CASE 4345: Application of YATES DRILLING CO. FOR SALT WATER DISPOSAL, EDDY COUNTY, N. MEX.

Case Number

4345

Application

Transcripts.

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 29, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Drilling Company for salt water disposal, Eddy County, New Mexico. Case No. 4345

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 4345.

MR. HATCH: Case 4345. Application of Yates Drilling Company for salt water disposal, Eddy County, New Mexico.

MR. LOSEE: Mr. Examiner, A. J. Losee of Artesia appearing on behalf of the applicant. I have one witness, Mr. Mahfood.

(Whereupon, Applicant's Exhibits 1 through 3 were marked for identification.)

(Witness sworn.)

MR. UTZ: Other appearances? You may proceed.

EDDIE MAHFOOD

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

DIRECT EXAMINATION

BY MR. LOSEE:

Q State your name, please?

A Eddie Mahfood.

Q Where do you live and what is your occupation, Mr. Mahfood?

A I live in Artesia, New Mexico. I am petroleum engineer employed by Yates Drilling Company.

Q Have you previously testified before this Commission

as a petroleum engineer and had your qualifications accepted?

A Yes, sir, I have.

Q Please explain to the Examiner the purpose of this application in Case No. 4345.

A We seek authority to dispose of produced water from the Seven Rivers formation back into the same formation by gravity into the disposal wells.

We have at the present moment just one producing well on this lease. It's a Galvin lease in Section 12, 20, 26, Eddy County.

Q Please refer to what's been marked as Exhibit 1, being the plat of this area, and explain what is shown on this Exhibit.

A This Exhibit shows the West McMillan pool outlined in red and the Galvin lease in a broken red line. The two proposed disposal wells are shown in triangle. There's one producing well, No. 7 Well, in between the two triangles, two disposal wells.

Q Mr. Mahfood, what is the depth of the Seven Rivers on this Galvin lease?

A The pay is at 68 feet from the surface and extends to about 86 feet.

Q Now, I notice some other wells in the field. Are

there any wells off of the Galvin lease that produce from the Seven Rivers?

A No, sir, not at the moment.

Q They are actually Queen wells?

A That's correct. In Section 11, we have two Queen producers and three other wells, one already on injection, the other two proposed for injection.

Q Now, I notice several wells in addition to the Galvin 8 and 14, the proposed disposal wells, and the 7. Are all those other wells plugged and abandoned?

A Yes, they are all plugged and abandoned.

Q How much water do you propose to dispose of per day in these two wells?

A The No. 7 Well produces approximately 200 barrels a day. We will be utilizing 60 barrels a day for injection and three input wells in Section 11. That will leave an excess of 140 barrels a day which we propose to gravitate into Wells No. 8 and 14.

Q Please refer to what has been marked as Exhibit 2 and explain what is shown by this Exhibit.

A Exhibit 2 is a diagrammatic sketch of the proposed disposal wells. You will note that casing is set at 68 feet or will be set at 68 feet in both wells; that it will be

cemented to the surface; that a water sand occurring at 60 to 66 feet in the No. 14 and 54 to 63 feet in the No. 8; it will be protected by the cement and casing; that the oil zone occurs from 68 to 86 feet.

Q When were these wells drilled, Mr. Mahfood? It's shown on that diagrammatic, your completion date is.

A These wells were originally drilled in 1965 and were subsequently plugged. They were not considered as commercial at that time.

Q So actually, there has been no production from the Seven Rivers?

A From these two wells, that is correct.

Q Please refer to what has been marked as Exhibit 3, being the sample logs on all three of the wells, the two proposed disposal wells and the one producer, and explain what is portrayed by these three sample logs.

A On these sample logs, one for the No. 7, the producing well, No. 8 and 14, the disposal wells, you will note that the interval from 65 to 73 in the No. 7 Well is described as 100 percent sand with oil stains, strong odors, good fluorescence --

MR. UTZ: Now, where was this?

THE WITNESS: On the No. 7 Well; it's the interval

65 to 73.

Q (By Mr. Losee) Repeat that.

A In the interval 65 to 73, this interval is described as 100 percent sand with good fluorescence, oil stain, strong odors. It's a very fine argillaceous sand.

Q What does that indicate to you as to that interval in this well?

A That this is an oil interval, an oil producing interval.

Q Please look at still a portion of Exhibit 3, being the log on the Galvin No. 8 and point out what characteristics are reflected, if any, indicating a similar oil interval, oil sand.

A The corresponding interval in the No. 8 Well is 69 to 76 and 84 to 86. This interval is described as 100 percent sandstone from 70 to 76, with small percentage of sand in the outer intervals.

The description shows stain and fluorescence, up to 80 percent stain, good odor and definitely associated with oil.

Q Please refer to the log on the Galvin No. 14 and point out the interval, if any, in this well indicating the presence of an oil sand.

A Again, the interval 69 to 84 --

Q Now --

A Correction, to 86.

Q -- what factors --

A We have varying degrees of sand in here, up to 100 percent sandstone, with staining. Anyhow, this interval is indicative of continuity of this oil sand that is being produced in No. 7 and has been described as being present in No. 8 Well.

Q How much oil do you get out of the No. 7, with your water?

A We have recovered as much as five barrels of oil and 200 barrels of water.

Q Is that about the present production rate on it?

A This is a little difficult to ascertain right now because we have been pumping this well just once every ten days approximately and this manner of producing the well is not very -- is not very good for sustaining two and a half percent oil cut.

Q Mr. Mahfood, from your review of these sample logs on these three wells, do you have an opinion as to whether the interval which you have pointed out on all three, this sand is an oil producing interval in these wells?

A Yes, sir. It definitely is an oil sand, and at these depths, it is our experience that you cannot produce this oil without water.

Q Please refer to what has been marked as Exhibit 4.

A Exhibit 4 is a water analysis made by Dowell approximately a year ago. It shows total solids to be approximately 2700 parts per million, which is indicative of fairly fresh water.

It is felt that this water will not cause contamination of any fresh water sources in the neighborhood.

Q Now, do you have an opinion, Mr. Mahfood, as to whether this proposed disposal program will adversely affect any oil zones other than possibly the Seven Rivers which is the similar produced water?

A No, sir, this water should not adversely affect any water sands.

Q Well, I asked about oil. There aren't any oil sands from 68 feet to the surface, are there?

A No, there are no oil sands that we know of above this interval.

Q Were Exhibits 1 through 3 prepared by you or under your direction?

A Yes.

MR. LOSEE: We move the introduction of Exhibits 1 through 3.

MR. UTZ: Without objection, Exhibits 1 through 3 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 3 were offered and admitted in evidence.)

MR. LOSEE: That's our direct.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Mahfood, on your Exhibit No. 4 --

A Yes, sir.

Q -- in parts per million, the chloride is 16. Is that what that penciled in 16 means?

A No, sir. That 16 is equivalent molds.

Q This "MG" per liter here, would that be equivalent to parts per million?

A Correct.

Q The water that you intend to inject here is very low on salt?

A It certainly is, sir.

Q I notice on your Exhibit No. 2 you show water sand almost down to the oil sand, within four or five feet; two feet in one instance, five feet in the other instance.

What kind of water is that?

A It's compatible with this water that we are getting from this sand down here, sir, but more than that, I don't know. It was never analyzed, except by taste.

Q Would you consider the water you are going to inject here as a potable water?

A It would be if you were to filter out the oil particles of it, yes, sir.

Q Welll, then, this water that lies just above this injection zone here would probably be potable water, then, would it not?

A I would think so, yes, sir.

Q What kind of a bed lies between these two zones that would keep this oil zone separated from the water sand or is it separated?

A I think that water sand there is probably a misnomer. That was dolomite and, sir, I just don't know whether there is lack of continuity with it. I assume it is. It is separated.

Q Well, does your driller's logs make any mention?

A That's where this water sand interval -- this mention of water sand came from the driller's log rather than the sample description.

Q So the sample description here doesn't mention any water?

A That's correct. The sample description does not show any water or any porosity in that dolomite.

Q Is there any fresh water in this area?

A Yes, sir. We are approximately a mile from the lake, from Lake McMillan.

Q Any windmills?

A I'm not sure, sir. I can't recall seeing any there.

Q This water zone being so darn close to this oil zone kind of bothers me here. I would assume that if there's oil in this zone around 68 feet, it's been there as long as the fresh water has.

You don't know anything about the water zone above this oil zone, whether it's got any oil in it or not, do you?

A There was no indication of oil on the sample description, sir, and I think that would be very reliable. Therefore, it might be concluded that there is some separation between the oil sand and this water interval.

Q You are going to inject here under gravity?

A On the gravity, yes, sir.

Q To say the least, this is a pretty dog-gone shallow injection well, isn't it? You are producing from

what other zones in this area?

A From the Queen sands.

Q How deep is the Queen?

A The Queen is approximately 500 feet from the surface. We are producing from the Second Queen which is at about 540 - 560 feet from the surface.

Q Had you considered injecting into the Queen in this area?

A Yes, sir, we are injecting into the Queen and the Second Queen sand in Section 11 and we propose to extend into Section 12 in the near future.

Q That's on a waterflood project, isn't it?

A That's correct. It's a pressure maintenance project. This is coming up in the next case, sir.

Q The water in this area you intend to use for your waterflood injection?

A That is correct.

Q Surplus water put in your shallow well?

A That's right.

Q You think there's too much water to use in your pressure maintenance project?

A Eventually we will be using it all, but at the moment we just have three wells to inject into and they are

just capable of taking 20 barrels a day at the low pressure we are proposing.

MR. UTZ: Any other questions of the witness? The witness may be excused. Statements? The case will be taken under advisement.

I N D E X

STATE OF NEW MEXICO)
)ss
COUNTY OF BERNALILLO)

I, GLENDA BURRS, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Glenda Burrs
NOTARY PUBLIC

My Commission Expires:

March 12, 1973

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4345, heard by me on Apr. 29, 1970.

....., Examiner
New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

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

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

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

May 20, 1970

Re: Case No. 4345
Order No. R-3967
Applicant:
YATES DRILLING COMPANY

Mr. A. J. Losee
Attorney at Law
P. O. Drawer 239
Artesia, New Mexico 88210

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC
Other State Engineer Office

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4345
Order No. R-3967

APPLICATION OF YATES DRILLING COMPANY
FOR SALT WATER DISPOSAL, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 29, 1970, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 20th day of May, 1970, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Yates Drilling Company, is the owner and operator of the Galvin Well No. 8 and the Galvin Well No. 14, both located in Unit N of Section 12, Township 20 South, Range 26 East, NMPM, West McMillan-Seven Rivers Pool, Eddy County, New Mexico.

(3) That the applicant proposes to utilize said wells to dispose of water produced by its Galvin Well No. 7 located in said Unit N into the Seven Rivers formation, with injection by gravity into the intervals as follows:

The open-hole interval from approximately 68 feet to 100 feet in its Galvin Well No. 8, and

The open-hole interval from approximately 68 feet to 90 feet in its Galvin Well No. 14.

(4) That the injection should be accomplished through tubing installed in a packer set at approximately 67 feet in each well and that the casing-tubing annulus of each of the subject wells should be filled with an inert fluid.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights, provided only water produced from the West McMillan-Seven Rivers Pool is disposed of into the subject wells.

IT IS THEREFORE ORDERED:

(1) That the applicant, Yates Drilling Company, is hereby authorized to utilize its following-described wells in Unit N of Section 12, Township 20 South, Range 26 East, NMPM, West McMillan-Seven Rivers Pool, Eddy County, New Mexico, to dispose of water produced from said pool into the Seven Rivers formation:

Galvin Well No. 8, injection to be accomplished by gravity through tubing installed in a packer set at approximately 67 feet, with injection into the open-hole interval from approximately 68 feet to 100 feet, and

Galvin Well No. 14, injection to be accomplished by gravity through tubing installed in a packer set at approximately 67 feet, with injection into the open-hole interval from approximately 68 feet to 90 feet;

PROVIDED HOWEVER, that the casing-tubing annulus of each of the subject wells shall be filled with an inert fluid.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

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

Case 4345
Heard 4-29-70
Rec. 5-15-70

Grant Yates Dr. Co. permission to inject waters into the W. McMillan - S.R. Pool thru their Galvin #14, 1155/S, 1485/W 12-20-26 & their Galvin #8, 991/S, 2310/W 12-20-26. Injection shall be thru tubing & under a packer w/ the annular space filled w/ inert waters. This was not proposed by applicant but I believe it to be necessary in order to adequately protect the fresh water zones & the producing zones.

The water to be injected shall be only that water which is produced from the S.R. in the W. McMillan Pool and this shall be injected only into the zone from which it is produced.

The water zone above the Prod. zone is potable with a chloride concentration of 50 m² gal per day & discharges as the major Johnson Springs South of this area & into the Pecos river.

Docket No. 11-70

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 29, 1970

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 4340: Application of Tesoro Petroleum Corporation for three waterflood projects and unorthodox injection well locations, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute three waterflood projects in the South Hospah Upper Sand Oil Pool by the injection of water through nine injection wells to be drilled at unorthodox locations in Section 1, Township 17 North, Range 9 West, and in Sections 6 and 7, Township 17 North, Range 8 West, McKinley County, New Mexico. Applicant further seeks a procedure whereby additional injection wells and producing wells at unorthodox locations within the project areas may be approved administratively.

CASE 4341: Application of Pan American Petroleum Corporation for two nonstandard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of two nonstandard gas proration units for its State "C" Tract 13 Well No. 5, a dual completion, located 1980 feet from the North line and 660 feet from the West line of Section 36, Township 21 South, Range 37 East, Lea County, New Mexico, said units to be comprised as follows:

Blinebry Gas Pool - 240 acres - NW/4 and W/2 NE/4
Tubb Gas Pool - 200 acres - W/2 NW/4, NE/4 NW/4 and W/2 NE/4

CASE 4342: Application of Dearing, Wright, Gibbins, and Church, doing business as New Mexico Petroleum Company, for authority to operate an oil treating plant, Lea County, New Mexico. Applicants, in the above-styled cause, seek authority to install and operate a chemical and heating process oil treating plant in the vicinity of Tatum, New Mexico, for the reclamation of sediment oil to be obtained from tank bottoms, waste pits, and drip tanks.

CASE 4343: Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the perforated and open-hole interval from 11,194 feet to 11,278 feet in its New Mexico "BB" State (NCT-1) Well No. 2 located in Unit N of Section 11, Township 12 South, Range 32 East, East Caprock-Devonian Pool, Lea County, New Mexico.

CASE 4344: Application of Texaco Inc. for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the open-hole interval from 11,230 feet to 11,503 feet in its B. E. Spencer "B" Federal Well No. 1 located in Unit D of Section 28, Township 15 South, Range 30 East, Little Lucky Lake-Devonian Pool, Chaves County, New Mexico.

CASE 4345: Application of Yates Drilling Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers and possibly other formations in the open-hole interval from 68 feet to 100 feet in its Galvin Well No. 8 and from 68 feet to 90 feet in its Galvin Well No. 14, both located in Unit N of Section 12, Township 20 South, Range 26 East, West McMillan-Seven Rivers Pool, Eddy County, New Mexico.

CASE 4346: Application of Yates Drilling Company for a pressure maintenance expansion and promulgation of rules therefor, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand the S. P. Yates West McMillan Anderson Pressure Maintenance Project in the West McMillan Seven Rivers-Queen Pool, Eddy County, New Mexico, authorized by Order No. R-3852, by the conversion to water injection of two additional wells located in Units O and P, Section 11, Township 20 South, Range 26 East. Applicant further seeks the designation of a project area, promulgation of rules governing said project, and a procedure whereby other methods of flooding in the subject project may be authorized administratively.

CASE 4347: Application of Yates Drilling Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Yates North Vacuum (San Andres) Unit Area comprising 800 acres, more or less, of State lands in Sections 1, 2, 11, and 12, Township 17 South, Range 34 East, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico.

CASE 4348: Application of Yates Drilling Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its North Vacuum (San Andres) Unit Area by the injection of water into the San Andres formation through 9 wells located in Sections 1, 2, 11, and 12, Township 17 South, Range 34 East, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.

CASE 4349: Application of Tenneco Oil Company for a waterflood expansion and unorthodox injection well locations, McKinley County, New Mexico. Appplicant, in the above-styled cause, seeks to expand the waterflood project in its South Hospah Unit Area by the injection of water into the South Hospah Upper Sand Oil Pool, McKinley County, New Mexico, through two additional injection wells at unorthodox locations in Section 12, Township 17 North, Range 9 West, as follows:

Unit Well No. 41 - 5 feet from the North line and 1650 feet from the East line;

Unit Well No. 42 - 3000 from the North line and 5 feet from the East line.

CASE 4350: Application of Cities Service Oil Company for an exception to Order No. R-3221, as amended, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's Snyder Federal lease comprising the S/2 NE/4 and N/2 SE/4 of Section 26. Township 15 South, Range 29 East, Sulimar-Queen Pool, Chaves County, New Mexico. Applicant seeks authority to dispose of salt water produced by wells on said lease in an unlined surface pit located in Unit H of said Section 26.

CASE 4351: Application of Humble Oil & Refining Company for well reclassification and simultaneous dedication of acreage, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the reclassification of its New Mexico "G" State Well No. 5 from an oil well in the Eumont Pool to a gas well in said pool. Applicant further seeks the dedication of a standard 640-acre gas proration unit comprising all of Section 23, Township 21 South, Range 36 East, Lea County, New Mexico, to said Well No. 5 and to applicant's New Mexico "G" State Well No. 9,

located, respectively in Units E and G of said Section 23, and authority to produce the allowable assigned to said unit from either of said wells in any proportion.

CASE 4352: Application of Jack L. McClellan for the creation of a new gas pool or, in the alternative, the establishment of pool rules for two existing pools, Chaves and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Queen gas pool comprising the following-described acreage:

CHAVES COUNTY, NEW MEXICO

Township 15 South, Range 29 East
Section 11: SE/4
Section 12: SW/4
Section 13: NW/4
Section 14: E/2
Section 23: NE/4 and SW/4

In the alternative applicant seeks the promulgation of special rules for the Sulimar-Queen Pool, Chaves County, and Double L-Queen Pool, Chaves and Lea Counties, New Mexico, as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil wells and gas wells.

CASE 4353: Application of Lone Star Producing Company for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Tres Papalotes-Pennsylvanian Pool, Lea County, New Mexico, including a provision for 160-acre spacing and proration units.

5-19-70

#1828

(NE SE 1/2 Dec. 1857 3212 - E6 3310)

relation the

Lake McMillan

50 millions

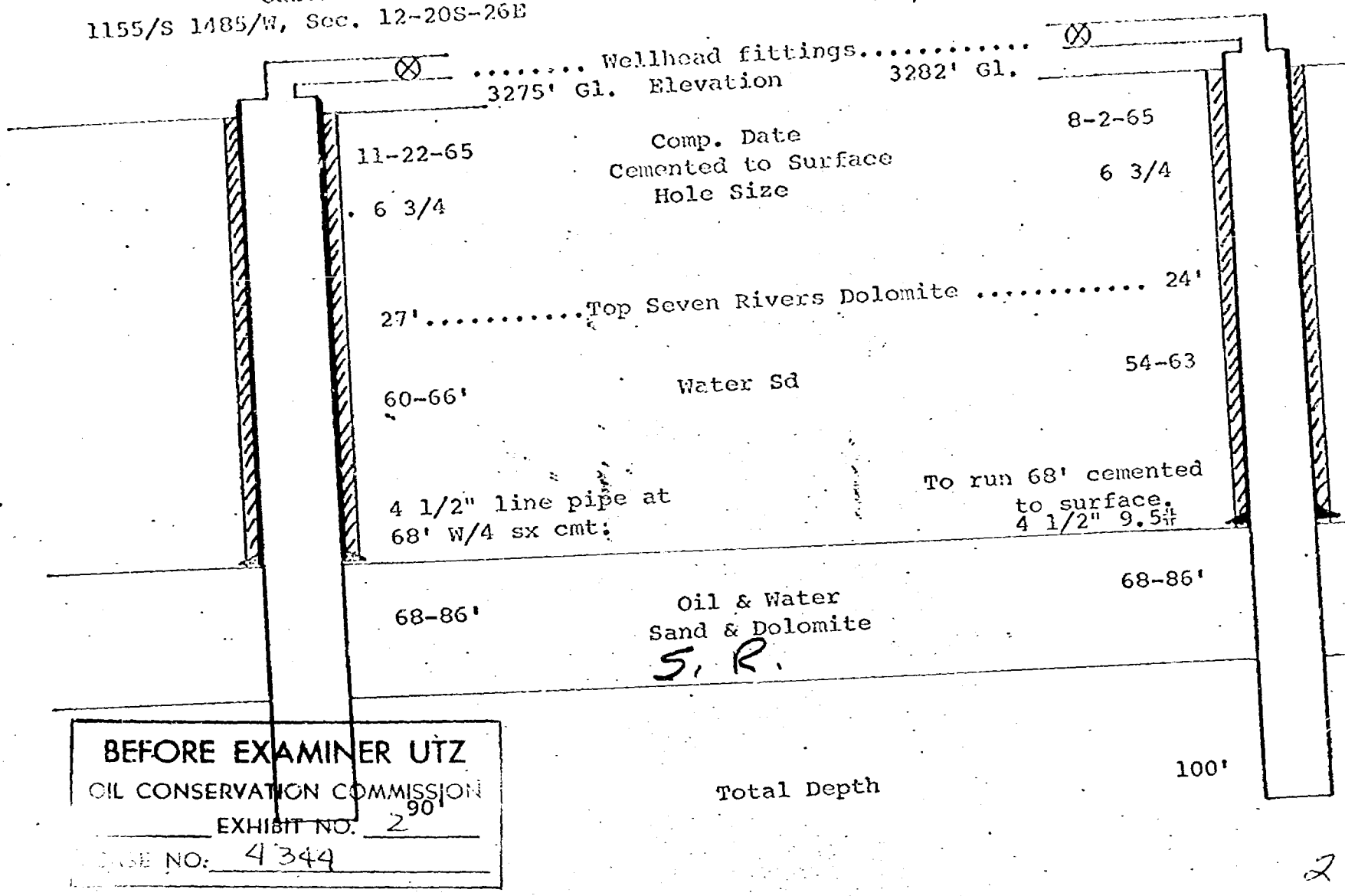
1 ft./mile

Potable water.

DIAGRAMATIC SKETCH OF DISPOSAL WELLS
YATES DRILLING COMPANY
West McMillan (S.R.), Eddy County, N.M.

Galvin No. 14
1155/S 1485/W, Sec. 12-20S-26E

Galvin No. 8
990/S 2310/W Sec. 12-20S-26E



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 4344

90

2

STATE	COUNTY		ON	DESC. BY	COMPANY
[illegible]		[illegible]		RCN	S. P. Yates

KIND OF SAMPLES	LOCATION	S	T	R	FARM	WELL NO.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Galyn	7

DEPTH	DOLO %	LIME %	Description	SALT %	ANHY %	SHALE Red	SHALE Gry.	SHALE Grn.	SHALE Blk.	SAND Red	SAND Gry.	SAND Description	CHT. %	NOTES
0-5											100	yel hgy v argil		
5-10					20 gyp						80	Ab		
10-15							50	yel gy			50	Ab		
15-20		30	Calcite?,		10		60							
20-25	30						30							
25-30	[illegible]		[illegible] [illegible] [illegible] w/ [illegible]											
30-35							70	yell			30	yel hgy argil		
35-40	70		Ab				30							
40-45	100		Tan [illegible] [illegible] [illegible]											
45-50	80		[illegible] dense				20							
50-55			No sample											
55-60	90		Ab 10% [illegible] bright yel fluor				10							
60-65	100		Ab w/ [illegible] 50% of [illegible] tan [illegible] stnd, also bright yel fluor											
65-68											100	vf argill	30% [illegible] fluor	
68-69											100	vf-f [illegible] oil stnd bright yel fluor, strong odor [illegible]		
69-70											100	Ab 100% stnd & fluor		
70-71											100	Ab 100% [illegible]		
71-72											100	50% [illegible] [illegible] odor vf-silty [illegible] stnd 50% [illegible] fluor		
72-73									[illegible] odor		100	vf argill [illegible] stnd, 50% stnd		
73-74	100		Hgy - tan [illegible] [illegible] [illegible] bright yel fluor 90% w/ [illegible]											
74-75	100													
75-76							100	[illegible]						
76-77	40		as below [illegible]				60							
77-78			No sample											

3320 — ARTESIA PRINTING CO

DEPTH	DOLO %	Description
78-79	100	[illegible] [illegible] 10% [illegible] oil stng [illegible] 70% w/ [illegible]
79-80	100	Ab [illegible]

[illegible]

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 4344

3

STATE	COUNTY	ELEV	DISC. BY	COMPANY		
N. Mex	[illegible]	3[illegible]	[illegible]	Sh[illegible]		
KIND OF SAMPLES	**LOCATION**	**S**	**T**	**R**	**FARM**	**WELL NO.**
Rotary – [illegible]	2310 [illegible] [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3

DEPTH	DOLO %	LIME %	Description	SALT %	ANHY %	SHALE Red	SHALE Gry.	SHALE Grn.	SHALE Blk.	SAND Red	SAND Gry.	SAND Description	CHT. %	NOTES
67-68	100		[illegible] of some [illegible]											
68-69	90		[illegible]				[illegible]							
69-70	20										80	[illegible]		light looking [illegible]
70-71											100	Ab [illegible]		[illegible]
71-72											100	[illegible] of good [illegible] and [illegible] dolomite; 80% [illegible] str & yel fluor, Good [illegible] in sack.		
72-73			No samples											
73-74											100	Ab 100% [illegible] fluor.		
74-75											100	Ab 50% [illegible] fluor, [illegible] more [illegible] dolomite. Much of [illegible] is [illegible] non [illegible]		
75-76											100	Ab 20% [illegible]		
76-77	100		[illegible] streaks [illegible] [illegible] that is [illegible] 30% [illegible]											
77-78			[illegible] 10% [illegible]											
78-79			Ab vf-[illegible] no [illegible]											
79-80	30		bn tan; 70% [illegible] fluor								70	Ab		
80-81	100		bn tan [illegible], [illegible] some [illegible] coated [illegible]											[illegible]
81-82	100		bn [illegible] 80% [illegible] fluor [illegible]											
82-83	100		Bn [illegible] 20% [illegible] 20% [illegible]											
83-84	100		Bn [illegible] 20% [illegible] 30% [illegible] [illegible] zone [illegible]											
84-85	50		Ab; 30% [illegible] fluor								50	[illegible] partly [illegible]		
85-86	20		Ab; 20% [illegible]								80	[illegible]		
86-87			No samples											
87-88			No samples											
88-89			No samples											
89-100	100		[illegible] 70% [illegible]											

STATE	COUNTY	ELEVATION	DESC. BY	COMPANY
N. Mex	[illegible]	3475 GL	[illegible]	[illegible] Yates

KIND OF SAMPLES	LOCATION	S	T	R	FARM	WELL NO.
Rotary-Air	[illegible]	13	20S	26E	Galvin	14

DEPTH	DOLO %	LIME %	Description	SALT %	ANHY %	SHALE Red	SHALE Gry.	SHALE Grn.	SHALE Blk.	SAND Red	SAND Gry.	SAND Description	CHT. %	NOTES
0-10			48% Caliche (Caly [illegible]) [illegible]									[illegible]		[illegible]
10-15							[illegible]				70	yel-gy [illegible] vf sd		
15-20							[illegible]				70	[illegible]		
20-25							100 [illegible] ([illegible] 2% sd)							
25-30	[illegible]		Tan [illegible]				[illegible]							
30-35	[illegible]						30 [illegible]							
35-40	20						80 [illegible]							
40-45	50		Tan [illegible]				30 [illegible]				20	yel-gy [illegible]		
45-50	70		[illegible]											
	30		gy vf xln [illegible]											
50-55	100		pale tan [illegible] vf xln											
55-60	100		[illegible] vf xln [illegible]											
60-65	100		Ab occ [illegible] silty											
65-66			No sample											
66-67			" "											
67-68	80		Dol Calc											
	20		[illegible] vf xln [illegible] silty [illegible]											
68-69	80		Dol [illegible] vf xln [illegible]				20					Sples [illegible]		[illegible]
69-70							20 vf sdy				50	argill vf [illegible]		
70-71											100	Ab possibly partly stnd.		
71-72	20		[illegible] vf xln								80	Ab argill		
72-73	[illegible]										100	[illegible] vf [illegible] argill [illegible]		
73-74	20		Ab.				30 silty							
74-75	80		[illegible] vf xln w/ occ vug porosity, [illegible]								20	Ab		
75-76	10		Ab								90	vf-f dolic stnd.		
76-77	50		[illegible] vf xln. Sples are coated w/ oil & are difficult to wash clean				20 silty				30	argill non stnd, [illegible]		
77-78	70		[illegible] vf xln [illegible]								30	Ab		Sples oil [illegible]
78-79	90		[illegible] vf xln [illegible]								10	Ab		" " "
79-80	100		[illegible] sm [illegible]											" " "
80-81	40		gy [illegible]				60 vf sdy-silty							
81-82											100	v argill vf		
82-83							50 Ab				50	Ab		
83-84	[illegible]		[illegible]								90	Ab partly stnd		
84-85	100		[illegible] vf xln w/ [illegible] vug porosity stnd [illegible]											
85-86	100		Ab [illegible] Sples [illegible] possibly could produce [illegible] oil									[illegible]		
86-87	100		Ab [illegible]									[illegible]		
87-88	100		[illegible] [illegible]									[illegible]		
88-89	100		Ab.									" " " "		
89-90	70		Ab				30 silty [illegible]					" " " "		

WELL DIVISION OF THE DOW CHEMICAL COMPANY

FIELD LABORATORY REPORT

WATER ANALYSIS

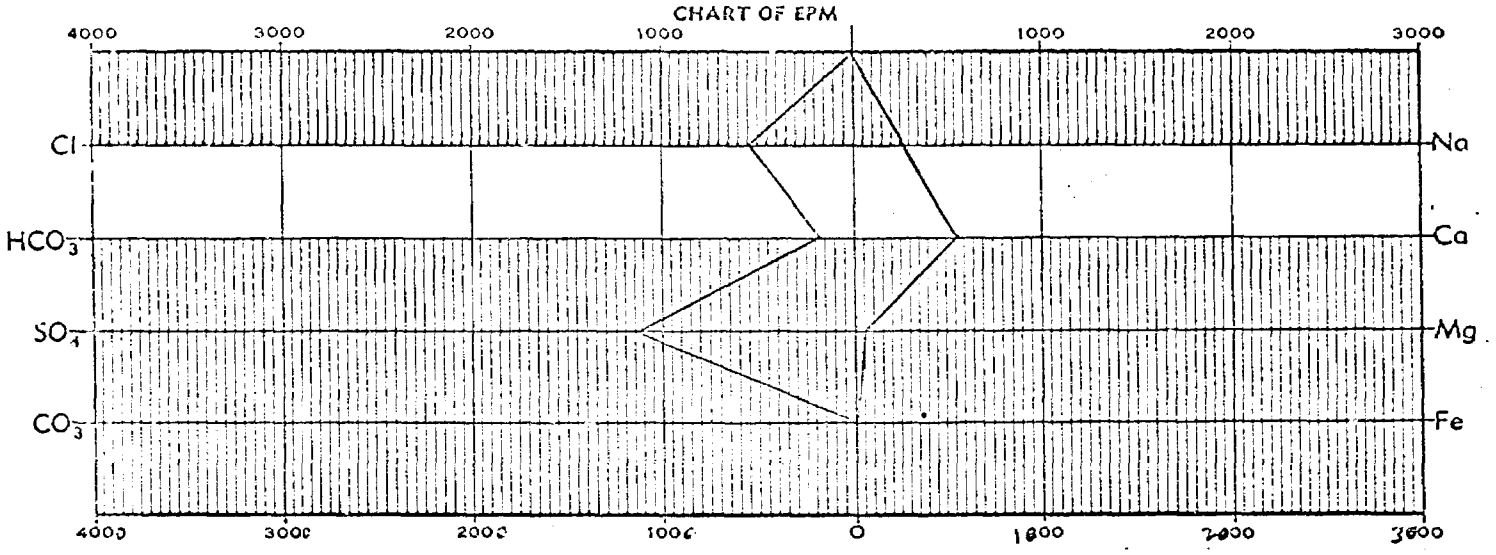
TO:

LABORATORY LOCATION: Midland, Texas	REPORT NUMBER:
COMPANY: Yates Pet Corp	WELL: Calvin No. 7
POOL:	LOCATION:
COUNTY: Eddy	STATE: New Mexico
DATE SAMPLE SUBMITTED:	FORMATION: Seven Rivers
SAMPLE SOURCE:	SUBMITTED BY:
	TESTS DESIRED:

	Mg/L	EPM		Mg/L	EPM
CALCIUM	530	13.2	CHLORIDE	568	16
MAGNESIUM	49	2	SULFATE	1120	11.7
SODIUM	253	11.0	BICARBONATE	171	2.8
IRON			CARBONATE		
HYDROGEN SULFIDE	0		HYDROXIDE		

SPECIFIC GRAVITY: 1.004 AT °F pH 7.3 $CaCl_2/MgCl_2$ % SALT SATURATION:

CHART OF EPM



REMARKS: Total Solids = 2286

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 4
CASE NO. 4344

4

CHEMIST DATE

DWL-451-B

Production by [illegible] – [illegible]

[illegible] (Grisham?)	
9-61	150
10-61	245
11-61	30
12-61	122
1961	567
1-62	70
2-62	97
3-62	19
1962	186
Cum	753

[illegible]	
10-68	95
11-68	[illegible]
12-68	37
1968	[illegible]
1-69	73
2-69	114
3-69	130
4-69	73
5-69	131
6-69	111
7-69	67
8-69	112
9-69	27
10-69	60
11-69	80
12-69	47
1969	904
1-70	22
1970	22
Cum	1199

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 4345

5

YATES DRILLING COMPANY
YATES BUILDING – 207 SOUTH 4TH ST. – DIAL 746-3558
ARTESIA, NEW MEXICO – 88210

S. P. YATES, PRESIDENT
HUGH W. PARRY, SEC.-TREAS.

March 23, 1970

Case 4345

Mr. A.L. Porter, Secretary-Director
Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Application to dispose of produced water into Seven Rivers formation, West McMillan Pool, Eddy County, New Mexico.

Dear Mr. Porter:

Yates Drilling Company seeks permission to re-enter two abandoned oil wells and recomplete for the disposal of produced water by gravity flow into the Seven Rivers formation, located on the Galvin lease, S/2 SW/4 of Section 12, Township 20-South, Range 26-East, McMillan Seven Rivers Queen West Pool, Eddy County, New Mexico.

The oil well currently producing on this lease is Galvin No. 7 located 990/S 1650/W and completed in the interval 73-80 feet. The proposed disposal wells are:

Galvin No. 8 990/S 2310/W Unit N. Sec. 12 Interval 69-86'
Galvin No. 14 1155/S 1485/W Unit N. Sec. 12 Interval 69-86'

Lease Plat showing location of proposed disposal wells and other wells, lessees and completion horizons within a two-mile radius is attached hereto, also diagrammatic sketch of the disposal wells with pertinent data, sample description logs, and water analysis.

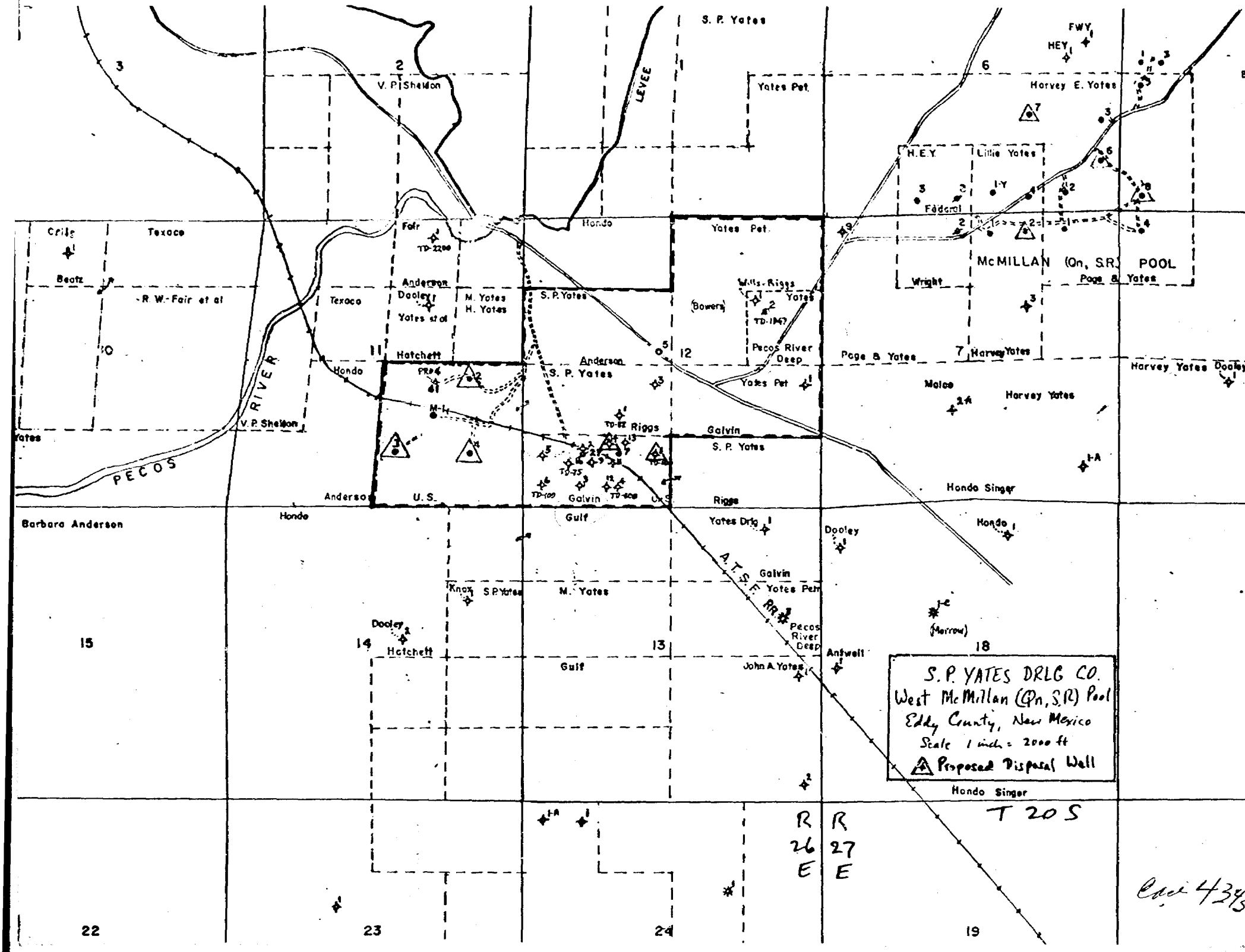
Please set for hearing in Hobbs on April 15th. Thank you.

Yours very truly,

YATES DRILLING COMPANY

Eddie M. Mahfood
Petroleum Engineer

EMM/jg



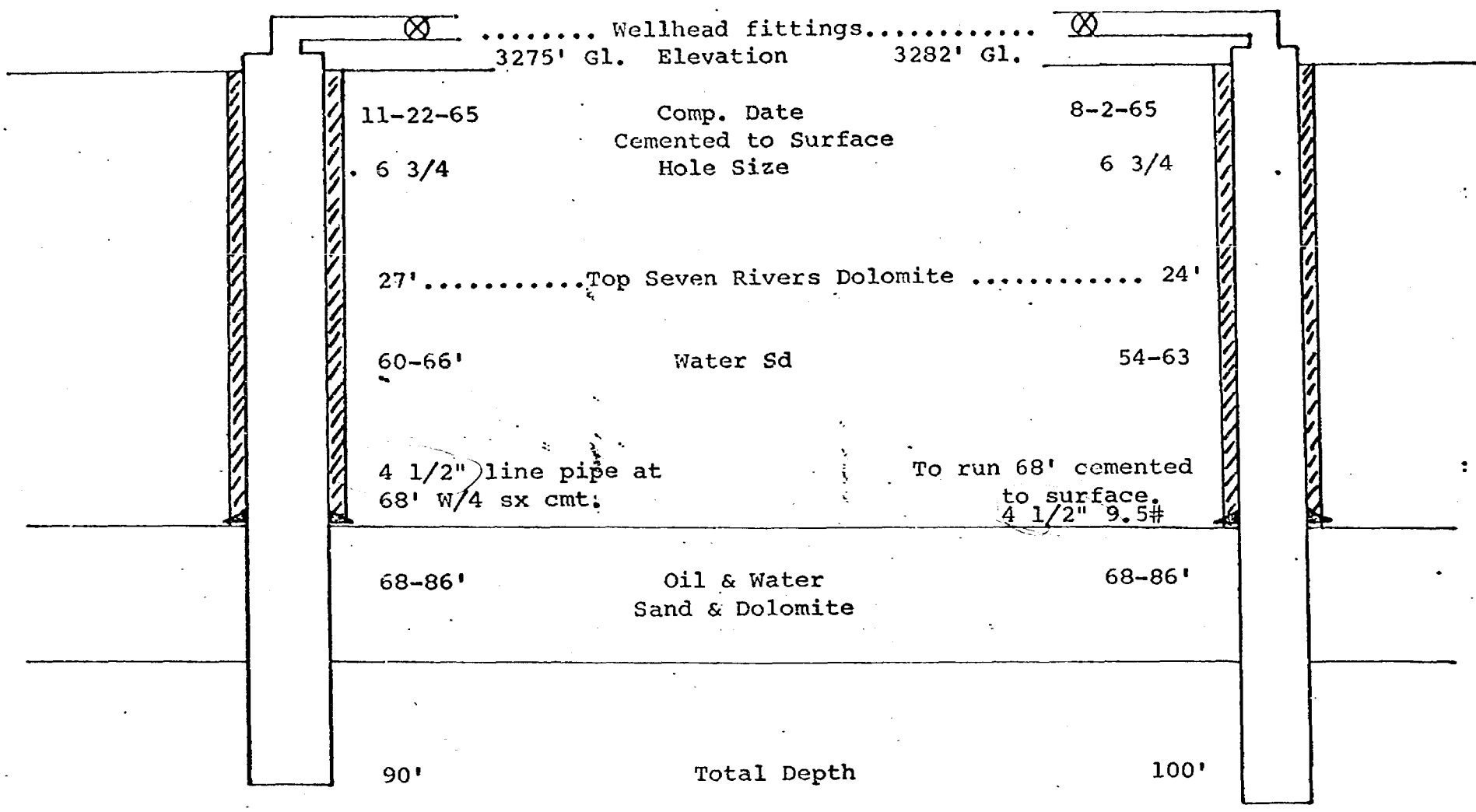
S. P. YATES DRLG CO.
West McMillan (Gn, S.R.) Pool
Eddy County, New Mexico
Scale 1 inch = 2000 ft
▲ Proposed Disposal Well

T 20 S

R 26 E | R 27 E

Case 4345

DIAGRAMMATIC SKETCH OF DISPOSAL WELLS
YATES DRILLING COMPANY
West McMillan (S.R.), Eddy County, N.M.



Case 4245

DOWELL **WELL** DIVISION OF THE DOW CHEMICAL COMPANY

FIELD LABORATORY REPORT

WATER ANALYSIS

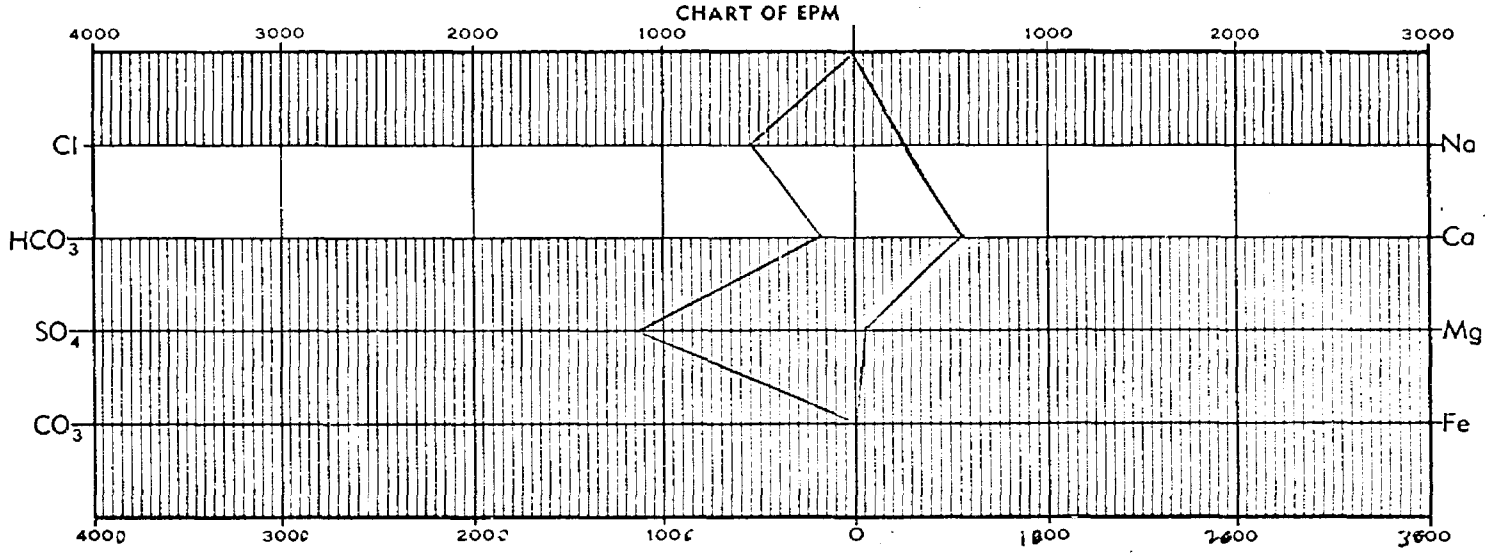
TO:

LABORATORY LOCATION: Midland, Texas	REPORT NUMBER:
COMPANY: Yates Pet Corp	WELL: Galvin No. 7
POOL:	LOCATION:
COUNTY: Eddy	STATE: New Mexico
DATE SAMPLE SUBMITTED:	FORMATION: Devern Rivers
SAMPLE SOURCE:	DEPTH:
SUBMITTED BY:	TESTS DESIRED:

	Mg/L ~~PPM~~	EPM		Mg/L ~~PPM~~	EPM
CALCIUM	530		CHLORIDE	568	
MAGNESIUM	49		SULFATE	1120	
SODIUM	253		BICARBONATE	171	
IRON			CARBONATE		
HYDROGEN SULFIDE	0		HYDROXIDE		

SPECIFIC GRAVITY: 1.004 AT °F | pH 7.3 | $CaCl_2/MgCl_2$ | % SALT SATURATION:

CHART OF EPM



REMARKS:

Case 4345

CHEMIST DATE

DWL-451-B

STATE	COUNTY	FIELD	DESC. BY	COMPANY

KIND OF SAMPLES	LOCATION	S	T	R	FARM	WELL NO.

DEPTH	DOLO %	LIME %	Description	SALT %	ANHY %	SHALE Red	SHALE Gry.	SHALE Grn.	SHALE Blk.	SAND Red	SAND Gry.	SAND Description	CHT. %	NOTES
0-5											100			
5-10														
10-15														
15-20														
20-25														
25-30														
30-35														
35-40														
40-45														
45-50														
50-55														
55-60														
60-65														
65-68														
68-69														
69-70														
70-71														
71-72														
72-73														
73-74														
74-75														
75-76														
76-77														
77-78														

78-79														
79-80														

STATE	COUNTY	ELEVATION	DESC. BY	COMPANY
N. Mex	[illegible]	3[illegible]	[illegible]	[illegible]

KIND OF SAMPLES	LOCATION	S	T	R	FARM	WELL NO.
Rotary [illegible]	2310' [illegible]					[illegible]

DEPTH	DOLO %	LIME %	Description	SALT %	ANHY %	SHALE Red	SHALE Gry	SHALE Grn	SHALE Blk	SAND Red	SAND Gry	SAND Description	CHT. %	NOTES
62-63	100		[illegible] of some [illegible]											
63-69	[illegible]		[illegible]				[illegible]							
69-70	20										80	[illegible]		light [illegible]
70-71											100	[illegible]		[illegible]
71-72											100	[illegible] 80% w/ [illegible] & [illegible]		[illegible]
72-73			No sample											
73-74											100	Ab 100% w/ [illegible]		[illegible]
74-75											100	Ab 50% [illegible] Much of [illegible] is [illegible] non stained [illegible]		[illegible]
75-76											100	Ab 20% w/ [illegible]		
76-77	100		bn w/ some [illegible] streaks [illegible] doesn't [illegible] that is [illegible] 30% w/ staining											
77-78			bn vxln [illegible] 10% w/ staining											
78-79			Ab vf-[illegible] no stain											
79-80	30		bn tan 70% of [illegible] w/ fluor								70	[illegible]		
80-81	100		bn tan vfxln, [illegible] coated w/ [illegible]									[illegible]		[illegible]
81-82	100		bn [illegible] 80% of [illegible] w/ [illegible]									[illegible]		[illegible]
82-83	100		Bn vfxln 20% w/ [illegible]									[illegible] 20% w/ [illegible]		
83-84	100		Bn [illegible] w/ some [illegible] 20% w/ [illegible] 30% w/ [illegible] Lot of [illegible] might [illegible]									[illegible]		
84-85	50		Ab 30% [illegible]								50	[illegible] partly stnd [illegible]		
85-86	20		Ab 20% [illegible]								80	bn w/ [illegible] SS, bn stain is [illegible]		
86-87			No sample											
87-88			No sample											
88-89			No sample											
89-100	100		[illegible] 60% [illegible] 70% w/ [illegible]									[illegible]		

[illegible] 4545

STATE	COUNTY	ELEVATION	DESC. BY	COMPANY
N. Mex.	[illegible]	3773 GL	[illegible]	[illegible] Yates

KIND OF SAMPLES	LOCATION	S	T	R	FARM	WELL NO.
Rotary Air	[illegible]	13	[illegible]	[illegible]	Graham	14

DEPTH	DOLO %	LIME %	Description	SALT %	ANHY %	SHALE Red	SHALE Gry.	SHALE Grn.	SHALE Blk.	SAND Red	SAND Gry.	SAND Description	CHT. %	NOTES
0-10			40% Caliche ([illegible]			[illegible]	[illegible]		[illegible]			[illegible]		[illegible]
10-15							[illegible]				70	yels gy [illegible]		
15-20							[illegible]				70	[illegible]		
20-25							100	[illegible]				[illegible]		
25-30	70		Tan [illegible]				[illegible]	[illegible]						
30-35	70						30	[illegible]						
35-40	70						30	[illegible]				[illegible]		
40-45	70		tan wh [illegible]				30	[illegible]			[illegible]	yel gy [illegible]	11	
45-50	70		[illegible] dense											
	30		gy vf xln dense											
50-55	100		pink tan wh [illegible] gy vf xln											
55-60	100		H gy - gy vf xln dense											
60-65	100		Ab occ sl [illegible] silty											
65-66			No sample											
66-67			" "											
67-68	80		Dolo											
	20		[illegible] vf xln [illegible] sl [illegible]											
68-69	80		Dol H gy vf xln dense				20					Sples apparently		oil coated
69-70							20	vf sdy			80	argill vf [illegible]		
70-71											100	Ab possibly partly std.		
71-72	20		H gy vf xln								80	Ab argill		
72-73											100	H gy vf sl argill		w/ sandy?
73-74	70		Ab				30	silty						
74-75	80		H gy - pink vf xln								20	[illegible]		
			w/ occ vug possibly [illegible]											
75-76	10		Ab								90	vf-f dolic std.		
76-77	50		H gy vf xln.				20	silty			30	argill [illegible] std, [illegible] sd.		
			Sples [illegible] coated w/ oil [illegible]									difficult to wash clean		
77-78	70		H gy vf xln dense								30	Ab		Sples oil coated
78-79	90		H gy - wh vf xln dense								10	Ab		" " "
79-80	100		H gy + [illegible]				[illegible]							" " "
80-81	40		gy H gy				60	vf sdy silty						
81-82											100	v argill vf		
82-83							50	Ab			50	Ab		
83-84	[illegible]		[illegible]								90	Ab partly std		
84-85	100		H gy - wh [illegible]											
			vf xln w/ occ vug, possibly std [illegible]											
85-86	100		Ab								[illegible]	[illegible]		
			[illegible] possibly could produce											
86-87	100		Ab									oil coated		
87-88	100		H gy - gy									[illegible] coated w/ oil		
88-89	100		Ab								"	"	"	
89-90	70		Ab				30	silty			"	"	"	

Case 4345

DRAFT

GMH/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4345

Order No. R-3967

APPLICATION OF YATES DRILLING COMPANY
FOR SALT WATER DISPOSAL, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 29, 1970, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of May, 1970, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Yates Drilling Company, is the owner and operator of the Galvin Well No. 8 and the Galvin Well No. 14, both located in Unit N of Section 12, Township 20 South, Range 26 East, NMPM, West McMillan-Seven Rivers Pool, Eddy County, New Mexico.

(3) That the applicant proposes to utilize said wells to dispose of water produced by its Galvin Well No. 7 located in said Unit N by gravity into the Seven Rivers formation, with injection into the intervals as follows:

The open-hole interval from approximately 68 feet to 100 feet in its Galvin Well No. 8, and

The open-hole interval from approximately 68 feet to 90 feet in its Galvin Well No. 14.

(4) That the injection should be accomplished through:

~~_____ inch plastic lined~~ tubing installed in a packer set at approximately 67 feet in ~~the Galvin Well No. 8, and~~

~~_____ inch plastic lined tubing installed in a packer set at approximately 67 feet in the Galvin Well No. 14,~~

each well and that

that the casing-tubing annulus of each of the subject wells should be filled with an inert fluid~~, and that a pressure gauge should be attached to the annulus of each of the subject wells or the annulus left open at the surface in order to determine leakage in the casing, tubing, or packer.~~

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights, provided only water produced from the West McMillan - Seven Rivers Pool is disposed of into the subject wells.

IT IS THEREFORE ORDERED:

(1) That the applicant, Yates Drilling Company, is hereby authorized to utilize its following-described wells in Unit N of Section 12, Township 20 South, Range 26 East, NMPM, West McMillan-Seven Rivers Pool, Eddy County, New Mexico, to dispose of ~~produced~~ produced from said pool into the Seven Rivers formation ~~salt~~ water into the ~~San Andres and possibly other formations~~ Seven Rivers formation:

Galvin Well No. 8, injection to be accomplished by gravity through ~~_____ inch~~ tubing installed in a packer set at approximately 67 feet, with injection into the open-hole interval from approximately 68 feet to 100 feet, and

Galvin Well No. 14, injection to be accomplished by gravity through ~~_____ inch~~ tubing installed in a packer set at approximately 67 feet, with injection into the open-hole interval from approximately 68 feet to 90 feet;

that only water produced from the West McMillan-Seven Rivers Pool is disposed of into the subject wells.

PROVIDED HOWEVER, ~~that the tubing of each of the subject wells shall be plastic lined~~; that the casing-tubing annulus of each of the subject wells shall be filled with an inert fluid, ~~and that a pressure gauge shall be attached to the annulus of each of the subject wells or the annulus left open at the surface in order to determine leakage in the casing~~, tubing, or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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