less than a thousand barrels a day.

Q. Mr. Abbott, how is it -- would you refer to what has been marked as Exhibit Two and state to the Commission just how the H-35 well is completed?

A. Yes. You can pass it around. The H-35 well has got a nine-and-five-eighths-inch casing set at eleven hundred and eighty feet with the cement circulated to the surface of the ground. The seven-inch casing is at thirty-nine seventy-five, cemented with three hundred sacks of cement, and the calculated top of the cement is at twenty-four hundred feet.

We then have five-and-a-half-inch plastic line tubing swung in the well, and the bottom of that tubing is at thirty-nine seventy-five. There's no packer in the well, and the annulus between the tubing and the casing is loaded with refined oil of a sufficient volume to bring it down to the base of the tubing. We were injecting in the -- into the open hole zone from thirty-nine seventy-five to the plug back depth of the well at forty-nine eighteen. The injection pressure, when we shut the well down, was seventeen hundred pounds.

Q. Mr. Abbott, refer to what has been marked as exhibit -- on your Exhibit Three --

A. Yes.

Q. -- and identify that and tell what it is, and do you have any comments on it?

A. Exhibit Three is the tracer and temperature survey run by the Western Company on December 8th, 1974. This survey was run shortly after the problem area was outlined by the Conservation Commission, and we were -- at that time we were injecting into the well, so we thought we would run this survey to ascertain if all the water was going into the open hole zone, and it shows that the water, ninety-two percent of the water, was being injected below four thousand and fourteen feet, which is down into the open hole zone, and eight

percent of the water was going outright at the casing shoe of the seven-inch pipe.

Q. Mr. Abbott, referring to what has been identified as Exhibit Two, would you review that document and again identify it for the Commission?

A. Exhibit -- what?

Q. Exhibit -- Commission Exhibit Two. It is what you have marked as Exhibit Four.

A. Oh, right.

Q. But there is no need to encumber the record.

A. I didn't recognize it. This was another tracer survey run by Western Company on October 16th, 1975, and this was previously mentioned by the Conservation Commission witness, so again, it shows that the -- ninety-two percent of the water is going down into the open hole, and I had previously testified at a hearing that that ten percent was probably an eight, so it looks like there was no significant difference in the two logs that were run about a year apart, and we think that the well bore and the equipment and casing programs and the tubing are all sound in the H-35. There is no indication that there is a leak in the H-35. The pressures recorded by the Commission and by Agua personally are normal, at the present time our flowing tube pressure is four hundred

P.S.I. We are flowing the well back at the rate of about fifty barrels an hour. The pressure on the annulus, which is loaded with oil, is seven hundred and twenty P.S.I., which is normal, because oil is lighter than water, and we are compressing the oil and pushing the water down to the bottom of the hole, so that is normal. The only thing that is unusual is the pressure on the surface pipe, but that is normal for this area, in that probably eighty percent of the wells in the area have some sort of pressure on the surface pipe.

Q. Mr. Abbott, when the Commission instructed you to shut the well in on August 22nd, 1975, did they advise you that they thought that there was communication between the tubing and the casing strings in this well?

A. Yes, they did.

Q. Do these exhibits -- on your Exhibit Three and Commission Exhibit Two, tell you -- or give you any information as to whether there is or is not communication?

A. In my opinion, there is no communication in the well bore. This is also -- can be seen by the pressures in that -- with the annulus of the casing loaded with oil and a lower pressure on a surface pipe, which is indicated and has been tested that it may be gas. I don't see any way that that pressure could be maintained on the surface pipe from the

annulus of our disposal well.

Q. Have you on occasion bled the pressure off of the surface pipe?

A. Yes, we have.

Q. On what occasion and what are the results when you bled the pressure off?

A. It drops to zero. One of our last tests we ran on it was November 12th, 1975, but I was interested to see the volume of any water that came out of annulus, so I had my fieldman run a test on it, and we bled it -- he bled the surface pressure off, and we caught the water in a tank truck. It bled seven barrels of water at that time into the tank truck, and the pressure was zero. When he put the casing pressure gauge back on, well -- and shut in the casing, then it immediately started building up, which indicates to me that there was a -- pressure from an outside source, and a lot of it indicated pressure was gas pressure or air.

Q. At the time you took that -- made that test, was your H-35 shut in?

A. Yes.

Q. It has been shut in at all times since September?

A. Yes, sir.

Q. Mr. Abbott, do you have any -- as a result of

your study of this well, have you reached any -- or do you have any thoughts or conclusions as to where the water that is being -- that is causing the pressure on the surface -- what is the source of that water?

A. It is my opinion -- I'm also a member of this committee that's working on this area, and the indications are so far that the pressures on the salt section are caused by poor injection wells in the -- in these water flood units. It is true that we are shutting in -- the commission -- this committee has been recommending they shut in the wells, one injection row at a time, and observing the pressures on some observation wells to see where -- what the observation wells do, and as yet, we haven't come to the -- the well that has the leak or wells that have the leak.

Q. Mr. Abbott, refer to what you have marked as exhibit -- or we have marked as Exhibit Five and identify that, and tell what it shows, please. Do you have some more?

A. Exhibit Five is a plat of this area showing all the wells and all the injection wells, and we have showed on Exhibit Five disposal wells that are circled in blue. The wells that have the arrows pointed to them are operated by Agua, Incorporated, starting from the bottom, they are the H-35 and the A-22 and the C.T. Also shown on these -- on this

exhibit are two wells circled towards the south part of the plat, which indicate two wells that are observation wells that the committee is watching the pressures on the surface pipes to see if there are any changes as the various injection wells are shut down.

The northernmost red circle is an Armor well. It is now operated by a petrosearch concern called the Citco State Well 1-E. The initial pressure on this surface pipe --

MR. RAMEY: Would you identify or give that location, Mr. Abbott?

A. Yes.

MR. RAMEY: For the record?

A. This is located in Unit Letter E of Section 2, Township -- I think it's 23 South, Range 37 East. Now the -- evidently that well broke through -- I say broke through, it was a pumping well, and evidently the pressures suddenly zoomed up on the tubing casing annulus to eleven hundred and fifty P.S.I. Now this happened probably four or five months ago. This pressure at the present time shut in is eleven hundred and forty P.S.I. Now if your -- our Agua H-35 well has been shut in since September of '75, and I don't think there's -- I think the pressures shown by this petrosearch Citco State are coming from evidently an injection well and a

water flood unit. The southernmost well is another well that recently blew -- that recently experienced pressure on the casing annulus. I can't -- I don't know if this was on the surface pipe or not. But I think it was. The surface pipe was open in the well, and the pumper driving around the field back in June noticed a gusher of water shooting up in the air, and it evidently was just coming out of this open valve, so it means that the water either just -- the pressure in the salt section just migrated to that well, or something happened to change it, and at the present time there's three hundred P.S.I. on that well. So those two wells are being used as observation wells by this committee to see if by shutting in injection wells there will be any changes in these pressures.

I wanted to point that out, because I think it is pertinent to this area.

MR. RAMEY: Why don't we come back at one-thirty?

(THEREUPON, the proceedings stood in noon recess.)

MR. RAMEY: The hearing will come to order.

Mr. Jennings, will you continue with your witness, please?

MR. JENNINGS: Yes, sir.

Q. Mr. Abbott, has the shutting in of the H-35

solved the problems in the problem area in Township 22 South, Range 37 East?

A. No, sir. Shutting down the SWD, H-35, hasn't solved any pressure problems in the same salt stream in that area.

Q. Mr. Abbott, have you had occasion to have saline or other type of water tests made on the water produced or injected into the H-35 well?

A. Yes. We have a couple of tests, back in November 21st, 1974, we had a water analysis run by Halliburton Division Laboratory, and the water analysis at that time for water being injected into our SWD, H-35, shows the chlorides to be thirty-four thousand parts per million. Then since we have been flowing the H-35 well back, and have been for six months, I wanted to get another analysis of the water flowing back out of the San Andres to see if the water had changed any, and we had an analysis run by United Chemical Corporation at Hobbs, April 3rd, 1976, and it shows chlorides to be flowing back out of the well at thirty-two thousand eight hundred. I consider that the same analysis of the water flowing back as the water would put in the well. It's previously been testified that the analysis run by John Runyon with the Commission on August 14th, 1975, of water flowed back from the surface pipe,

this H-35 well, shows analysis of a hundred and eighty-eight thousand eight hundred and sixty parts per million chlorides.

Q. What conclusion do you draw from that?

A. Well, there doesn't seem to be any commingling of the disposal water in the H-35, and the water that is present in the salt stream of this well.

Q. Mr. Abbott, do you have any idea how long it would take you to completely reduce the pressure? We have spoken of zero zero zero here in that well.

A. No. I have no idea, in that we are limited by facilities to dispose of the water. That is the big problem. We are flowing it back to fifty barrels an hour. If we could flow the well back at a greater rate, we could reduce the pressure sooner, but we are limited, because the SWD, C-2 is the only disposal well left that we have, and we can't crowd that well or it will overflow.

Q. What is the capacity of your line from H-35 to the C-2?

A. It's around ninety-three hundred barrels an hour.

Q. Are your pumps capable of pumping that much water from the H-35 to the C-2?

A. Yes, sir.

Q. Mr. Abbott, it has been suggested that the problem

could be remedied by perforating the seven-inch casing and filling that interval. Is that possible?

A. It is possible, but at the present time I think in that whole area it is best to keep the observation point on all the wells available to see what the pressures are doing in this so-called salt section. If you perforate the seven-inch and squeeze the well with cement, and provided you get a good squeeze job, and circulate the cement up into the annular space, outside of -- the seven-inch and up into the annular space between the seven-inch and the nine, five, you will lose any observation of the pressures in that salt section, besides, we can even the well by the perforations. I don't think you are much in danger of corroding the casing with that high salinity salt water. I think it would be much worse if you had produced brine from the San Andres in that position, and I think it would be better to leave it open the way it is until the whole area is remedied and the pressure bled down in the salt section.

Q. Well, what recommendation do you have to make to the Commission at this time?

A. I recommend that -- one, that they don't require us to perforate the well and try to repair it at this time. And, two, to allow us to inject water probably at a limited volume at the time that we need it. Now I don't know when

that will be. It's according to when the Commission writes the order on SWD, A-22, and we get that well equipped, and some pump -- some more pumps at H-35 to kick some more water up to A-22, and at the end of that period, well, then, we will know how much water we will need to dispose of in this H-35.

Q. Mr. Abbott --

MR. JENNINGS: I believe that's all.

I would offer the Exhibits One, Two, Three and Five.

Mr. Abbott, were Exhibits One, Two, Three and Five prepared by you or by a service company?

A. Yes, sir.

MR. JENNINGS: We would offer Exhibits Numbered One, Two, Three and Five.

MR. RAMEY: Without objection, these will be admitted.

(THEREUPON, Agua Exhibits One, Two, Three and Five were duly admitted into evidence.)

MR. RAMEY: Mr. Abbott, when you shut in the H-35 which was back in September of '75, as I understand, what was the shut in pressure at that time?

A. I think it was in excess of fourteen

hundred pounds on the tubing. It was -- of course, right after injection, I imagine that it dropped off a little bit to sixteen hundred pounds, but it eventually came down to about fourteen hundred.

MR. RAMEY: And what is the shut in pressure? Do you have any idea?

A. No. We haven't shut in the well since we have been flowing it back steady. The flowing pressure is four hundred pounds, and I imagine the shut in would be around six hundred.

MR. RAMEY: I note on here on your Exhibit Number Three, under "remarks," on the portion here where it shows the temperature tool --

A. Yes, sir.

MR. RAMEY: -- it says temperature survey was run to determine channeling and casing shoe, due to large amount of fluid in hole, no conclusion could be drawn.

A. Uh-huh.

MR. RAMEY: Does that mean that they -- as I take it, that they could make no determination whether there was channeling or no channeling at the shoe?

A. That's with the temperature survey, yes. They couldn't make a determination, because we are -- couldn't

shut in the well long enough to get a base line for the temperature survey, and that the well was being used for injection.

MR. RAMEY: Yeah. But you did have eight percent of your water going out right at the shoe of your seven-inch on the well?

A. Yes, and the remainder going out into the open hole. Now that was recorded by -- with the tracer survey, radioactive tracer.

MR. RAMEY: Now have you made a study of, say, wells within a mile of the H-35?

A. No, sir. We haven't made any recent studies.

MR. RAMEY: So you don't know whether wells that have been plugged in the area are adequately plugged to contain water in the San Andres?

A. No, sir.

MR. RAMEY: And you don't know whether producing wells are -- have adequate cement on their casing strings to cover the San Andres?

A. No, sir.

MR. RAMEY: If, say, this Humble Boyd well which is in Unit J, of Section 35, what I assume is twenty-two, thirty-seven, if -- well, that seems to be a shallow well.

Forget that.

A. Okay.

MR. RAMEY: Well, let's drop that question. If wells, say, within a mile of your H-35 were not adequately plugged or were not adequately cemented, is there any way that you could assure this Commission that water put into the San Andres and the H-35 would stay in the San Andres?

A. No. You'd assume that the operators of those wells, if they are -- if they were having any difficulty, would do some remedial work.

MR. RAMEY: So you could not -- you could not assure this Commission that water injected into the H-35 in the San Andres would stay in the San Andres?

A. No, sir.

MR. RAMEY: So then it possibly could migrate to, say, the salt section or shallower horizons?

A. Right.

MR. RAMEY: Perhaps even into fresh water in an inadequately plugged well?

A. If it were improperly plugged, yes, sir.

MR. RAMEY: Do you know what the chloride content of the San Andres water is in this area or was in the area previous to any injection?

A. Let's see, I can't remember if we had taken any analysis back at that time or not. November of '74 is the earliest that I have at this time.

MR. RAMEY: That is on your injected water, but you don't have any idea what the --

A. No, sir.

MR. RAMEY: -- the nature of the water in the San Andres was previous to any --

A. No.

MR. RAMEY: -- objection -- injection of that?

A. No. Huh-uh.

MR. RAMEY: Any other questions of the witness? Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Abbott, in your closing remarks there during your direct testimony, you stated that you hoped that the Commission would not require you to repair this well at this time. What did you mean by that?

A. Well, I think it is more valuable to leave an observation point on the surface pipe to observe the pressures than to squeeze the well off and lose that observation point, and also, we feel that having eleven hundred and eighty feet

of nine-and-five-eighths casing, surface casing in this well circulated to the surface, there is no danger of any waters getting into the fresh water zone at three hundred feet.

Q. And then you further went on to say that you hoped the Commission would authorize the use of the well as you needed it?

A. Yes, sir.

Q. So, in other words, what you're proposing is that you would not make any attempt to shut off any flow into the surface pipe, but that you would resume disposal into the well?

A. Yes, sir.

Q. This then will be contrary to your statement on pages sixty-two and sixty-three of the transcript of the hearing on November 19th, when you said that you be allowed to repair the well when we are able to, and resume a limited amount of injection into the well, I say limited, of approximately a thousand barrels a day, and then you further described on the next page the method in which you would make the repair, as soon as the pressure is -- quoting, "As soon as the pressure is let off our well, so we can pull the tubing and we can perforate the seven-inch, and circulate cement behind the seven-inch, up into the surface pipe, at eleven hundred and

seventy feet, eleven eighty feet."

A. Yes, sir. Well, my opinion has changed since that time, because of the difficulties in the area, and also the difficulties the operators that have attempted this, the troubles they have had, and I think that the Commission would be wiser to hold off on any squeeze jobs of these wells, and just observe the pressures so that we can tell what is happening to the pressure in the salt section.

Q. Well, the "We are not going to repair any wells and we are just going to observe the pressures that are in the salt section," wouldn't it be better to discontinue injection below the salt section where the water coming from that is going into the salt?"

A. I don't know if that -- if that's even the case, Dan. There may be some injection wells that have a hole in the tube and a hole in the casing, and it is being injected straight into the salt section. I don't know if it is a roundabout method. I think we will find out in time, because this committee is shutting in the wells, and eventually we are going to shut in the right well or wells, and we will find the culprits.

Q. Now you are saying that you don't know what is causing it, either. You are the third guy today that's

going to be a millionaire if you figure out how, right?

A. Right.

MR. NUTTER: I will add myself to that and there will be four of us. Thank you.

MR. RAMEY: Mr. Abbott, let's make some assumptions here. Let's assume the worse, that all of the shutting in of the injection wells on these water floods does not solve the problem, and the Commission of necessity may at that time say there will be no more injection in this area. Do you think that disposal wells should be included into this lumping of injection wells?

A. Well, of course, your assumption, I think will find the problem, if we don't find it by shutting in the wells we will find it, but when we flow back some of these observation wells at a high rate, and observe some pressures. I don't think we have exhausted our methods on this committee to find the problem, but if you shut in the -- all the injection wells, I wouldn't object to shutting in the H-35.

MR. RAMEY: What about the A-22, say, if we authorized up to twelve hundred pounds on that, would you --

A. No. That well, I think, is a very good well, and I believe that any pressures observed on the A-22 well are around the well bore, and they will dissipate into the

reservoir.

MR. RAMEY: What would you consider the fracture pressure of the San Andres to be in this area?

A. I would be in favor of allowing an injection gradient of one P.S.I. per foot. I notice the Commission has written two or three orders recently on disposal wells, not injection wells, but disposal wells of seven-tenths of a pound per foot, which means that you are actually allowing two-tenths of P.S.I. per foot of surface pressure, so a well four thousand feet deep, that -- you'd only allow eight hundred pounds. Now I don't think that's enough in the -- in the formations we have in Lea County.

MR. RAMEY: I don't think you answered my question. Do you know what the fracture pressure is of the San Andres in this area --

A. No.

MR. RAMEY: -- from your experience with treating your wells, injection wells?

A. I believe it is around eighteen hundred pounds. I'm not sure.

MR. RAMEY: Any further questions of the witness?

MR. JENNINGS: Just one question.

REDIRECT EXAMINATION

BY MR. JENNINGS:

Q. Mr. Abbott, Mr. Ramey asked you if water injected in the San Andres formation in your well might not reach back through fractures and otherwise up into the shallower zones, and I think you answered it would. Would the same be true of water injected at the for -- for water flood purposes into the Queen formation?

A. Yes, sir. In fact, the pressures in the water injection wells are higher than the -- any injection pressures we have had in the disposal wells, and they are also shallower formations.

MR. JENNINGS: That's all.

MR. RAMEY: One other question. You have heard of the Federal E.P.A. Underground Injection Control Program --

A. Yes, sir.

MR. RAMEY: -- which says that within a five-year period the director of the state agency, if they are so designated, must review all injection projects, and including disposal wells, and part of this review would be to -- that we could be assured that water injected into a definite horizon is going to stay there?

A. Yes.

MR. RAMEY: Do you think that the director of the New Mexico state program could approve your well if you could make no assurance that the water was going to stay in the San Andres formation?

A. Well, of course, they write these government regulations that put the burden of proof on the operator when they don't have any proof that anything has happened to the contrary, and I don't think you could -- we could assure them that the water would stay in the San Andres, because there are too many wells in the area, but I think by observing producing wells in the area that we can find out any problems as they arise.

MR. RAMEY: And then when the problem arises such as flows in the salt section, we find it impossible to adequately repair these wells?

A. Well, I don't think it is impossible to repair, but I don't think the problems we are running into in this area are new to the oil industry. I think the Railroad Commission of Texas has run into problems, and they have solved them. I think we should study the whole picture to see how they did it.

MR. RAMEY: Thank you, Mr. Abbott.

Any other questions?

You may be excused.

(THEREUPON, the witness was excused.)

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

MR. RAMEY: Mr. Carr, do you have anything else?

MR. CARR: Nothing further.

MR. RAMEY: The Commission will -- if there's nothing further that anybody wants to add to this case, the Commission will take the case under advisement.

(THEREUPON, the proceedings were concluded.)

HOWARD W. HENRY & COMPANY
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601 Tijeras, N.W.
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Phone 247-2224

REPORTER'S CERTIFICATE

I, Linda Malone, a Court Reporter for the firm of HOWARD W. HENRY & COMPANY, do hereby certify that I reported the foregoing case in Stenographic Shorthand and transcribed, or had the same transcribed under my supervision and direction; and that the same is a true and correct record of the proceedings had at that time and place.

I further certify that I am not employed by any of the parties to this action or attorneys appearing herein, and that I have no financial interest in the outcome of this case.

WITNESS my hand this 5th day of August, 1976, at my offices in Albuquerque, New Mexico.

Linda Malone
Court Reporter

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I N D E X

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I N D E X (Continued)

E X H I B I T S

Commission Exhibits:	Marked	Admitted
1-A. field trip report	3	68
1-B. a Bradenhead survey	3	68
1-C. a water sample	3	68
1-D. document	3	68
1-E. document	3	68
1-F. field trip report	3	68
1-G. field trip report	3	68
1-H. field trip report	3	68
1-I. field trip report	3	68
2. document	3	68

E X H I B I T S

Agua Exhibits:	Marked	Admitted
1. a map	68	83
2. document	68	83
3. tracer and temperature survey	68	83
5. document	68	83

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

November 10, 1976

Mr. James T. Jennings
Jennings, Christy & Copple
1012 Security National Bank Bldg.
P. O. Box 1180
Roswell, New Mexico 88201

Re: Case No. 5713

Dear Mr. Jennings:

An order has not yet been entered concerning the Agua, Inc. M-35 well. When it is, I will be certain that you are sent a copy.

Very truly yours,

LYNN TESCHENDORF
General Counsel

LT/dr

LAW OFFICES OF
JENNINGS, CHRISTY & COPPLE
1012 SECURITY NATIONAL BANK BUILDING
P O BOX 1180
ROSWELL, NEW MEXICO 88201

JAMES T. JENNINGS
SIM B. CHRISTY IV
BRIAN W. COPPLE
ROBERT G. ARMSTRONG

TELEPHONE 622-8432
AREA CODE 505

November 9, 1976

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

Attention: Joe D. Ramey, Secretary-Director or
Lynn Teschendorf, General Counsel

RE: CASE NO. 5713

Gentlemen:

A hearing was held on the above case in connection with the Agua, Inc. H-35 Well on July 14, 1976. If the Commission ever entered an Order pursuant to this hearing, we have not received our copy or we have misplaced it. Please advise the status of this matter or if an Order has been entered, please forward us a copy.

Yours very truly,

James T. Jennings

JAMES T. JENNINGS m.b.

JTJ/mb

cc: Agua, Inc.

AGUA -- H-35 Disposal Well

I would recommend additional water not be injected into the H-35 well for the following reasons:

1. The area has as yet not been proven stable.

   A. In the last several months Skelly has had an injection well pressure up (Les has data on this)

   B. Gulf has had a workover which cost in excess of $150,000.00 which was directly due to this pressured up area. Continental also has had an expensive workover. At the present time there are 5 wells which are being used as monitor wells which if the wells were perforated and cement circulated from the top of the salt to the surface it would be expected to cost from $100,000.00 per job up.

   C. Even if Agua now injects below fracture pressure there is a question on whether the fractures created in prior injection would close. Flow back test indicates to me the fractures have not closed. Did the natural permeability have this capacity?

   D. Even if tracer logs show water is being injected in the San Andres zones (which from the logs I have seen is probably correct) it is not possible to say it is confined to the San Andres formation some distance from the wellbore. For this reason, the response of the injection pressure to the pressure on the casing would not show a direct communication.

   E. The Industry Committee,of which Agua is a member, has as of this date not come up with a solution to the problem.

   F. Where Skelly and Anadarko are injecting over large areas, if one well is bleeding off into the salt section it would not have the same effect as injecting 10,000 BPD into one well.

   G. If, at a future date, the problem in the area has been located as to a source and has been corrected, then injection into the area can then be considered.

Jerry Sexton
Supervisor, District I
July 12, 1976

NEW MEXICO OIL CONSERVATION COMMISSION
CASING -- BRADENHEAD TEST

SWD

Operator Aqua, Inc.
Lease Name Blinebry-Drinkard SWD Pool San Andres-Disposal
Well Number #11-35 Unit Letter H Section 35 Township 22 Range 37

Test Date: Aug 14, 1975 Time & Place Well

CASING STRING	Size	Set At	Cemented	Pressure	Remarks	1975
SURFACE	9 5/8"	1180'	440	925#	Bled down in [illegible] Pressure [illegible]	[illegible] salt water
INTERMEDIATE	—	—	—		[illegible]	
PRODUCTION	7"	3975'	300	1700#	[illegible]	
TUBING	5 1/2"	3925'	---	1650#	(1840)	

Test Date: Time & Place

CASING STRING	Size	Set At	Cemented	Pressure	Remarks	19
SURFACE						
INTERMEDIATE						
PRODUCTION						
TUBING						

Test Date: Time & Place

CASING STRING	Size	Set At	Cemented	Pressure	Remarks	19
SURFACE						
INTERMEDIATE						
PRODUCTION						
TUBING						

Test Date: Time & Place

CASING STRING	Size	Set At	Cemented	Pressure	Remarks	19
SURFACE						
INTERMEDIATE						
PRODUCTION						
TUBING						

DRY HOLE CHECK

Name: Nathan E Mogg Date: July 9, 1976

Milage - Start: 5471 Return: 5535 Total: 64 Time-Start: 1:00 Pm Return: 4:00 Pm

Location	Company	Well-Lease	Remarks:
H-35-22-37	AGUA	Well # H-35	From Hobbs Blinebry Drinkard SWD System To Check Pressures
			Surf 350# Csg 725# Tub 360#
			2:45 Pm

Additional Remarks:

NEW MEXICO OIL CONSERVATION COMMISSION
Hobbs, New Mexico

WATER ANALYSIS

Well Ownership: AGUA, INC. Well No. H-35

Land Status: ☐ State ☐ Federal ☐ Fee

Well Location: Unit H, Section 35, T. 22 S - R 37 E SWD #H-35

Sample taken from surface casing annulus.

Type Well: Salt water disposal Depth: ____ feet.

Well Use: Disposal of produced oilfield brine

Sample Number: #1 Date Taken: August ~~14~~ 15, 1975
(Nathan Clegg)

Specific Conductance: _____ m/n

Total dissolved Solids: _____ PPM.

Chlorides: 188,860 PPM.

Sulfates: _____ PPM.

Ortho-phosphates: ☐ V. low ☐ Low ☐ Med. ☐ High

Sulfides: ☐ None ☒ Low ☐ Med. ☐ High

_____ : _____

Date Analized: August 15, 1975 By: John W. Runyan
N.M.O.C.C.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. _____ Exhibit No. _____
Submitted by _____
Hearing Date _____

Remarks: * Super saturated salt water, main source is probably from salt section.

Queen water averages from 140,000 to 170,000 ppm

Grayburg water ranges from 51,000 to 88,000 ppm.

Sample has an odor and has small amount of oil in sample, color blue/black.

Test: 1 ml sample = 53.2 silver nitrate x 3550.0 factor = 188,860 ppm

NEW MEXICO OIL CONSERVATION COMMISSION
Hobbs, New Mexico

WATER ANALYSIS

Well Ownership: AGUA, INC. Well No. H-35

Land Status: ☐ State ☐ Federal ☐ Fee

Well Location: Unit H, Section 35, T 22 S - R 37 E

Type Well: WATER INJECTION Depth: ____ feet.

Well Use: SWD

Sample Number: #1 Date Taken: 18 Aug. 20, 1975

BY: Nathan Clegg

Specific Conductance: ____ m/

Total dissolved Solids: ____ PPM.

Chlorides: 32,660 PPM.

Sulfates: ____ PPM.

Ortho-phosphates: ☐ V. low ☐ Low ☐ Med. ☐ High

Sulfides: ☐ None ☐ Low ☒ Med. ☐ High

____ : ____

Date Analized: 8-21-75 By: John W. Runyan
N.M.O.C.C.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5715 Exhibit No. 1-F
Submitted by OCC
Hearing Date 9-11-76

Remarks:

Sample taken from incoming line into storage tank at SWD station.

1 ml Sample = 9.2 silver nitrate x 3550.0 factor = 32,660 ppm

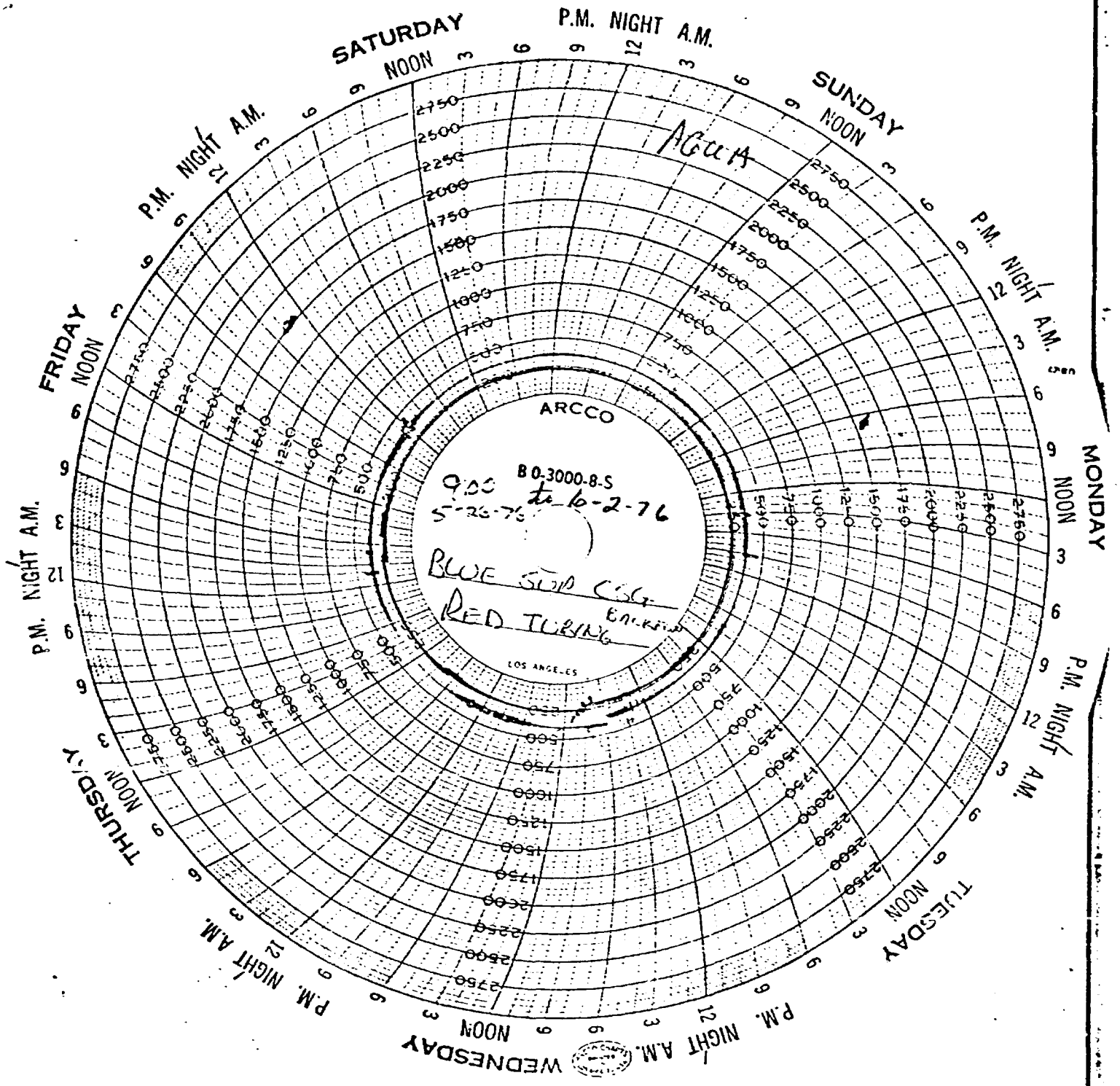
DRY HOLE CHECK

Name: Nathan E Rigg Date: July 9, 1976

Milage - Start: 5471 Return: 5535 Total: 64 Time-Start: 1:00 Pm Return: 4:00 Pm

Location	Company	Well-Lease	Remarks:
H-35-22-37	AGUA	Well # H-35	From Hobbs Blinebry Drinkard S.W.D
			System To Check Pressures
			Surf 350# Csg 725# Tub 360#
			2:45 Pm

Additional Remarks: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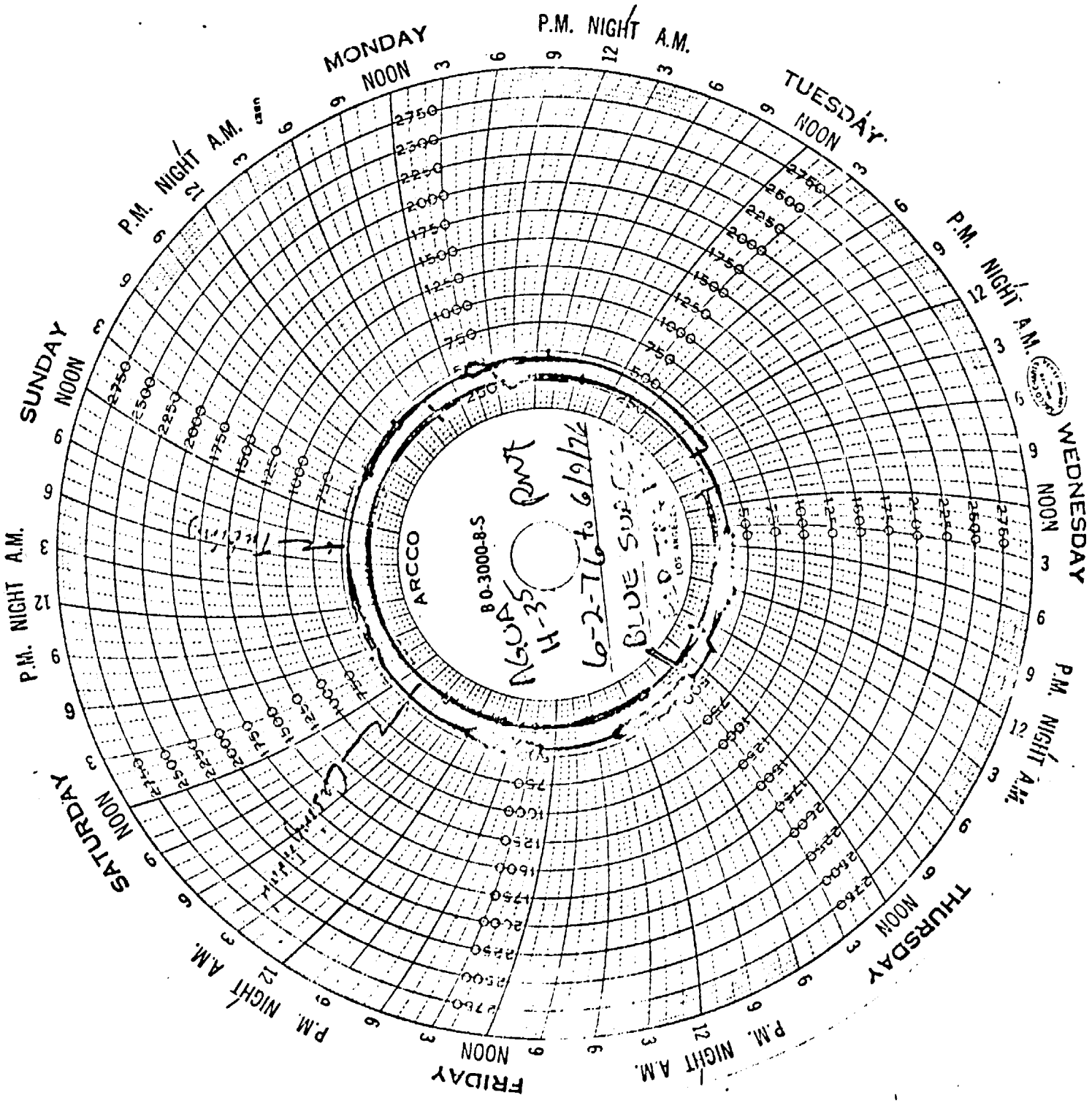
5-26-76
to 6-2-76
BLUE SUP CSG
RED TUBING
LOS ANGELES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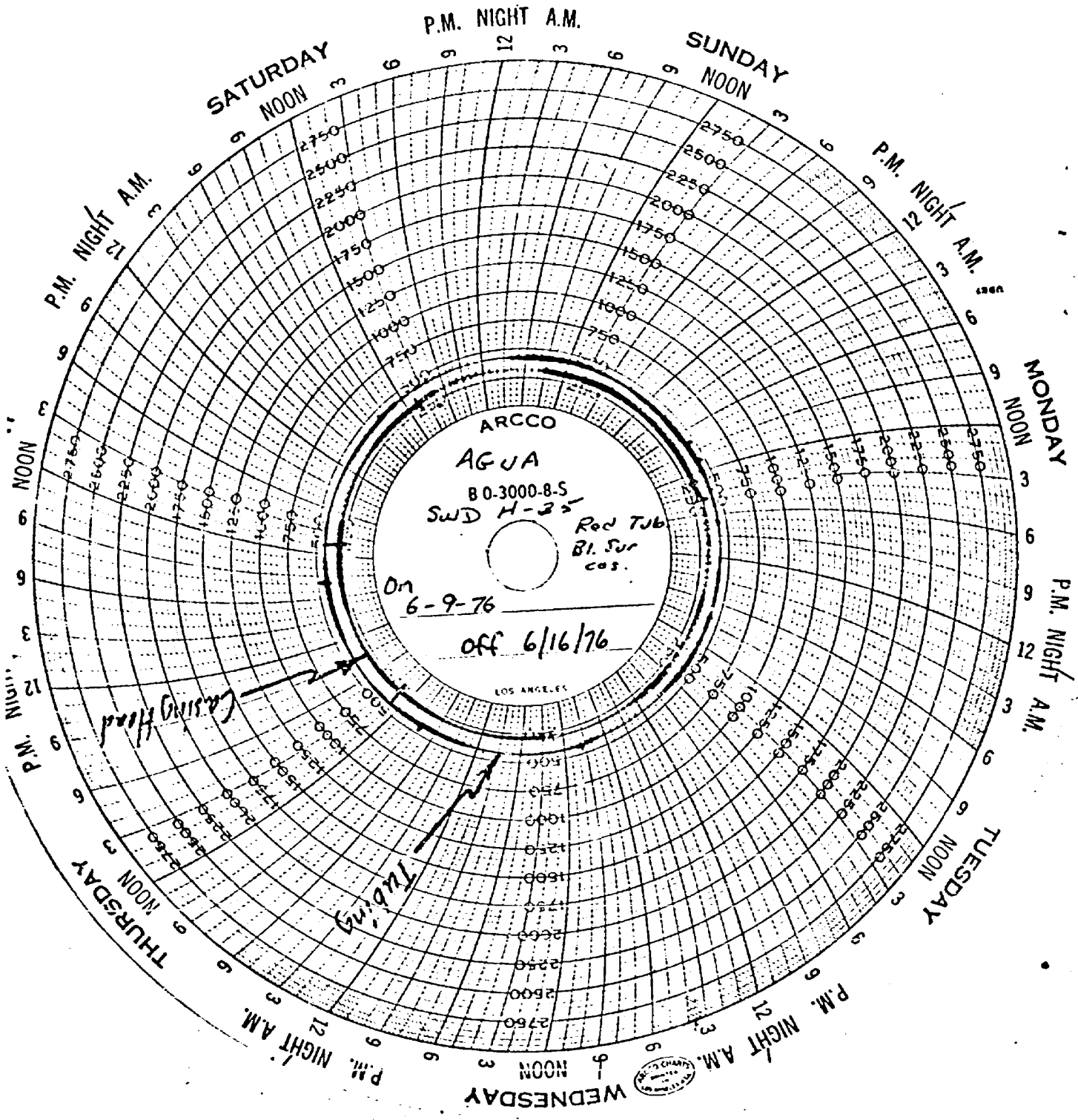
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Tubing
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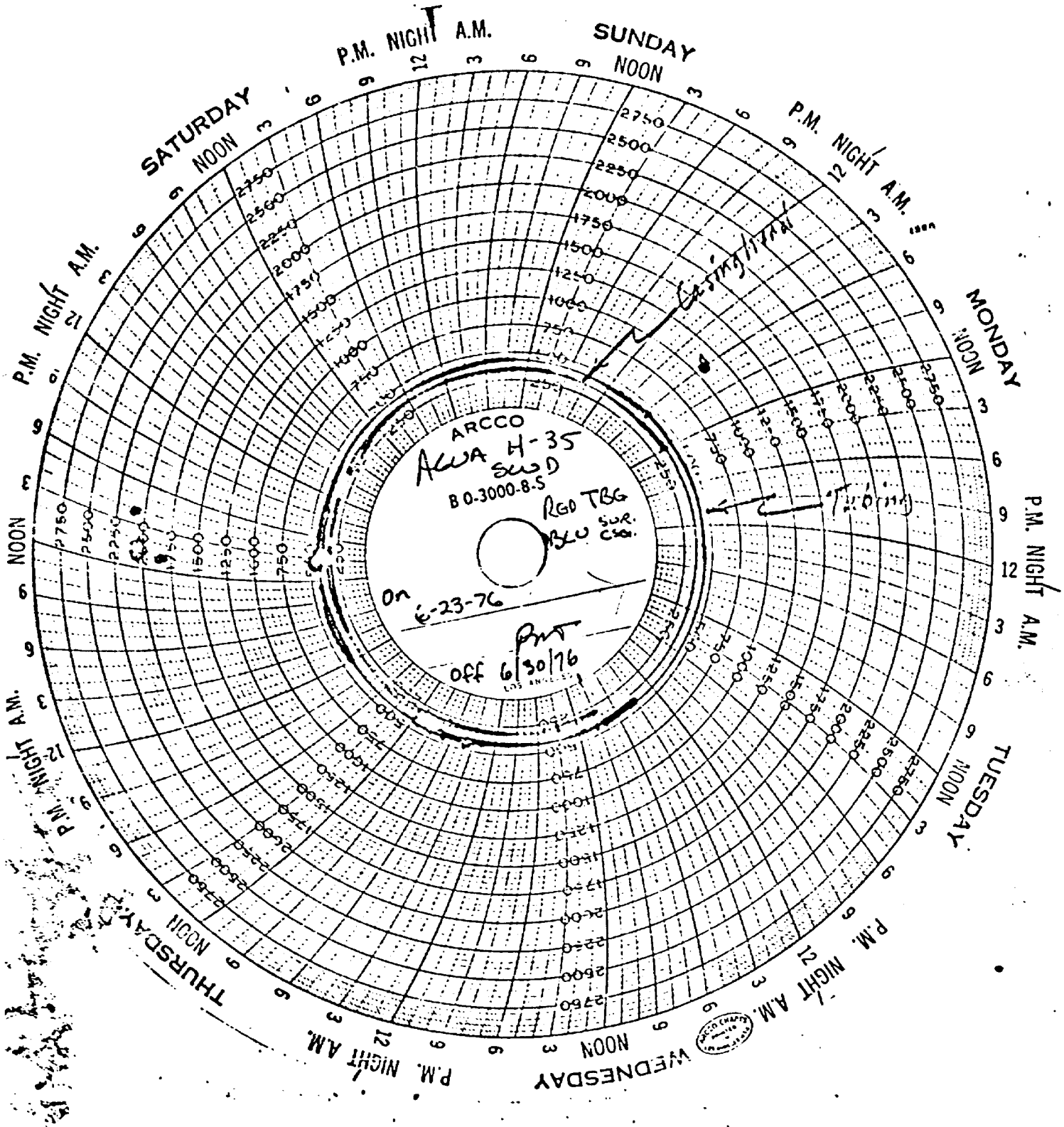
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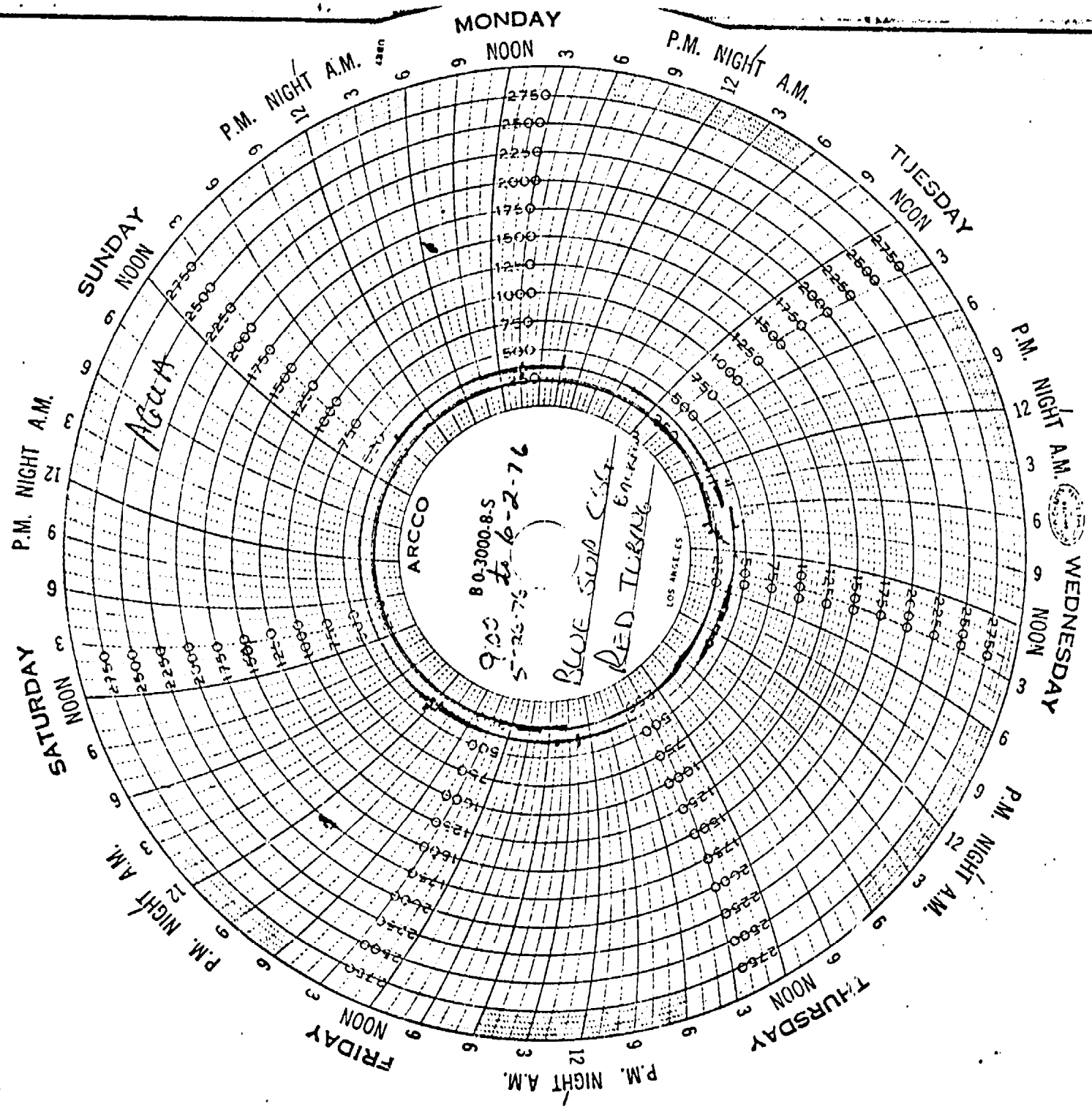
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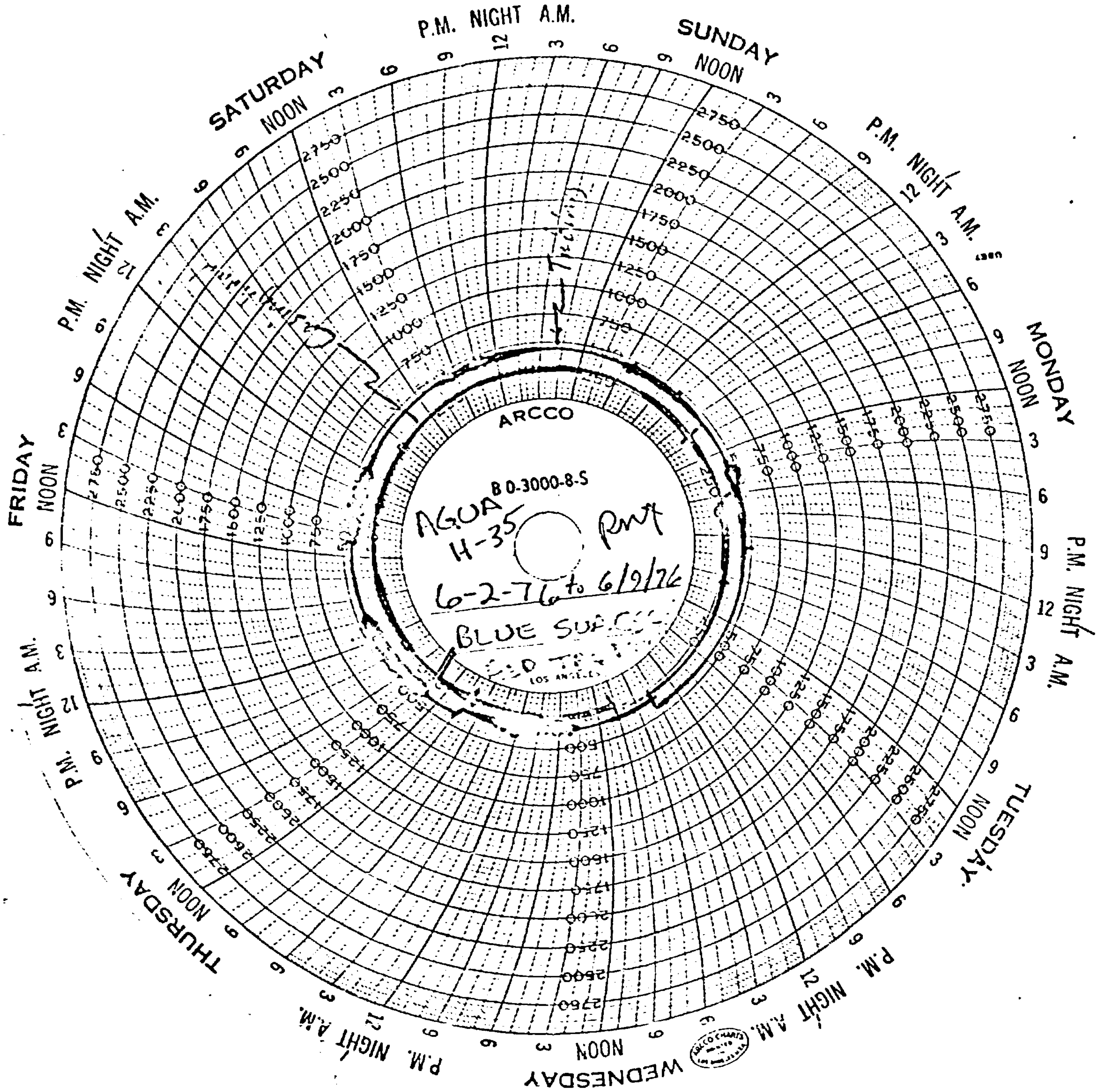
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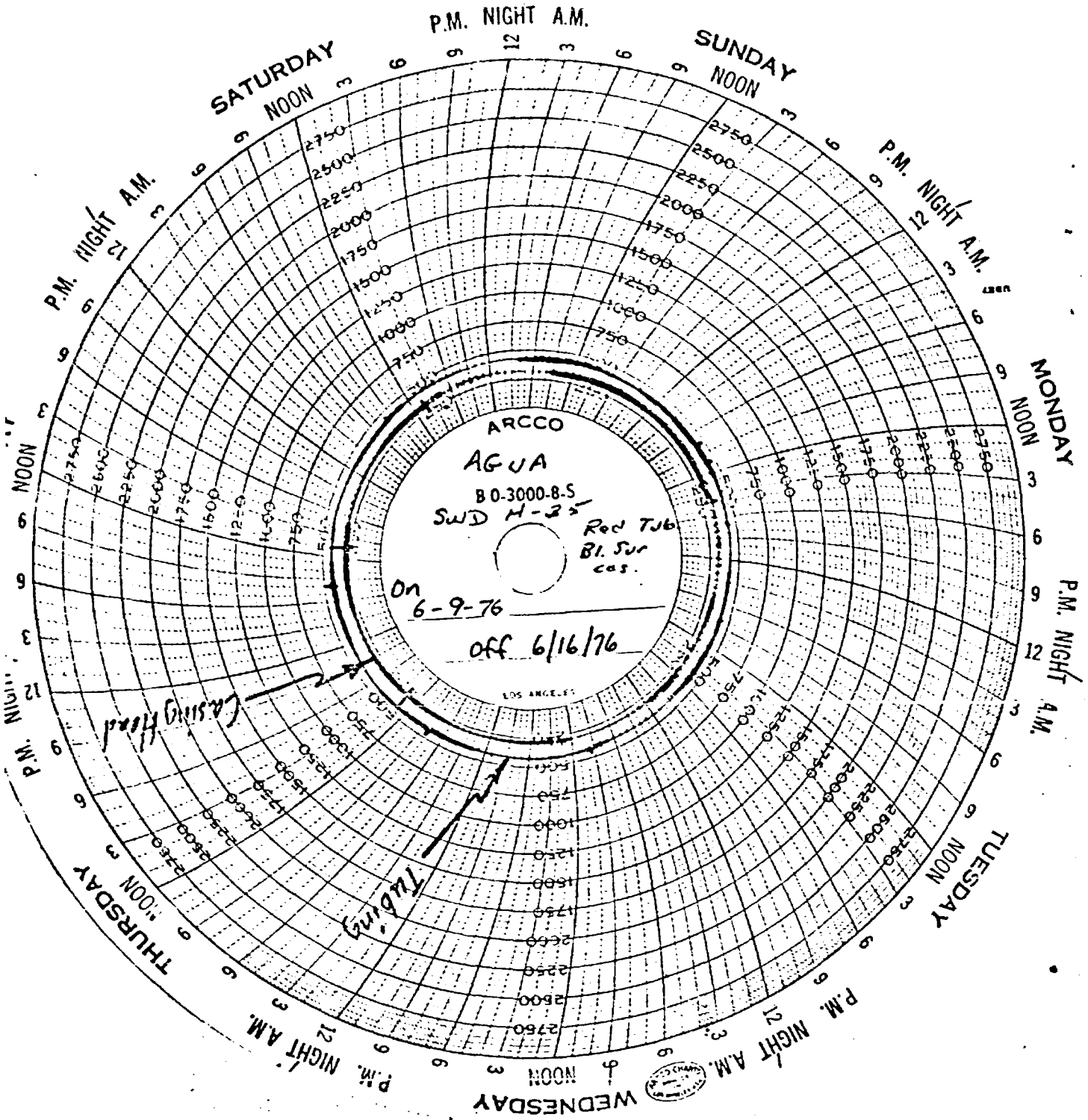
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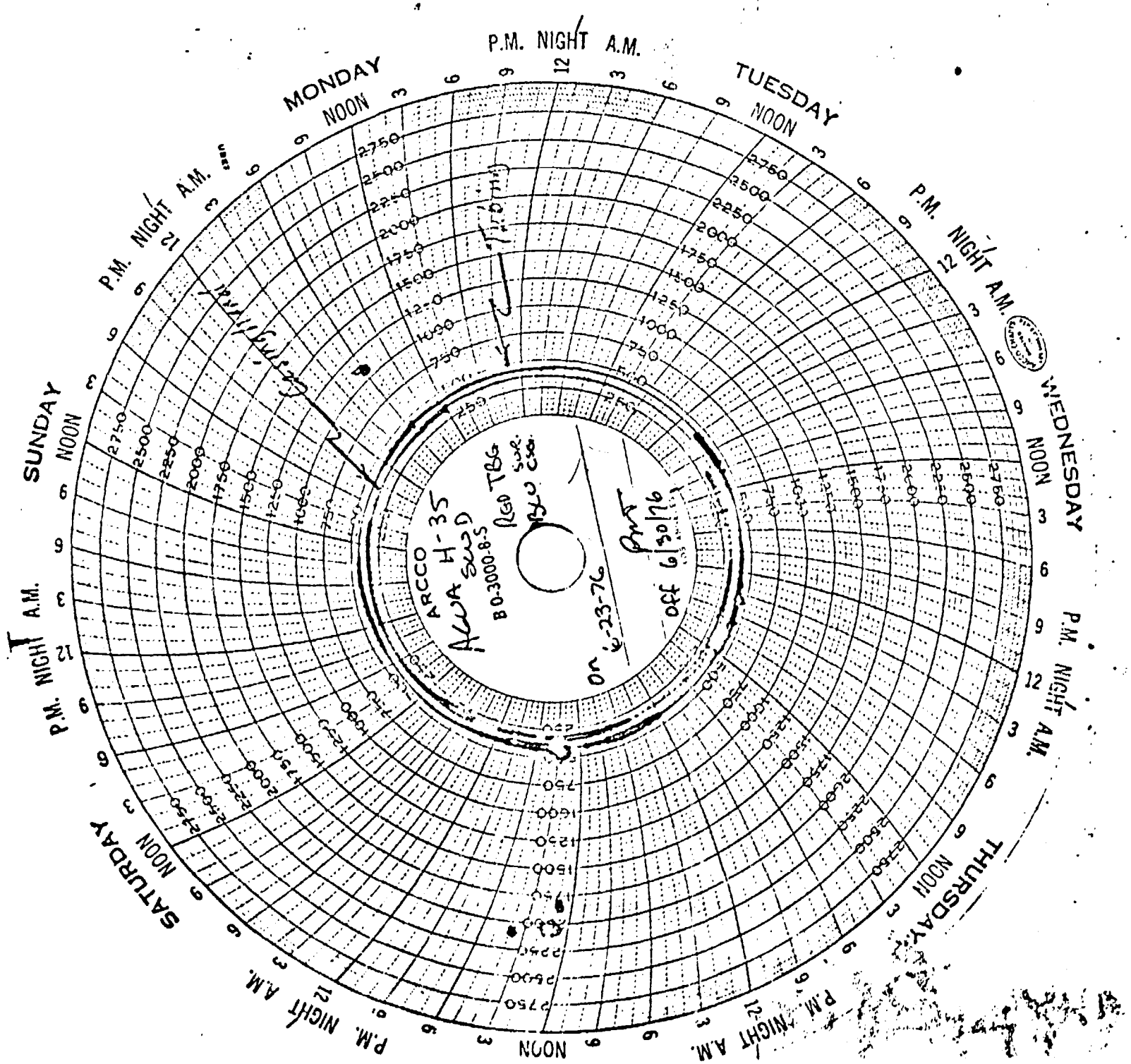
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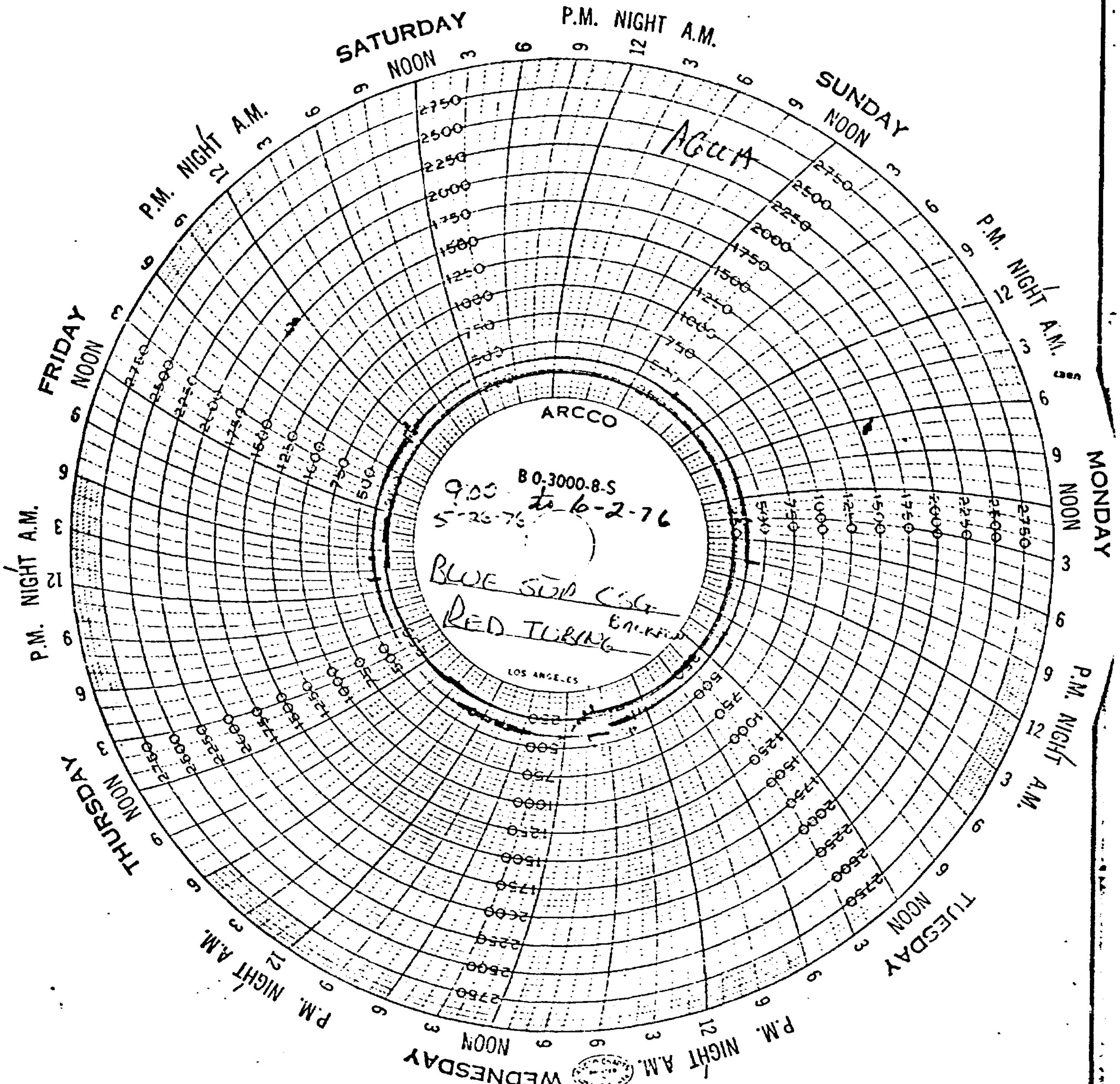
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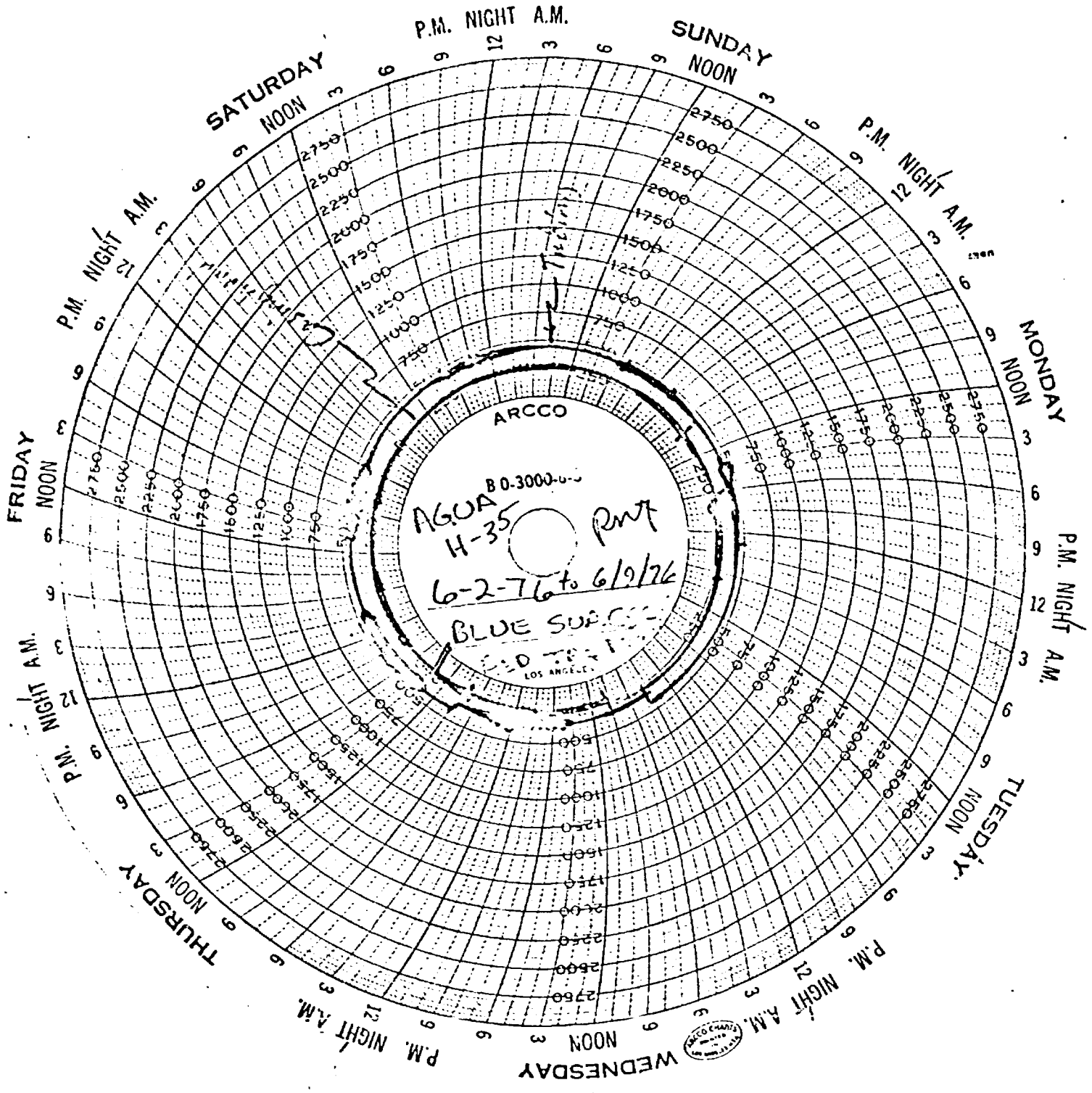
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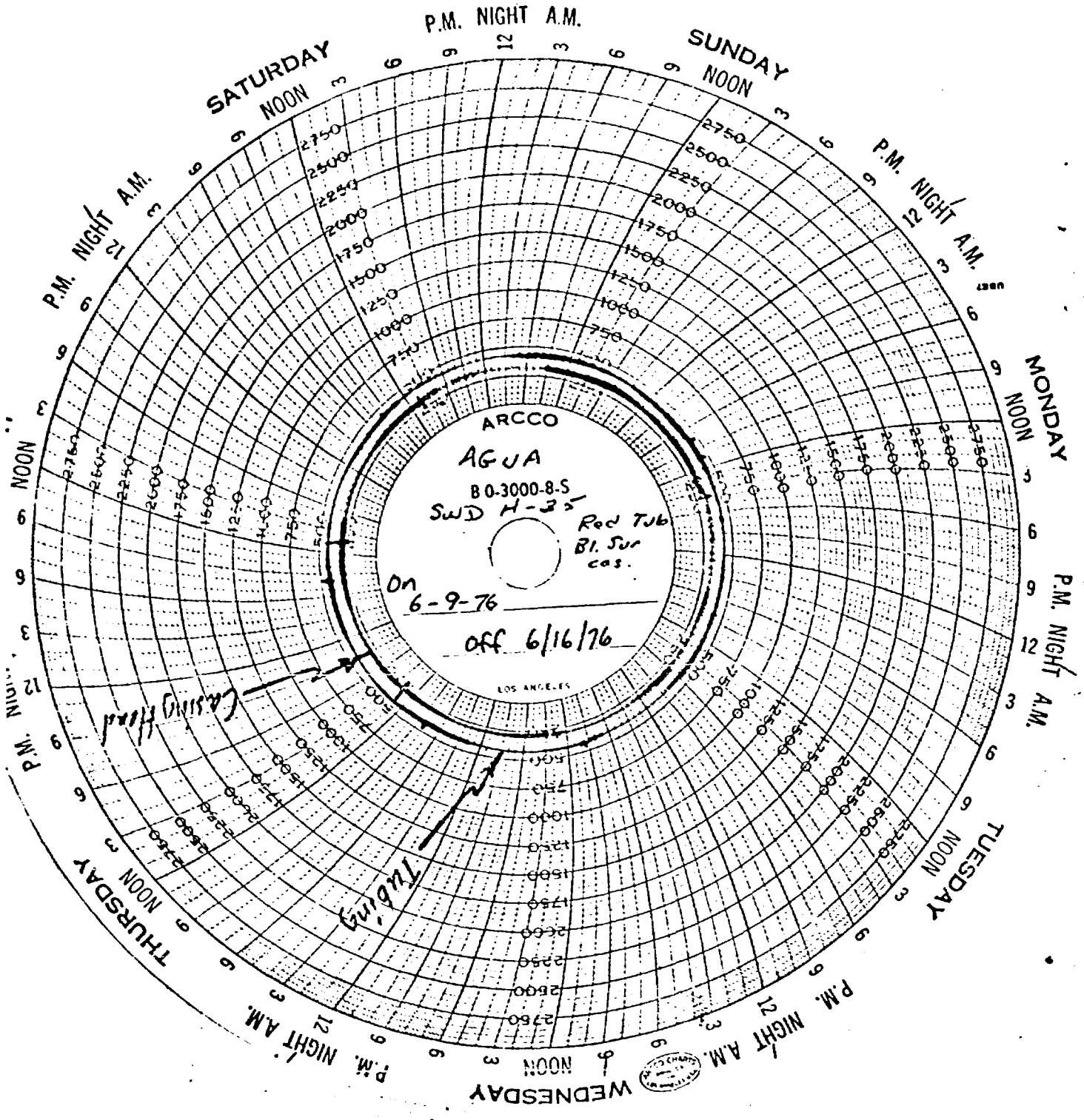
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Casing filled
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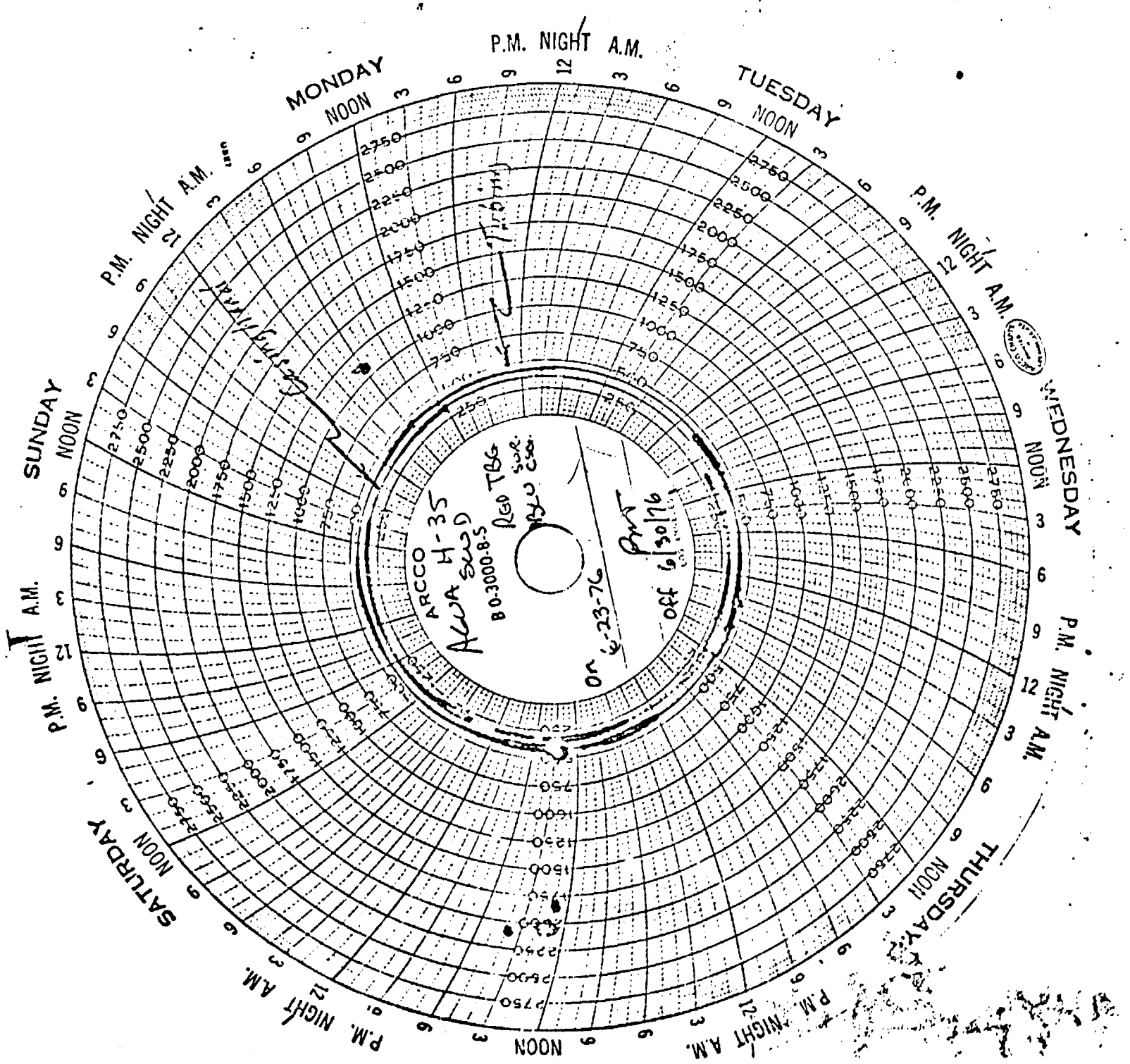
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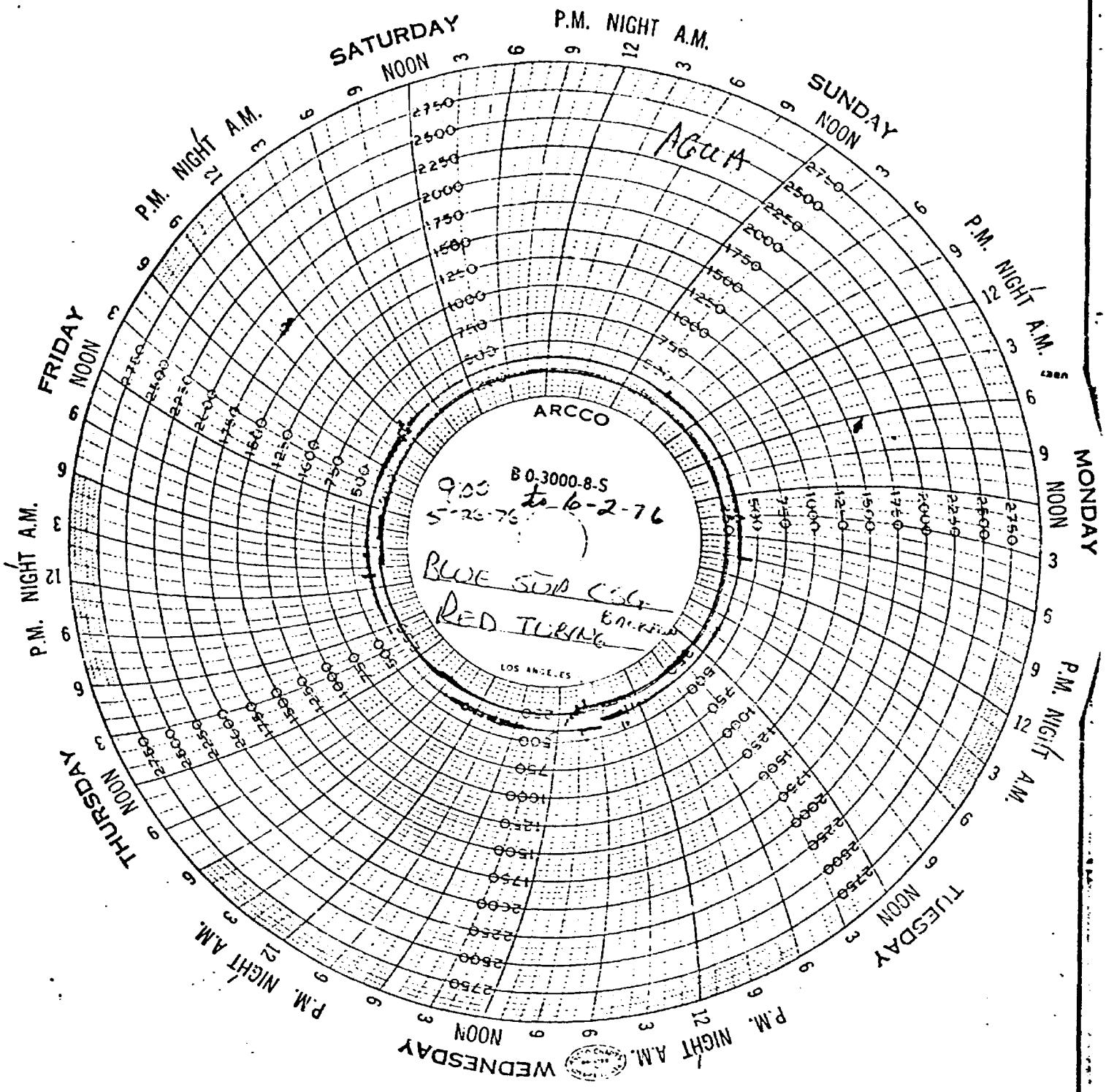
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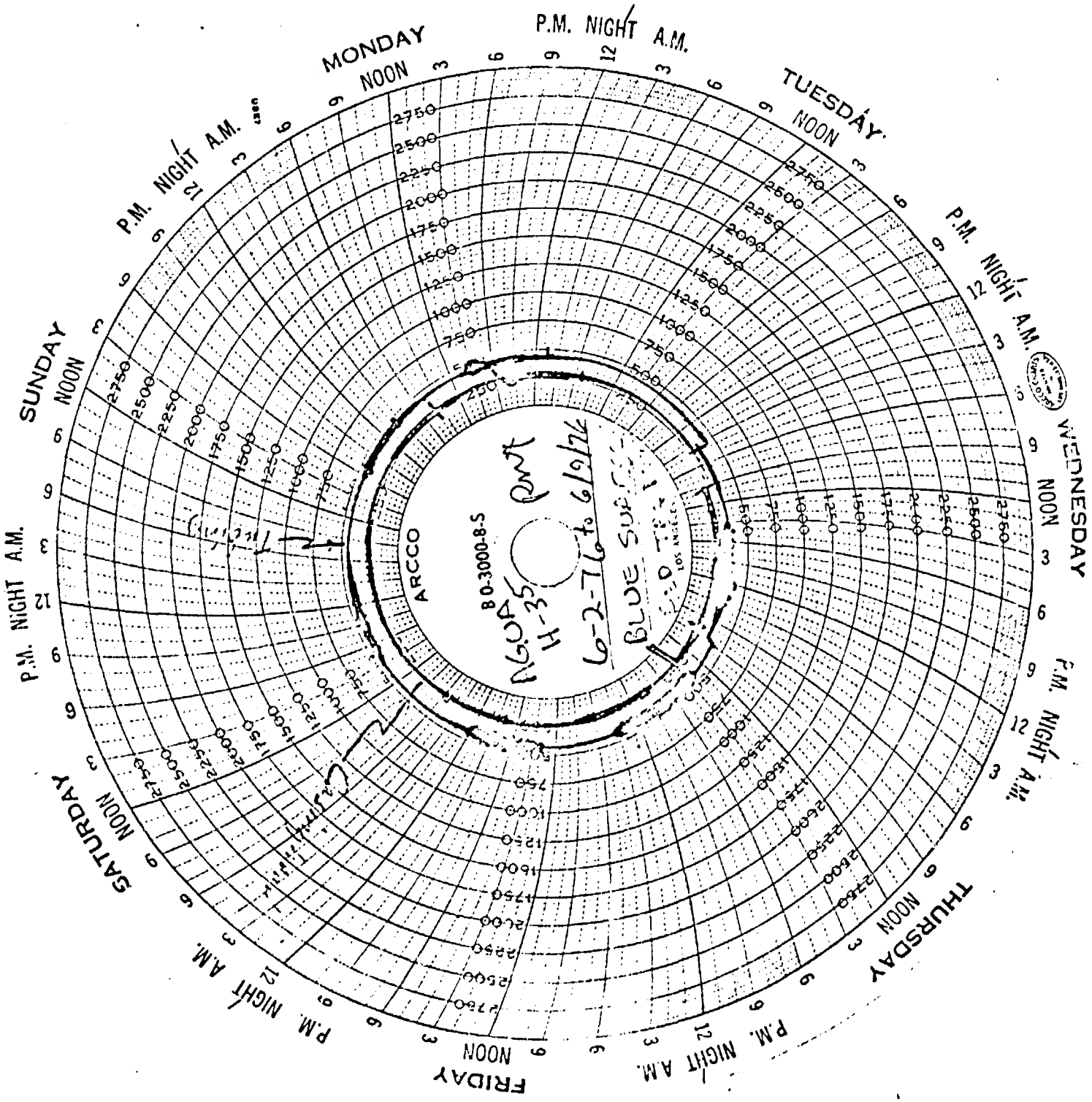
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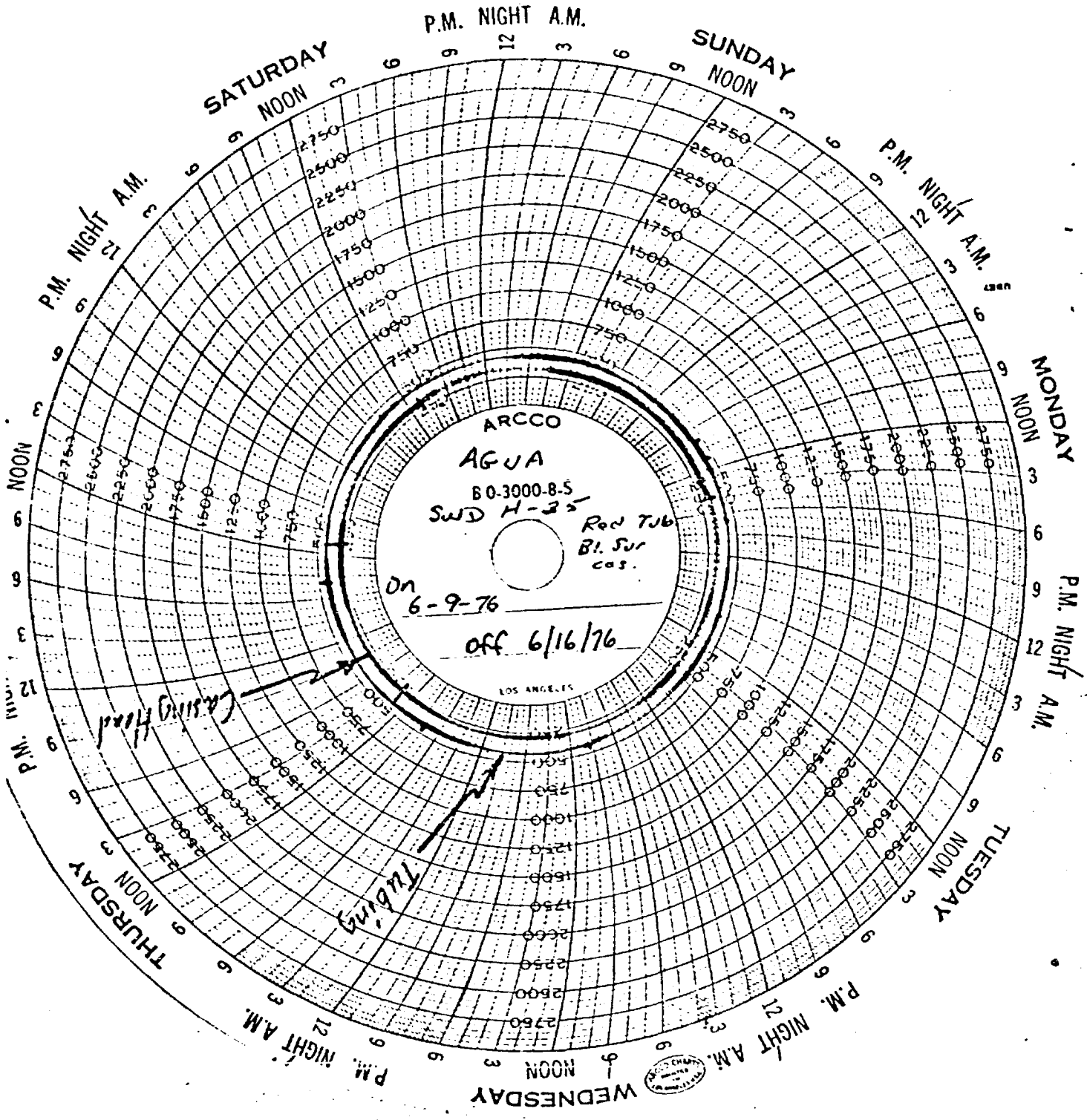
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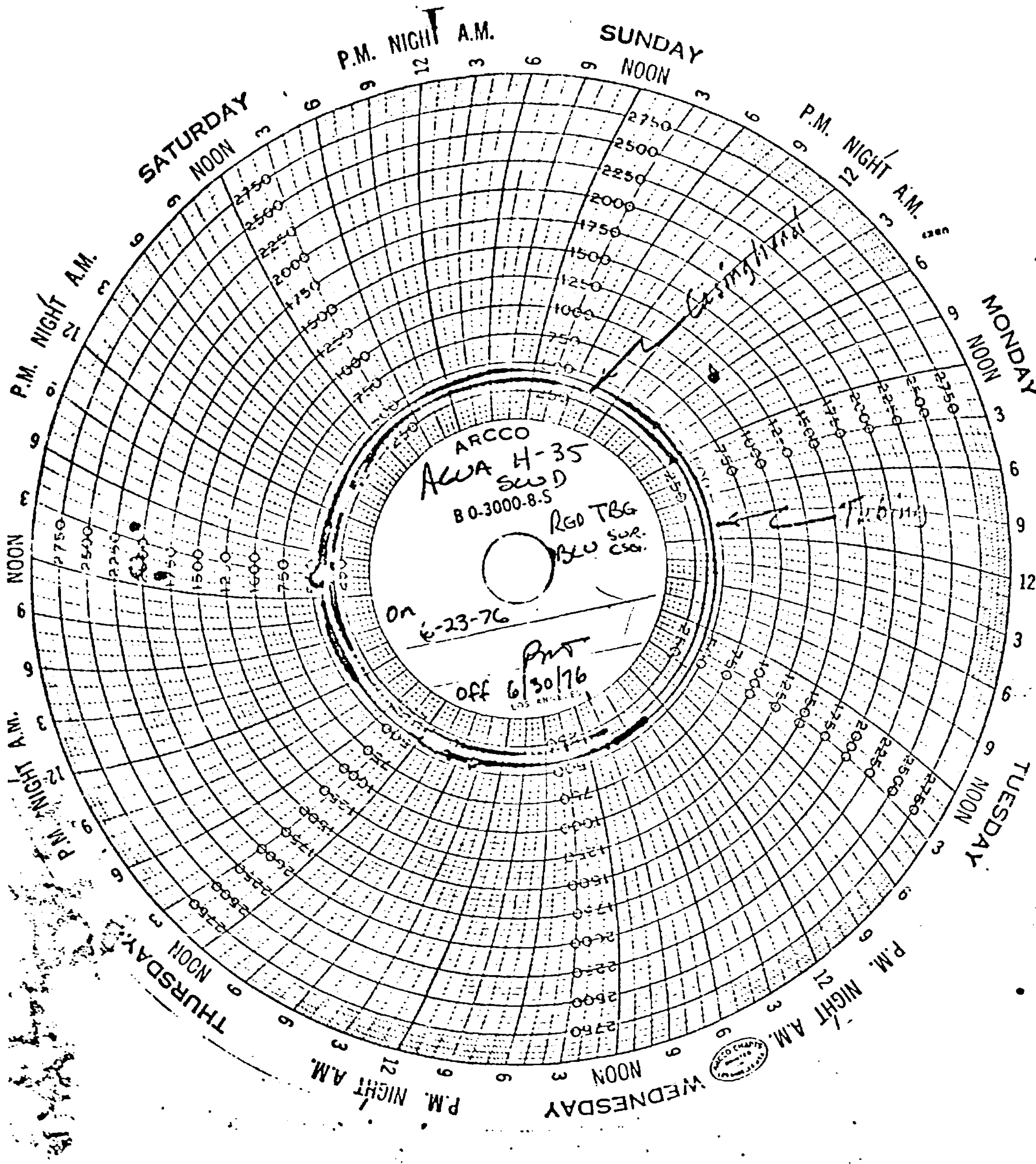
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OIL CONSERVATION COMMISSION

HOBBS, NEW MEXICO 88240

August 15, 1975

COPY

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

RE: Agua, Inc.
Blinebry-Drinkard SWD #35-H
35-22-37

Dear Mr. Ramey:

In regard to your telephone request of August 13, 1975, concerning data on the above captioned disposal well, the following information was gathered.

Surface casing	9 5/8"	set at 1880' w/440 sx	——— 825 psig
Production csg.	7"	set at 3975' w/300 sx	———1700 psig
Tubing	5 1/2"	set at 3925'	

Surface casing was bled down in seven minutes and then a full stream of salt water flowed for fifteen minutes. Water was still flowing when surface was shut in. In one and one-half hours the casing had pressured up to 750 psig.

It was noted during inspection time that the gauge on the surface was pulsating with the stroke of pump, as it was on each of the other strings.

When the survey is completed and all data has been analyzed, a more detailed report will be forwarded to Santa Fe.

Very truly yours,

OIL CONSERVATION COMMISSION

Leslie A. Clements
Oil & Gas Inspector

LAC/ed

NEW MEXICO
OIL CONSERVATION COMMISSION

FIELD TRIP REPORT

DATE Aug. 11, 1975

NAME OF EMPLOYEE NATHAN E. CLEGG

TIME OF DEPARTURE 7 a.m. TIME OF RETURN 4 p.m.

MILES TRAVELLED 82

In the space below please indicate purpose of trip and duties performed, listing wells or leases visited.

To Langlie Mattix Pool to witness bradenhead leak survey on following wells:

Armer Oil Co.	Citgo State	#1-E	2-23-37	OK
"	Flour	#1-M	35-22-37	"
"	"	#2-L	"	"
"	"	#3-K	"	"
"	"	#4-N	"	"
"	Gulf State	#1-D	2-23-37	"
"	"	#2-F	"	"
"	"	#3-M	"	
"	"	138-M	"	salt water disposal well
"	Keohane	#1-I	26-25-37	well has 720# salt water flow
"	Lowe	#1-O	"	O.K.

Agua, Inc. Blinebry-Drinkard SWD System Well #35-H -- inspected well pressure and condition of system and pit. Pit empty except for heavy BS & small amount of water. Bradenhead pressure 800#, Casing pressure 1800#, tubing 1700#.

Goodhousekeeping inspection of Sun Oil Co., W.W. Weatherly #3 tank battery and wells -- condition good -- no open pit.

Nathan E. Clegg
Employee's Signature
District #1

1-A

NEW MEXICO
OIL CONSERVATION COMMISSION

FIELD TRIP REPORT

DATE Aug. 14, 1975

NAME OF EMPLOYEE NATHAN E. CLEGG

TIME OF DEPARTURE 7 a.m. TIME OF RETURN 4:30 p.m.

MILES TRAVELLED 99

In the space below please indicate purpose of trip and duties performed, listing wells or leases visited.

To Eunice Area to witness bradenhead test survey on following wells:
Agua, Inc. Blinebry-Drinkard SWd system H-35-22-37, San Andres disposal well, has pressure on surface string 850# and salt water flow.
Moranco, Inc., State "36" well #1-K 36-22-37, Slight blow on surface -- o.k.
Stoltz-Wagner and Brown, Walden #1-A 21-22-37, Slight blow on surface -- o.k.
Crown Central Pet. Co., Danglade #1-B -- O.K.
Coquina Oil Corp., Baker #1-B 26-22-37, -- Pressure on sufrace, bled off in 7 seconds, slight flow of salt water.

Employee's Signature
District #1

1-B

NEW MEXICO
OIL CONSERVATION COMMISSION

FIELD TRIP REPORT

DATE Aug 15, 1975

NAME OF EMPLOYEE NATHAN E. CLEGG

TIME OF DEPARTURE 8 a.m. TIME OF RETURN 4:30 p.m.

MILES TRAVELLED 71

In the space below please indicate purpose of trip and duties performed, listing wells or leases visited.

To Eunice Area to pick up 2 water samples from Agua, Inc., Blinebry-Drinkard SWD Well #35-H. Surface string had 775# pressure bled off, water to surface in 5 minutes.

Inspected the following wells after cellars were dug out and risers installed:

Anadarko Production Co,Inc.	LMPSU Tr. 24 Well #1-I	28-22-37
"	" Tr. 25 Well #2-H	"
"	" Tr. 11 Well #1-M	21-22-37
"	" Tr. 8 Well #1-F	"
"	" Tr. 7 Well #3-B	"
"	" Tr. 7 Well #2-G	"
"	" Tr. 7 Well #1-H	"
"	" Tr. 5B Well #1-P	"

RECEIVED
SEP - 4 1975
OIL CONSERVATION COMM.
Santa Fe

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. _____ Exhibit No. 1-C
Submitted by _____
Hearing Date _____

Nathan E. Clegg
Employee's Signature
District #1

1-C

NEW MEXICO
OIL CONSERVATION COMMISSION

FIELD TRIP REPORT

DATE Aug. 18, 1975

NAME OF EMPLOYEE NATHAN E. CLEGG

TIME OF DEPARTURE 8 a.m. TIME OF RETURN 4 p.m.

MILES TRAVELLED 105

In the space below please indicate purpose of trip and duties performed, listing wells or leases visited.

H-35-22-37, Agua, Inc. Well #H-35 Blinebry-Drinkard SWD system -- pick up 2 water samples from storage tank.

A-23-22-37, Texas Pacific Oil Co., Inc. Boyd #3, Drinkard Pool to observe squeeze job -- rig up and pull tubing, run tubing with retrievable bridge plug set at 5988'.

B-23-22-37, Texas Pacific Oil Co., Inc. Boyd #5, Drinkard Pool, to observe squeeze job. Move in on location, rig up and pull tubing. Run tubing back in hole with retrievable bridge plug and set at 5816'.

Nathan E. Clegg
Employee's Signature
District #1

1-D

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

August 22, 1975

Agua Inc.
Box 1978
Hobbs, New Mexico

Attention: Mr. W. G. Abbott

Dear Mr. Abbott:

This will confirm our conversation of August 21, 1975, in Hobbs concerning the shutting in of your 35-H disposal well located in Unit H, Section 35, T22S, R37E.

It is the Commission's opinion that there is communication between tubing and casing strings in this well and the pressure on the surface string constitutes an immediate hazard to fresh water in the area.

You are therefore directed to cease injection into this well at a time no later than 8:00 a.m. September 26, 1975.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

cc: Mr. Phil R. Lucero
Mr. Emery C. Arnold

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. _____ Exhibit No. 1-E
Submitted by _____
Hearing Date _____

1-E

NEW MEXICO
OIL CONSERVATION COMMISSION

FIELD TRIP REPORT

DATE Aug. 25, 1975

NAME OF EMPLOYEE NATHAN E. CLEGG

TIME OF DEPARTURE 8 a.m. TIME OF RETURN 4 p.m.

MILES TRAVELLED

In the space below please indicate purpose of trip and duties performed, listing wells or leases visited.

H-35-22-37, Agua, Inc., Blinebry-Drinkard SWD Well #35-H to check disposal well to see if it had been shut in -- still injecting -- water pressure surface 525#, casing pressure 1800#, tubing pressure 1750#.

H-25-22-37, Summit Energy, Inc, Drinkard Estate Well #4-H to witness bradenhead tests -- Well O.K.

A-36-22-37, Summit Energy, Inc. Gulf State and Gulf State Com Well #1-A to witness bradenhead test -- Well O.K.

L-13-22-37, Texas Pacific Oil Co., Danglade #1, Drinkard Pool, to check on workover to squeeze water off -- unable to unseat packer.

B-23-22-37, Texas Pacific Oil Co., Inc. Boyd #1-B, Drinkard Pool, to check on workover -- rig did not get well killed. Pressure on surface string.

RECEIVED
SEP - 4 1975
OIL CONSERVATION COMM.
Santa Fe

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. Exhibit No. 1-F
Submitted By
Hearing Date

Nathan E. Clegg
Employee's Signature
District #1

NEW MEXICO
OIL CONSERVATION COMMISSION

FIELD TRIP REPORT

DATE Sept. 26, 1975

NAME OF EMPLOYEE NATHAN E. CLEGG

TIME OF DEPARTURE 8 a.m. TIME OF RETURN 4 p.m.

MILES TRAVELLED 100

In the space below please indicate purpose of trip and duties performed, listing wells or leases visited.

B-26-22-37, Coquina Oil Corp., Baker #1, Langlie Mattix Pool, to witness testing of perfs at 3650', 4 holes 0.51" -- tested perfs to 1000# for 30 minutes -- held O.K.

H-35-22-37, Agua, Inc., Blinebry Drinkard Salt Water Disposal System, Drinkard Pool, to check on well for shutin -- well has been shutin and water diverted to another disposal well -- pressure on well bradenhead 530# -- tubing 1400#.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. Exhibit No. 1-G
Submitted by:
Hearing Date

OCT 2 - 1975
OIL CONSERVATION COMM.
Santa Fe

Nathan E. Clegg
Employee's Signature
District #1

NEW MEXICO
OIL CONSERVATION COMMISSION

FIELD TRIP REPORT

DATE Dec. 1, 1975

Name of Employee NATHAN E. CLEGG

Time of Departure 8 a.m. Time of Return 4 p.m.

Miles Travelled 63

In the space below please indicate purpose of trip and duties performed, listing wells or leases visited.

From Hobbs to Blinebry-Drinkard Pool to witness bradenhead survey on following wells for Summit Energy, Inc.

Drinkard Estate Well #4 H-25-22-37 -- Test O.K.
" Well #5 G-25-22-37 -- Test O.K.
Amanda Sims Well #1 I-25-22-37 -- Test O.K.
Gulf Sims Well #1 P-25-22-37 -- Test O.K.
Gulf St. & Gulf St. Com #1 A-36-22-37 -- Test O.K.
Gulf "B" State Well #1 F-36-22-37 -- 8 5/8" had 460# pressure.

H-35-22-37, Agua, Inc., Blinebry-Drinkard SWD Well #H-35 -- check pressures on disposal well Surface P-300#, Tubing P-1100#.

RECEIVED
JAN - 8 1976
OIL CONSERVATION COMM.
Santa Fe

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. Exhibit No. 1-A
Submitted by
Hearing Date

Nathan E. Clegg
Employee's Signature
District #1

NEW MEXICO
OIL CONSERVATION COMMISSION

FIELD TRIP REPORT

DATE December 2, 1975

Name of Employee NATHAN E. CLEGG

Time of Departure 7 a.m. Time of Return 4:30 p.m.

Miles Travelled 68

In the space below please indicate purpose of trip and duties performed, listing wells or leases visited.

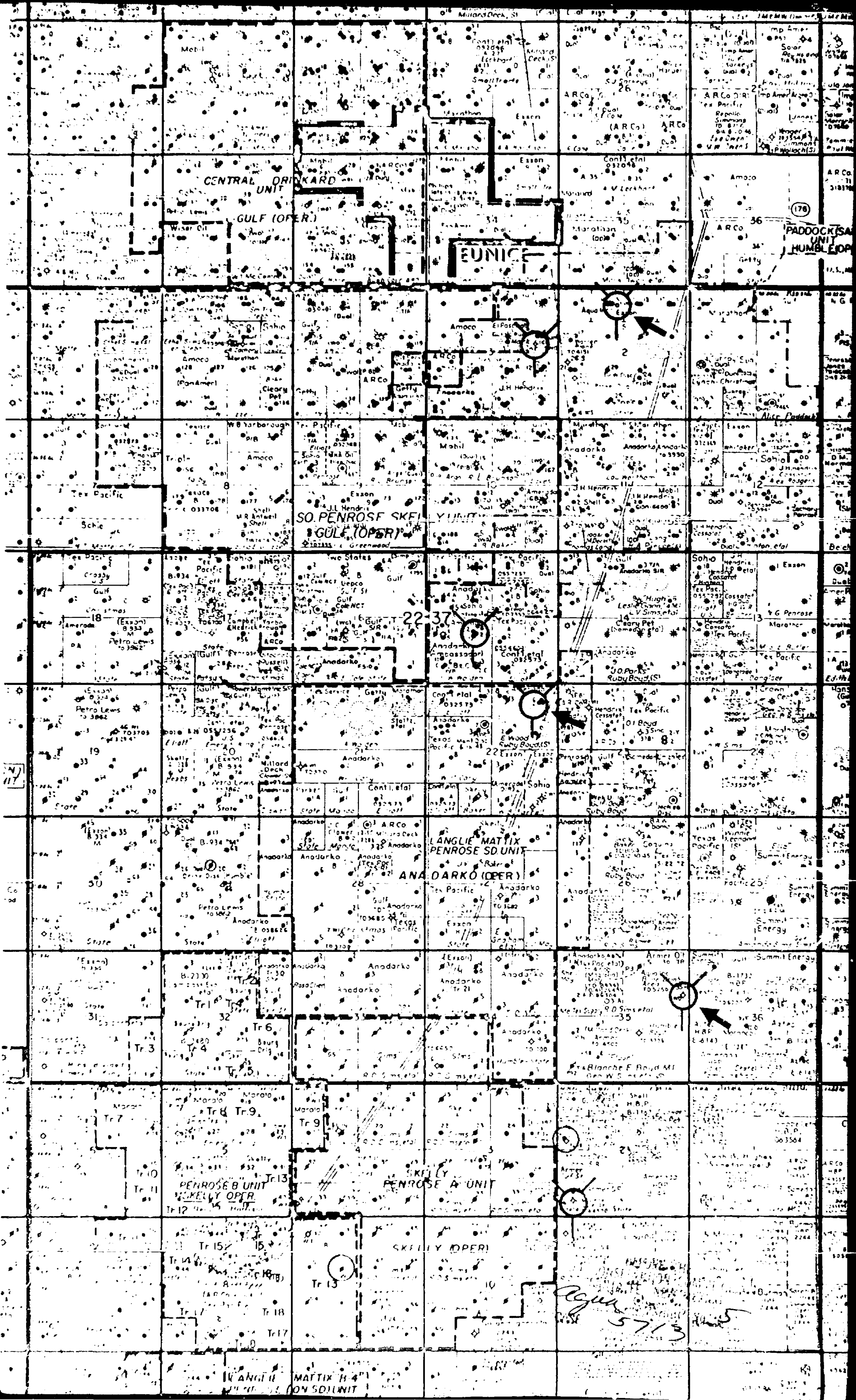
I-26-25-37, Armer Oil Company, Keohane Well #1, Blinebry Pool, to observe drilling of retainer and cement to test perfs. Ran tubing with 4 drill collars and bit to 3462 to top of retainer -- did not get drilled out to test perfs.

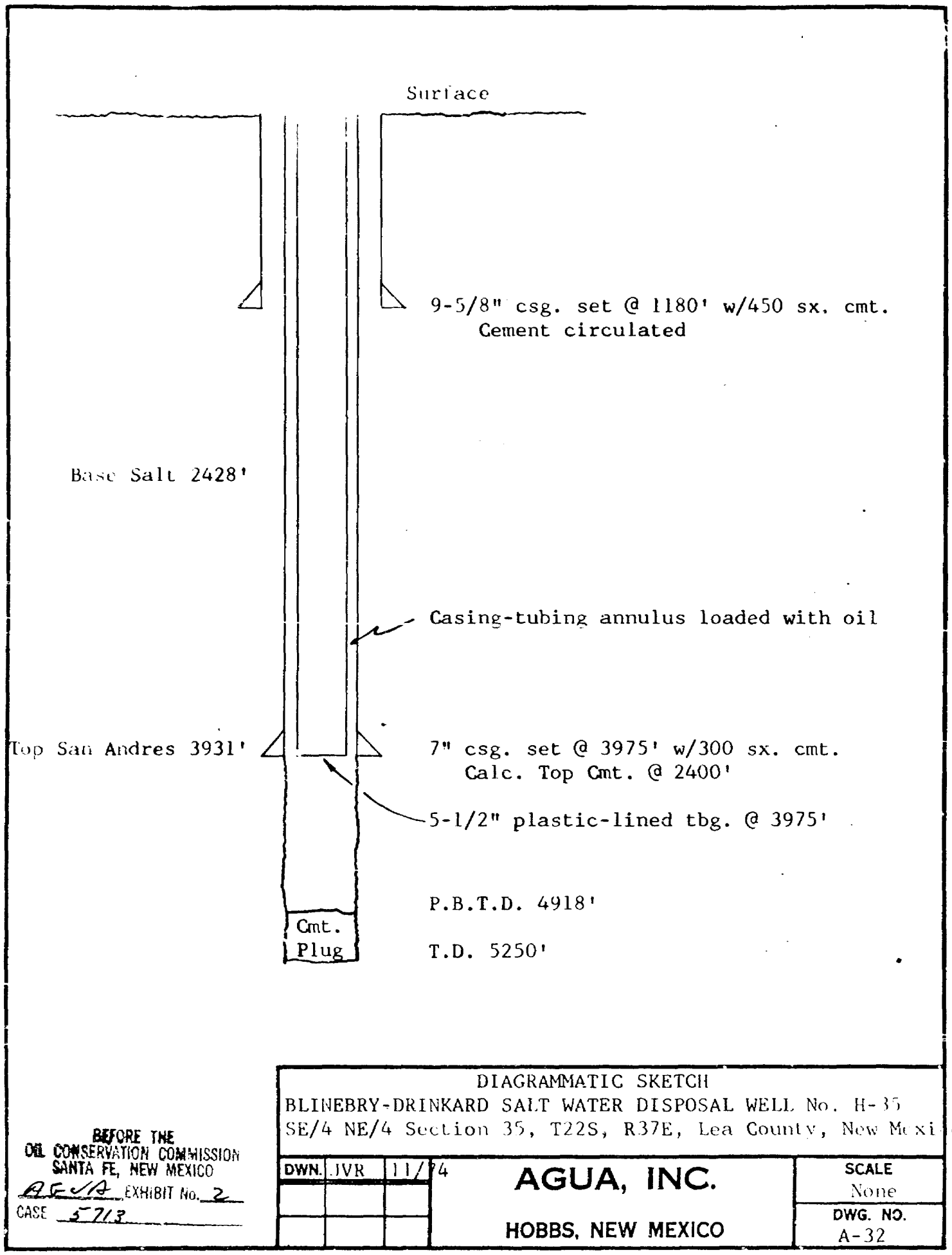
H-35-22-37, Agua, Inc. Blinebry-Drinkard SWD system well #H-35 -- check pressure on surface string 275#, tubing pressure 1080#.

Nathan E. Clegg
Employee's Signature
District #1

There is no
Aqua Ex # 4 in
Case No 5713

OCC Ex No. 2 in
this case was the
same exhibit.


CENTRAL DRINKARD UNIT
GULF (OPER.)
EUNICE
PADDOCK (SA) UNIT
HUMBLE (OPER)
SO. PENROSE SKELLY UNIT
GULF (OPER)
22-37
LANGLIE MATTIX PENROSE SD. UNIT
ANADARKO (OPER)
PENROSE B UNIT
SKELLY OPER.
SKELLY PENROSE A UNIT
SKELLY (OPER)
LANGLIE MATTIX B 4
Aqua
5713



DIAGRAMMATIC SKETCH
BLINEBRY-DRINKARD SALT WATER DISPOSAL WELL No. H-35
SE/4 NE/4 Section 35, T22S, R37E, Lea County, New Mexico

DWN.	JVR	11/74

AGUA, INC.
HOBBS, NEW MEXICO

SCALE: None
DWG. NO.: A-32

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
AGUA EXHIBIT No. 2
CASE 5713

K•E HERCULENE® 70021

Leo; 7-9-96

Bill Cleveland of
Haliburton called
(Pressured rates on wells)

Prefuration 3600
Pressure 1500 pds.
Rate 2 barrels per minute

Pref. 4150
Pres. 2000 pds.
Rate 2 barrels per minute

Pref. 3850
Pres. 2500 pds.
Rate 2.7 b p m

Pref. 3600
Pres. 2500 pds.
Rate 2.5 barrels per min.

Pref. 3700
Pres. 3100
Rate 20 b p m

Aqua Inc.

Pressure 2000 lb pds.

Rate 6.5 barrels per min.

This is in the neighborhood of 4000 feet

Pressure 1500 pds.

Rate 9.5 b p m

DRY HOLE CHECK

Name: William E Clegg Date: July 9, 1976

Milage - Start: 5471 Return: 5535 Total: 64 Time-Start: 1:00 Pm Return: 4:00 Pm

Location	Company	Well-Lease	Remarks:
H-35-22-37	AGUA	Well # H-35	From Hobbs Blinebry Drinkard SWD
			System To Check Pressures
			Surf 350# Csg 725# Tub 360#
			2:45 Pm

Additional Remarks:

DRY HOLE CHECK

Name: Nathan E Mc[illegible] Date: July 9, 1976

Milage - Start: 5471 Return: 5535 Total: 64 Time-Start: 1:00 Pm Return: 4:00 Pm

Location	Company	Well-Lease	Remarks:
H-35-22-37	AGUA	Well # H-35	From Hobbs Blinebry Drinkard S.W.D System To Check Pressures Surf 350# Csg 725# Tub 360# 2:45 Pm

Additional Remarks:

NEW MEXICO OIL CONSERVATION COMMISSION
Hobbs, New Mexico

WATER ANALYSIS

Well Ownership: AGUA, INC. Well No. H-35

Land Status: ☐ State ☐ Federal ☐ Fee

Well Location: Unit H, Section 35, T 22 S - R 37 E

Type Well: WATER INJECTION Depth: ____ feet.

Well Use: SWD

Sample Number: #1 Date Taken: Aug. 20, 1975

BY: Nathan Clegg

Specific Conductance: _____ m/o

Total dissolved Solids: _____ PPM.

Chlorides: 32,660 PPM.

Sulfates: _____ PPM.

Ortho-phosphates: ☐ V. low ☐ Low ☐ Med. ☐ High

Sulfides: ☐ None ☐ Low ☒ Med. ☐ High

_____ : _____

Date Analized: 8-21-75 By: John W. Runyan

N.M.O.C.C.

Remarks:

Sample taken from incoming line into storage tank at SWD station.

1 ml Sample = 9.2 silver nitrate x 3550.0 factor = 32,660 ppm

NEW MEXICO OIL CONSERVATION COMMISSION
Hobbs, New Mexico

WATER ANALYSIS

Well Ownership: AGUA, INC. Well No. H-35

Land Status: ☐ State ☐ Federal ☐ Fee

Well Location: Unit H, Section 35, T 22 S - R 37 E SWD #H-35

Sample taken from surface casing annulus.

Type Well: Salt water disposal Depth: ____ feet.

Well Use: Disposal of produced oilfield brine

Sample Number: #1 Date Taken: August 14, 1975
(Nathan Clegg)

Specific Conductance: _____ m/ɔ

Total dissolved Solids: _____ PPM.

Chlorides: 188,860 PPM. *

Sulfates: _____ PPM.

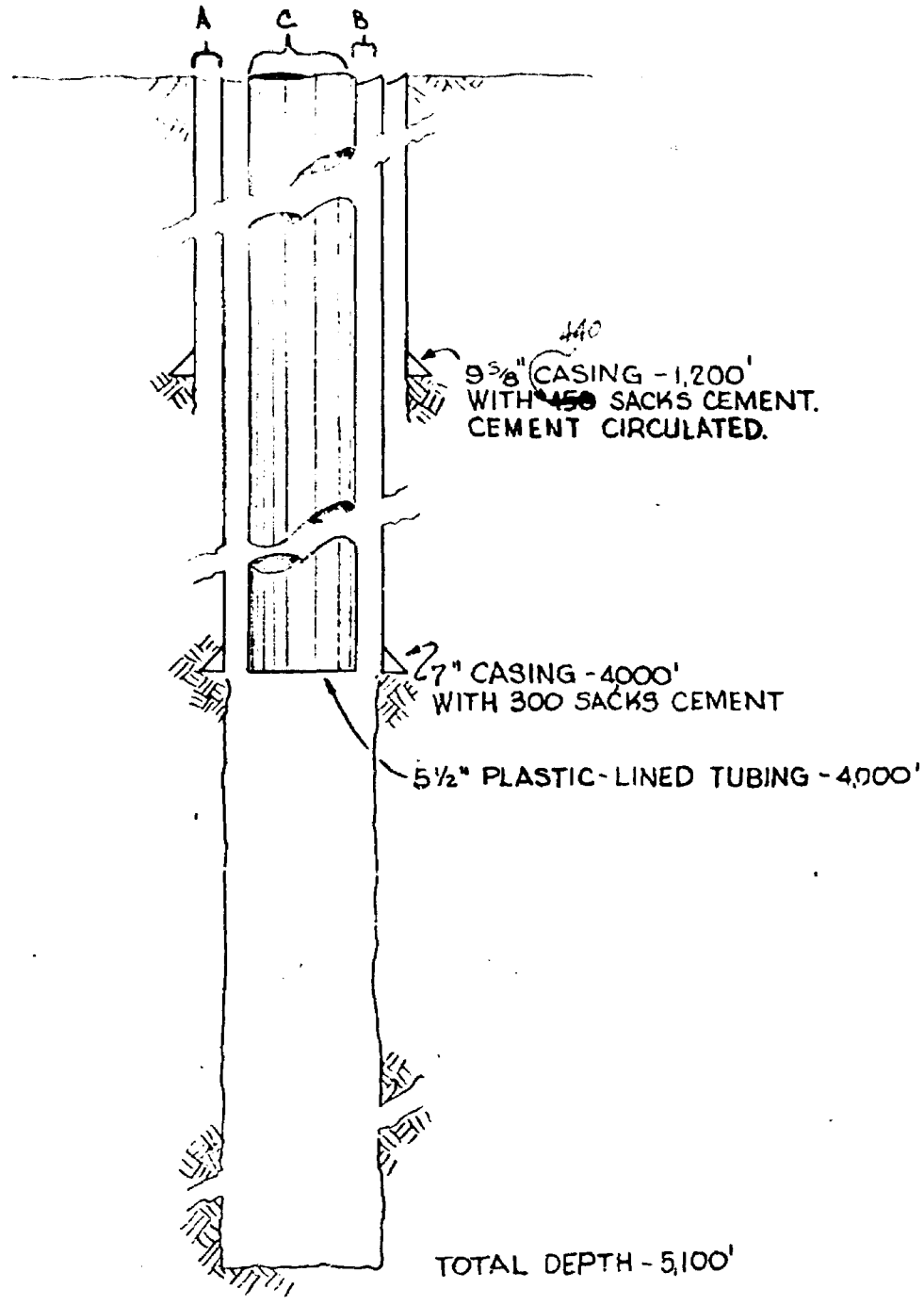
Ortho-phosphates: ☐ V. low ☐ Low ☐ Med. ☐ High

Sulfides: ☐ None ☒ Low ☐ Med. ☐ High

_____ : _____

Date Analized: August 15, 1975 By: John W. Runyan
N.M.O.C.C.

Remarks: * Super saturated salt water, main source is probably from salt section.
Queen water averages from 140,000 to 170,000 ppm
Grayburg water ranges from 51,000 to 88,000 ppm.
Sample has an odor and has small amount of oil in sample, color blue/black.
Test: 1 ml sample - 53.2 silver nitrate x 3550.0 factor = 188,860 ppm



BLINEBRY-DRINKARD SALT WATER DISPOSAL SYSTEM

SWD 52 AGUA WELL H-35

SE/4 NE/4, SEC. 35
TOWNSHIP 22 SOUTH, RANGE 37 EAST

PLAT OF WELL

DWN	E. B.	10-68

AGUA, INC.

Hobbs, New Mexico

SCALE

DWG. NO.

AGUA -- H-35 Disposal Well

I would recommend additional water not be injected into the H-35 well for the following reasons:

1. The area has as yet not been proven stable.

   A. In the last several months Skelly has had an injection well pressure up (Les has data on this)

   B. Gulf has had a workover which cost in excess of $150,000.00 which was directly due to this pressured up area. Continental also has had an expensive workover. At the present time there are 5 wells which are being used as monitor wells which if the wells were perforated and cement circulated from the top of the salt to the surface it would be expected to cost from $100,000.~~00~~ per job up.

   C. Even if Agua now injects below fracture pressure there is a question on whether the fractures created in prior injection would close. Flow back test indicates to me the fractures have not closed. Did the natural ~~permeabil~~ity have this capacity?

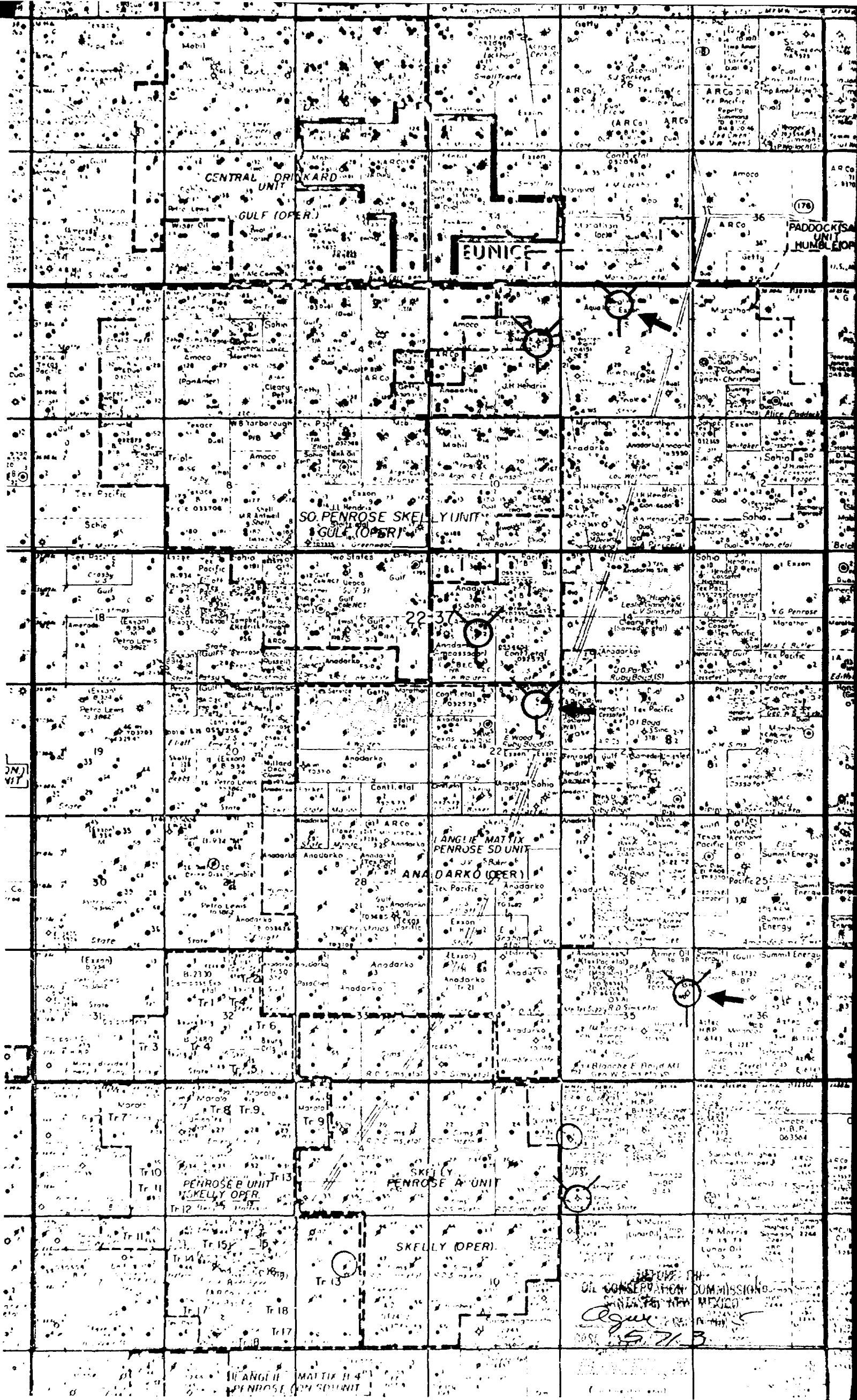
   D. Even if tracer logs show water is being injected in the San Andres zones (which from the logs I have seen is probably correct) it is not possible to say it is confined to the San Andres formation some distance from the wellbore. For this reason, the response of the injection pressure to the pressure on the casing would not show a direct communication.

   E. The Industry Committee, of which Agua is a member, has as of this date not come up with a solution to the problem.

   F. Where Skelly and Anadarko are injecting over large areas, if one well is bleeding off into the salt section it would not have the same effect as injecting ~~10,000~~ 5,500 BPD into one well.

   G. If, at a future date, the problem in the area has been located as to a source and has been corrected, then injection into the area can then be considered.

Jerry Sexton
Supervisor, District I
July 12, 1976


CENTRAL DRINKARD UNIT
GULF (OPER.)
EUNICE
SO. PENROSE SKELLY UNIT
GULF (OPER)
ANADARKO (OPER)
LANGLIE MATTIX PENROSE SD UNIT
SKELLY (OPER)
PENROSE B UNIT
SKELLY OPER.
SKELLY
PENROSE A UNIT
PADDOCK(SA UNIT
HUMBLE(OP
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
EXHIBIT NO. 5
CASE NO. 5713

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

August 22, 1975

Agua Inc.
Box 1978
Hobbs, New Mexico

Attention: Mr. W. G. Abbott

Dear Mr. Abbott:

This will confirm our conversation of August 21, 1975, in Hobbs concerning the shutting in of your 35-H disposal well located in Unit H, Section 35, T22S, R37E.

It is the Commission's opinion that there is communication between tubing and casing strings in this well and the pressure on the surface string constitutes an immediate hazard to fresh water in the area.

You are therefore directed to cease injection into this well at a time no later than 8:00 a.m. September 26, 1975.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

cc: Mr. Phil R. Lucero
Mr. Emery C. Arnold

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

DIRECTOR
JOE D. RAMEY

LAND COMMISSIONER
PHIL R. LUCERO

STATE GEOLOGIST
EMERY C. ARNOLD

July 9, 1976

Mr. James T. Jennings, Esq.
Jennings, Christy and Copple
P. O. Box 1180
Roswell, New Mexico 88201

Re: Case 5713, July 14, 1976

Dear Mr. Jennings:

Your letter of July 2, 1976, has been referred to me for reply.

The central question raised by your letter appears to me to be whether or not the Commission intends to carry the burden of proof in this case. I intend to call Les Clements and Nathan Clegg of our Hobbs office and put on a prima facie case showing that no injection should be allowed in a area surrounding the Agua H-35 Well. I plan to rely on a temperature survey taken on this well on October 16, 1975, and earlier field inspections made by these men. I also hope to have our field personnel check this well on or before July 12, 1976, and have their findings available at the hearing.

As you know, there are serious problems in Lea County concerning the disposal of produced water. In an effort to resolve this problem without unduly burdening the petroleum industry or unnecessarily reducing the production of oil and gas, the Commission has deferred entering an order in Case 5403 until the operating committee it appointed to look into this matter has reported.

On Monday, July 12, 1976, I will meet with Les Clements and Nathan Clegg and will have more detailed information on the tests we plan to rely on at the hearing. I will call you at that time to answer any other questions you may have.

Best personal regards.

Very truly yours,

WILLIAM F. CARR
General Counsel

WFC/jr

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

CASE NO. 5713
Order No. R-5230

APPLICATION OF THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION TO PERMIT AGUA, INC., AND ALL OTHER INTERESTED PARTIES TO APPEAR AND SHOW CAUSE WHY AGUA, INC., SHOULD BE AUTHORIZED TO RESUME SALT WATER DISPOSAL INTO THE SAN ANDRES FORMATION IN ITS SWD WELL NO. H-35 LOCATED IN UNIT H OF SECTION 35, TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on July 14, 1976, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this ___ day of _____, 1978, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearings, 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. Agua Inc. Salt Water Disposal well No H-35 located in Unit H of Section 35, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico

(2) That the ^ is located in an area where water flows have been encountered in formations above the formations utilized for disposal and injection.

(3) That after what appeared to be mechanical problems with said well, the Secretary-Director of the Commission ordered said well to be shutin at 8:00 a.m., September 26, 1975.

(4) That subsequent tests indicate said well to be mechanically sound.

(5) That a tracer survey conducted on said well indicates disposed water to be entering the proper disposal interval.

(6) That the plugged and abandoned well designated the Summit Energy Company Shell State Well No. 1, located in Unit D, Section 36, Township 22 South, Range 37 East, NMPM, is within one-half mile of said Well No. H-35.

(7) That the Summit Energy Company Shell State Well No. 1 ~~is probably~~ may not adequately plugged and could allow the migration of disposed water from the disposal interval to shallower formations or to fresh water aquifers if high pressure injection is permitted in said Well No. H-35.

(8) That injection should be allowed to resume in said Well No. H-35.

(9) That the injection pressure in said Well No. H-35 should be limited to 1000 psi.

IT IS THEREFORE ORDERED:

(1) That injection into the San Andres formation immediate resumption of is hereby authorized for the Aquatic Well No. H-35 located in Unit H of Section 35, Township 22 South, Range 37 East, Lea County, New Mexico

~~(2) That injection pressure be limited to 1000 psi.~~

(3) That the operator shall conduct bradenhead pressure surveys on said Well No. H-35 monthly and file the results with the Division Hobbs office.

(4) That upon proper showing that the Summit Energy Company Shell State No. 1 has been re-entered and properly plugged and abandoned, the Director of the Division may authorize increased injection pressure to a pressure slightly under formation fracture pressure.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

(2) that the injection well or system shall be equipped with a pressure limiting device which will switch or other acceptable ~~substitute order~~ to limit the wellhead injection pressure to no more than 1000 psi.

LAW OFFICES OF
JENNINGS, CHRISTY & COPPLE
JAMES T. JENNINGS
SIM B. CHRISTY IV
BRIAN W. COPPLE
ROBERT G. ARMSTRONG
1012 SECURITY NATIONAL BANK BUILDING
P. O. BOX 1180
ROSWELL, NEW MEXICO 88201
TELEPHONE 622-8432
AREA CODE 505

July 2, 1976

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

RE: CASE 5713, JULY 14, 1976

Gentlemen:

The Notice in connection with the hearing scheduled in the above case appears to put the burden of proof on Agua and all other interested parties to appear and show cause why Agua should be authorized to resume salt water disposal in the San Andres formation in its SWD Well H-35 located in Unit H of Section 35, Township 22 South, Range 37 East, Lea County, New Mexico.

This well was originally shut-in pursuant to a letter dated August 22, 1975 from the Director which stated that in the Commission's opinion there is communication between the tubing and casing strings in this well and that the pressure on the surface string constitutes an immediate hazard to fresh water in the area. Does the Commission still hold this opinion and if so, we would appreciate it if you would furnish us with the basis for such opinion and the parties who will testify that in their opinion there is communication.

In Case No. 5403, Order No. R-5003, the Commission found (Finding 29) that continued disposal into Agua, Inc.'s SWD Well No. H-35 should be permitted provided that in no event should the disposal average more than 5500 barrels per day during any one-month period. Please advise if the Commission has any information or proposes to offer any testimony indicating that there has been a change of conditions and that Agua should not be authorized to continue to dispose in accordance with the Findings in Case No. 5403. Again we would like to be furnished with the names of any witnesses who might testify in support of any change.

The Commission reopened Case No. 5403 at a hearing on November 19, 1975, at which a considerable amount of testimony was taken. As far as we have been able to determine, no Order was ever issued based upon the evidence presented in this case last November, and we are wondering when we can expect an Order in this matter.

If the Commission has conducted any tests subsequent to August of 1975 on the Agua H-35 Well, we would appreciate it if you could furnish

us with the results of said tests and also give us the names of the parties who made the tests and the dates thereof.

Agua has endeavored at all times to fully cooperate with the Commission in connection with the water problem in this vicinity, and if any of the Commission engineers have any thoughts or suggestions as to any action that Agua might take in connection with this well or if there is any further remedial work that should be done, we would appreciate it if you would let us have such information at this time and also advise the names of any witnesses who the Commission might offer to support the position that additional remedial work should be accomplished or that the H-35 SWD Well should be plugged and abandoned.

Yours very truly,

JAMES T. JENNINGS

JTJ/mb

cc: Agua, Inc.

CASE 5703: Application of Cities Service Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Tubb Gas Pool and Drinkard Oil Pool production in the wellbore of its State "S" Well No. 2, located in Unit F of Section 15, Township 21 South, Range 37 East, Lea County, New Mexico.

CASE 5692: (Reopened & Readvertised)

Application of Cities Service Oil Company for a dual completion and downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Owen "A" Well No. 1 located in Unit P of Section 35, Township 21 South, Range 37 East, Lea County, New Mexico, completing said well in such a manner as to commingle Blinebry and Drinkard oil production and to dually complete said zones with the Wantz-Granite Wash Pool.

CASE 5711: Application of Hanson Oil Corporation for a dual completion and downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Max Gutman Well No. 7 located in Unit D of Section 19, Township 22 South, Range 33 East, Lea County, New Mexico, in such a manner as to commingle Blinebry and Tubb Pool oil and gas production and to dually complete said zones with the Drinkard Pool.

Docket No. 20-76

Dockets Nos. 21-76 and 22-76 are tentatively set for hearing on August 4 and August 18, 1976. Applications for hearing must be filed at least 22 days in advance of hearing date.

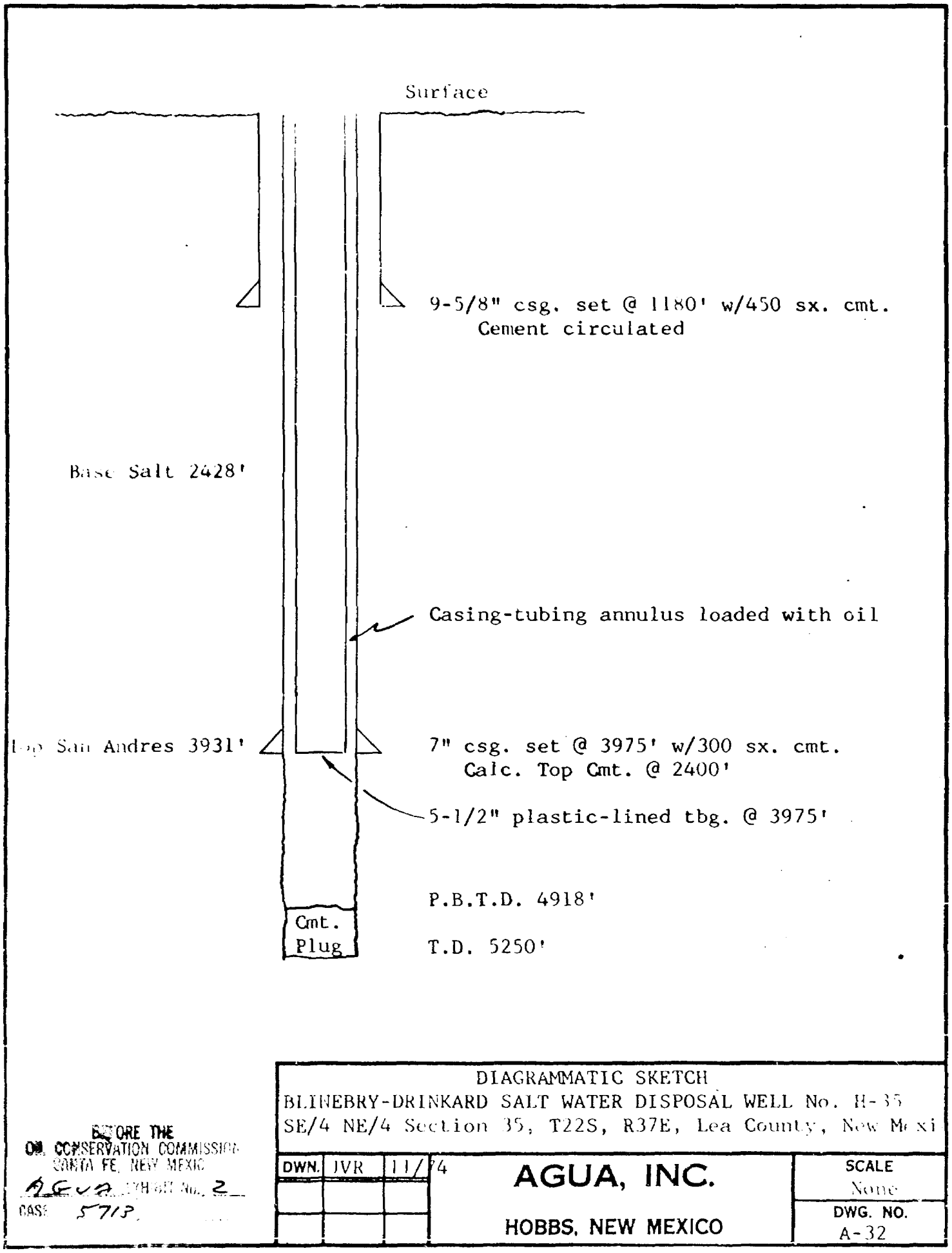
DOCKET: COMMISSION HEARING - WEDNESDAY - JULY 14, 1976

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

CASE 5712: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to permit all interested parties to appear and show cause why the San Juan 30-4 Unit Area in Townships 30 and 31 North, Range 4 West, Rio Arriba County, New Mexico, should not be contracted by the deletion of all lands not presently within an approved participating area or which cannot be expected to be in such participating area within the reasonably foreseeable future as the result of commercial production being developed thereon.

CASE 5713: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Agua, Inc., and all other interested parties to appear and show cause why Agua, Inc. should be authorized to resume salt water disposal into the San Andres formation in its SWD Well No. H-35 located in Unit H of Section 35, Township 22 South, Range 37 East, Lea County, New Mexico.

CASE 5714: Application of Agua, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permanent authority to dispose of produced salt water into the San Andres formation through the perforated interval from 4230 feet to 4320 feet below the surface and into the open-hole interval from 4400 feet to 5000 feet in its SWD Well No. C-2 located in Unit C of Section 2, Township 22 South, Range 37 East, Lea County, New Mexico.



DIAGRAMMATIC SKETCH
BLINEBRY-DRINKARD SALT WATER DISPOSAL WELL No. H-35
SE/4 NE/4 Section 35, T22S, R37E, Lea County, New Mexico

DWN.	JVR	11/74	AGUA, INC.	SCALE
				None
			HOBBS, NEW MEXICO	DWG. NO. A-32

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
AGUA EXHIBIT NO. 2
CASE 5713

K&E HERCULENE 74691

Docket No. 19-76

CASE 5703: Application of Cities Service Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Tubb Gas Pool and Drinkard Oil Pool production in the wellbore of its State "S" Well No. 2, located in Unit F of Section 15, Township 21 South, Range 37 East, Lea County, New Mexico.

CASE 5692: (Reopened & Readvertised)

Application of Cities Service Oil Company for a dual completion and downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Owen "A" Well No. 1 located in Unit P of Section 35, Township 21 South, Range 37 East, Lea County, New Mexico, completing said well in such a manner as to commingle Blinebry and Drinkard oil production and to dually complete said zones with the Wantz-Granite Wash Pool.

CASE 5711: Application of Hanson Oil Corporation for a dual completion and downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Max Gutman Well No. 7 located in Unit D of Section 19, Township 22 South, Range 38 East, Lea County, New Mexico, in such a manner as to commingle Blinebry and Tubb Pool oil and gas production and to dually complete said zones with the Drinkard Pool.

Docket No. 20-76

Dockets Nos. 21-76 and 22-76 are tentatively set for hearing on August 4 and August 18, 1976. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: COMMISSION HEARING - WEDNESDAY - JULY 14, 1976

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

CASE 5712: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to permit all interested parties to appear and show cause why the San Juan 30-4 Unit Area in Townships 30 and 31 North, Range 4 West, Rio Arriba County, New Mexico, should not be contracted by the deletion of all lands not presently within an approved participating area or which cannot be expected to be in such participating area within the reasonably foreseeable future as the result of commercial production being developed thereon.

CASE 5713: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Agua, Inc., and all other interested parties to appear and show cause why Agua, Inc. should be authorized to resume salt water disposal into the San Andres formation in its SWD Well No. H-35 located in Unit H of Section 35, Township 22 South, Range 37 East, Lea County, New Mexico.

CASE 5714: Application of Agua, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permanent authority to dispose of produced salt water into the San Andres formation through the perforated interval from 4230 feet to 4320 feet below the surface and into the open-hole interval from 4400 feet to 5000 feet in its SWD Well No. C-2 located in Unit C of Section 2, Township 22 South, Range 37 East, Lea County, New Mexico.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF AN EXTENSION OF TIME FOR THE DISPOSAL OF PRODUCED WATERS IN THE AGUA INC. SWD WELL NO. C-2.

EMERGENCY ORDER NO. E-28

NOW, on this 7th day of May, 1976, the New Mexico Oil Conservation Commission, a quorum being present, having considered the necessity for the disposal of produced water from the wells using the Agua disposal system, and being fully advised in the premises,

FINDS:

(1) That Agua, Inc., pursuant to authority contained in Order No. R-4495, dated March 14, 1973, is disposing of produced salt water into the San Andres formation through the open-hole interval from 4,400 feet to 5,000 feet in its SWD Well No. C-2 located in Unit C of Section 2, Township 22 South, Range 37 East, Lea County, New Mexico.

(2) That Agua, Inc., pursuant to authority contained in Administrative Order No. SWD-82, dated October 26, 1968, disposed of produced salt water into the San Andres formation through its SWD Well No. H-35, located in Unit H of Section 35, Township 22 South, Range 37 East, Lea County, New Mexico.

(3) That by directive dated August 22, 1975, applicant was ordered to cease injection into the aforesaid SWD Well No. H-35 at 8:00 a.m., Mountain Daylight Time, September 26, 1975, because of certain conditions existent in said well.

(4) That to enable Agua, Inc. to continue to dispose of the produced salt water which was being disposed of into said SWD Well No. H-35, the Commission entered Emergency Order No. E-27, dated September 26, 1975, authorizing the disposal of produced water in the Agua SWD Well No. C-2 through the perforated interval from 4,230 feet to 4,320 feet in addition to the previously authorized injection through the open-hole interval from 4,400 feet to 5,000 feet.

(5) That on October 7, 1975, the Commission entered Order No. R-4495-A authorizing the continued injection of produced waters in the Agua SWD Well No. C-2 through the perforated interval from 4,230 feet to 4,320 feet and through the open-hole interval from 4,400 feet to 5,000 feet for a period not to exceed four months from the date of the order.

(6) That on February 3, 1976, the Commission entered Order No. R-4495-B which authorized Agua, Inc. to continue injection in its SWD Well No. C-2 through the perforations and the open-hole for an additional 90 days.

(7) That on October 21, 1975, Agua, Inc. filed an application for authority to dispose of produced salt water into the San Andres formation in its Well No. A-22 located in Unit A of Section 22, Township 22 South, Range 37 East, Lea County, New Mexico.

(8) That on December 16, 1975, the Commission entered Order No. R-5137 authorizing the disposal of produced salt water in said Well No. A-22 but limiting the wellhead injection pressure to no more than 100 psi.

(9) That Agua, Inc. made application for Amendment of Order No. R-5137 to allow it to increase the injection pressure in its Well No. A-22.

(10) That Case No. 5644 was heard by the Commission on March 10, 1976, on said Application for Amendment of Order No. R-5137, but no order has yet been issued in said case.

(11) That on March 29, 1976, the Commission received an application from Agua, Inc. for Amendment of Orders Nos. R-4495-A and R-4495-B to allow injection of produced waters through the perforated and open-hole intervals in its SWD Well No. C-2 for an additional 90 days or more due to the fact that it could not complete its Well No. A-22 for salt water disposal until it received a decision from the Commission on its March 10, 1976, hearing for Amendment of Order No. R-5137.

(12) That on April 28, 1976, a hearing was held before a Commission examiner on said application of Agua, Inc. for an extension of time to inject produced salt water in its Well No. C-2 (Case 5674).

(13) That the Commission is prohibited by its Rule 1218 from entering an order in Case 5674 until it has a record of the hearing before it for review, certified by the examiner.

(14) That it is impossible for the Commission to obtain a transcript of the hearing prior to May 7, 1976.

(15) That on May 7, 1976, the authorization to inject produced salt water in the Agua, Inc., SWD Well No. C-2 expires pursuant to the terms of Order No. R-4495-B.

(16) That the water produced from approximately 430 producing oil wells in Lea County, New Mexico, is being disposed of in the Agua, Inc. SWD Well No. C-2.

(17) That should the authority to inject into the perforated interval in said SWD Well No. C-2 expire, many if not all of the above-mentioned 430 producing wells would be required to be shut-in.

(18) That an emergency exists whereby authorization should be granted to Aqua, Inc. to continue to dispose of produced salt water in its SWD Well No. C-2 into both the perforated interval from 4,230 feet to 4,320 feet and the open-hole interval from 4,400 feet to 5,000 feet, in order to avoid the shutting-in of the above-mentioned 430 producing wells.

IT IS THEREFORE ORDERED:

(1) That Aqua, Inc., is hereby authorized to dispose of produced salt water into the San Andres formation through the perforated interval from 4,230 feet to 4,320 feet in its SWD Well No. C-2, located in Unit C of Section 2, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico.

(2) That this order shall become effective at 12:01 a.m. Mountain Daylight Savings Time, May 8, 1976, and shall remain in effect for either 15 days or until the effective date of an order entered in Case 5674, whichever comes first.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

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