

CASE 7264: CITIES SERVICE COMPANY FOR  
A SALT WATER DISPOSAL WELL, MCKINLEY  
COUNTY, NEW MEXICO

Case No.

7264

Application

Transcripts

Small Exhibits

ETC

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO  
3 June 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Cities Service Com-  
pany for a salt water disposal well,  
McKinley County, New Mexico.

CASE  
7264

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

Ernest L. Padilla, Esq.  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico 87501

For the Applicant:

Jason Kellahin, Esq.  
KELLAHIN & KELLAHIN  
500 Don Gaspar  
Santa Fe, New Mexico 87501

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I N D E X

E. F. MOTTER

Direct Examination by Mr. Kellahin

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Cross Examination by Mr. Stamets

16

E X H I B I T S

Applicant Exhibit One, Plat

4

Applicant Exhibit Two, Structure Map

8

Applicant Exhibit Three, Cross Section

9

Applicant Exhibit Four, Water Analysis

10

Applicant Exhibit Five, Schematic

12

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MR. STAMETS: The hearing will please  
come to order.

4

We'll call next Case 7264.

5

6

7

MR. PADILLA: Application of Cities  
Service Company for salt water disposal well, McKinley County,  
New Mexico.

8

9

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11

12

(Witness sworn.)

13

14

E. F. MOTTER

15

16

being called as a witness and being duly sworn upon his oath,  
testified as follows, to-wit:

17

18

DIRECT EXAMINATION

19

BY MR. KELLAHIN:

20

Q

21

Mr. Motter, are you familiar with the  
application of Cities Service Company in Case Number 7264?

22

A.

Yes, I am.

23

Q

24

What does the applicant propose in this  
case?

25

A.

We are -- propose to dispose produced

1  
2 salt water in the Entrada formation in the Citics Service  
3 Federal "E" No. 2. This is in the Paper Wash Field in  
4 McKinley County.

5 Q Have you ever testified before the Oil  
6 Conservation Commission or one of its examiners, and had your  
7 qualifications accepted?

8 A Yes, numerous times.

9 MR. KELLAHIN: Are the witness' qualifi-  
10 cations acceptable?

11 MR. STAMETS: They are.

12 Q Mr. Motter, would you refer to what has  
13 been marked as Citics Service Exhibit Number One and identify  
14 that exhibit, please?

15 A Yes. This is a plat of the Papers Wash  
16 area in McKinley County. We have an arrow drawn to the pro-  
17 posed disposal well, which I'll go into more detail in a  
18 little bit. It indicates that this is the Federal "E" No. 2.  
19 To the north is the producing well, Federal "E" No. 1. We  
20 also have a dry hole across the lease line in Section 21, the  
21 Federal "M" No. 1, and if you'll note, on up about two miles  
22 north in Section 15, and by the way this is all in Township  
23 19 North, Range 5 West, is a Papers Wash Field, four producers  
24 of Dome Petroleum.

25 This is the structure we were playing

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2 when we drilled these wells in here.

3 I might point out that the yellow on  
4 there is, of course, Cities Service acreage, and you'll note  
5 there's a couple or another shade of yellow. We have recently  
6 acquired some more acreage in there and the plats were already  
7 made so I just went ahead and shaded them to show that we do  
8 own that acreage.

9 If I might, let me give you a little bit  
10 of a history about the Papers Wash Field and what we're  
11 planning on doing.

12 This field is located about 75 miles  
13 southwest of Farmington in the northwest corner of McKinley  
14 County, and oil was found in the upper crest of the Upper  
15 Jirassic or the Entrada sand dunes. The discovery well was  
16 drilled in 1976 and it has a very active water drive. The  
17 permeability is tremendous, actually about 290 millidarcies.

18 To the north there, there is quite a  
19 bit of oil that is being produced and also a tremendous amount  
20 of water. It's our understanding that they're producing  
21 about 20,000 barrels of water a day and disposing of that in  
22 a Gallup formation around 3000 feet.

23 And I might also, for the Examiner's  
24 benefit, advise that prior to drilling the Federal "E" No. 2,  
25 we had received administrative approval, and that is SWD-233,

1  
2 issued January the 9th, to drill a well, which would have been  
3 known as our Federal "E" No. 3 in Unit A of Section 28, 19  
4 North, Range 5 West, in McKinley County, into the Gallup  
5 formation.  
6

7 In drilling the Federal "E" No. 2 we  
8 encountered a very severe water flow in the Gallup and I'm  
9 going to refer just briefly to our drilling report on this  
10 well. This was encountered at 3117 and we actually estimated  
11 the flow to be from 10 to 15 barrels of water per hour. When  
12 we shut it in we'd have about 450 pounds of pressure on the  
13 surface, shut in.

14 We attempted for several days to over-  
15 come this by using weighted muds and it was very critical.  
16 If we'd get the mud too high, we'd lose it and if we'd try to  
17 keep it on a fairly stable point it would soon become satu-  
18 rated with the water we were encountering in the Gallup, and  
19 if it would become too light the flow would come back and  
20 see us,

21 So we finally just drilled ahead to  
22 3336 and set a string of 7-inch casing, cemented it, and this  
23 will be shown on our schematic.

24 We then drilled the well on down and  
25 ran a 4-1/2 inch liner to TD.

But after we ran into that, we decided



1  
2 that that would not be a good disposal zone in that particular  
3 area, and since No. 2 apparently was dry, we feel like this is  
4 a better selection.

5 MR. STAMETS: Mr. Motter, when you  
6 drilled the No. 1 Well, did you encounter any problems in  
7 that?

8 A. No, sir, nor did we in the "M" No. 1;  
9 not to that extent.

10 MR. STAMETS: What period of time are  
11 we talking about for drilling these wells?

12 A. Not too much time. I can actually give  
13 you the spud dates if you're interested, but it's not -- it's  
14 not too long a time.

15 MR. STAMETS: Less than a year?

16 A. Yes, less than a year.

17 MR. STAMETS: Do you have any clearcut  
18 indication that it's probable your No. 2 Well is directly  
19 related to the disposal to the north?

20 A. Well, I -- of course, I'm not saying.  
21 I don't know. In my own opinion it seems rather not logical  
22 that it would, but our geologists seem to think that a perme-  
23 ability streak or something like this in the sand. I -- I  
24 just can't pin it down in my own mind, being approximately  
25 two miles away, that there's that kind of a problem.

1  
2  
3 But on the other hand, I don't know what  
4 else to tell you.

5 MR. STAMETS: It's certainly interesting.

6 A. It is, very interesting.

7 We could probably conduct more tests and  
8 get some more information, but another thing that was ironical  
9 is the water was rather hot coming out of the ground; 140 and  
10 150 degrees.

11 Q. That is the reason you did not drill the  
12 salt water disposal well that had been approved, is that  
13 correct?

14 A. Well, that, and also because No. 2 was  
15 a dry hole and we decided it would probably be better just to  
16 liner it and make a disposal well out of it than go in and  
17 drill a second well; third well, I should say.

18 Q. So you did set a liner in --

19 A. Yes, we had considered quite seriously  
20 going into the Federal "M" No. 1 as the disposal well, and  
21 since it was a different lease there were a lot of complica-  
22 tions and also the Navajoes are involved and that would have  
23 taken quite a bit of time, and we felt like it was better we  
24 stay on the same lease.

25 Q. Now I refer you to what has been marked  
as Exhibit Number Two. Would you identify that exhibit?

1

9

2

A. Yes. That's a plat prepared by our

3

geologist, structure map, on top of the Entrada, and it does

4

show the same fields that we have discussed, the same wells,

5

and we do have the trace of the next exhibit, the cross section,

6

as well.

7

I'd like to point out one thing. You

8

will notice that the trace does not come down into the subject

9

well of this hearing, and that's because we have not been

10

able to log it. We tried for about three days to log it in

11

open hole and finally set the liner, and we will log it when

12

we go back in if we are successful in the Commission granting

13

an order for a salt water disposal.

14

I might also comment that the Federal

15

"M" has not been plugged yet. We'll do that, also, if an

16

order is granted on this well.

17

Q. And how would you plug it?

18

A. Well, we'll plug it to the Commission's

19

satisfaction, whatever they prescribe.

20

Q. Referring to what has been marked as

21

Exhibit Number Three, would you identify that exhibit?

22

A. Yes. This is a cross section of the

23

Papers Wash area and it does have the wells that produce from

24

the main field to the north.

25

The red shaded area is what's been

1  
2 thought to be the oil/water contact up to the north of a plus  
3 1400.

4  
5 Down in our particular area we, we have  
6 a much thinner section and we feel like in this particular  
7 area we'd pick it about plus 14 -- excuse me, 1527. However,  
8 to the right we do have a stick diagram on what we anticipate  
9 and these are sample tops from the various formations and we  
10 propose to perforate very low on structure, probably around  
11 5300 on down, keeping us below the oil/water contact in the  
12 larger field to the north.

13 Q Now does that cross section include all  
14 of the wells that are in proximity to your disposal well?

15 A Yes, basically. There are some other  
16 wells around that didn't go this deep and there are also a  
17 few dry holes up to the north which were not included.

18 Q But it does include the wells that  
19 penetrated the Entrada --

20 A Right.

21 Q -- is that correct?

22 A Well, yes, uh-huh.

23 Q Now referring to what has been marked  
24 as Exhibit Number Four, would you discuss that exhibit?

25 A Okay. This is a schematic of our  
Federal "E" 2.

Q. That's Number Five.

A. Pardon. I'm sorry. Number Four is results of a water analysis on this well, and I'd like for you to note that it's well known that the water up there is pretty good water. This indicates it's about 1300 parts per million chlorides, but it's still probably non-potable.

Q. Now that's the analysis of the Entrada water?

A. That's the analysis of the Entrada water from the Federal "E" No. 1, a producing well.

Q. And that's the zone you're going to dispose in.

A. That's the zone we're going to dispose in.

Q. Now, what's the source of the water that you're going to dispose?

A. The source of the water we're going to dispose is from this particular well, the Cities Service "E" No. 1.

Q. So you're putting the same water back into the same formation, is --

A. Right.

Q. -- that correct?

A. That's correct.

1  
2 Q Now, referring to Exhibit Number Five,  
3 would you identify that exhibit?

4 A Yes, this is a schematic of the Federal  
5 "E" No. 2. The location is 1650 from the north, 1990 from  
6 the east in Section 28, McKinley County. 9-5/8ths was set  
7 at 223 feet and the cement circulated. We set 7-inch, as I  
8 told you, to get through the Gallup at 3335. We cemented --  
9 ran a DV tool at 3040. Excuse me. We ran a DV tool at 2481.  
10 And we did not circulate cement on that second stage and we  
11 logged it and found the top of the cement on 650 on the liner  
12 for the 7-inch.

13 We then ran the 4-1/2 inch liner from  
14 3040 down to TD of 5355 and that was cemented with 140 sacks  
15 and we reversed out 20 sacks.

16 So with the exception of that little  
17 lap up there at the top we do have cement all the way to the  
18 surface. We don't think that's any particular problem.

19 Q Is there any fresh water above the  
20 injection zone?

21 A Not to my knowledge that's any problem  
22 in that area.

23 Q The completion you show on your Exhibit  
24 Number Five, would that protect any zone that might exist  
25 in there?

1  
2 A. I think that the surface pipe would  
3 more than protect any surface waters in there.

4 Q. And are there any potential producing  
5 zones above the injection horizon?

6 A. None to my knowledge.

7 Q. And if there were, would your casing  
8 and cementing --

9 A. Yes.

10 Q. -- protect those zones?

11 A. I might -- I might back up a minute.  
12 We've had, we've encountered some shows in some other zones  
13 but they haven't been thoroughly tested and it would be  
14 thoroughly protected by cement, yes.

15 Q. Now, under the Commission's rules, have  
16 you checked the casing and cementing program of any wells  
17 penetrating the Entrada within a half mile of your disposal  
18 well?

19 A. Yes, and I did not make an exhibit, but  
20 there are only two or actually only one, and I'll give you  
21 the data on that for the record.

22 The Federal "E" No. 1, which is our  
23 producing well, has 8-5/8ths set at 205 with 200 sacks and  
24 did circulate.

25 We have 5-1/2 set at 5450. Again we

1 ran a DV tool in this at 2245. The bottom stage is cemented  
2 with 700 sacks. The top stage is 650 sacks. And we had good  
3 circulation throughout but the cement didn't come around and  
4 we measured the top cement to 200 feet, which is into the  
5 surface casing.  
6

7 Now, the Federal "M" 1, which is pro-  
8 bably questionable whether it's half a mile or a little more,  
9 that's another dry hole, which will probably be plugged anyway.  
10 It has 8 and 5 at 227 with 110 sacks that circulated. We set  
11 5-1/2 at 5492, cemented the first stage with 480 sacks. A  
12 DV tool was set at 2786. It was cemented with 375 sacks.  
13 Again we had good circulation but didn't bring the cement to  
14 surface, and we measured it at 450 feet, so we do have a small  
15 interval there.

16 This well was perforated from 5252 to  
17 65, swabbed it for about four days and recovered nothing but  
18 water, and pending the outcome of this hearing, it will pro-  
19 bably be plugged.

20 Q. Now what kind of pressure do you antici-  
21 pate on your injection well?

22 A. We have -- I've had our reservoir en-  
23 gineers make some calculations, and with the bottom hole  
24 pressure in the area we've run drill stem tests on these wells.  
25 It was about 1880 pounds. Fresh water, of course, will give



1  
2 you much higher hydrostatic than that, and we -- the boys have  
3 made some calculations, the engineers, I should say, and we  
4 anticipate that we can go up to nearly 3000 barrels a day  
5 under gravity, and we're only producing about 250 barrels a  
6 day, so we don't anticipate any pressure on this.

7 Q Do you anticipate that there will be  
8 other wells producing water which you want to dispose of in  
9 this well?

10 A We have some plans to drill some more  
11 wells. I don't know exactly whether we're going to drill  
12 real close to this, but if the well has the capacity and other  
13 people may use -- may want to use it, we may allow some  
14 foreign water to be produced -- be injected in this well.

15 Q But you would keep the injection pres-  
16 sure below the --

17 A Yes.

18 Q -- Commission's regulations?

19 A I think -- I saw the order that came  
20 out on -- recently on the other, and I think we're limited  
21 up to 500 and some pounds on the surface going into the  
22 Gallup, and I don't anticipate we'll ever need to go near  
23 that on it, in the Entrada.

24 Q Were Exhibits One through Five prepared  
25 by you or under your supervision?

1

2

A. Yes, they were.

3

4

MR. KELLAHIN: At this time we offer Exhibits One through Five, inclusive.

5

6

MR. STAMETS: These exhibits will be admitted.

7

Q Do you have anything to add, Mr. Motter?

8

9

A. I think not. I believe we've covered everything. I'll be glad to answer any questions.

10

11

MR. KELLAHIN: That's all we have, Mr.

Stamets.

12

13

#### CROSS EXAMINATION

14

BY MR. STAMETS:

15

16

Q Mr. Motter, on Exhibit Number Five, 4-1/2 inch liner --

17

A. Yes.

18

19

Q Well, no, I see. Your 7-inch casing has sealed off the waterflood that you experienced.

20

A. Yes, it did, uh-huh.

21

22

Q Okay, and the 4-1/2 inch liner comes back through that section as well.

23

A. Right.

24

25

Q And I presume you intend to load the annular space in this well and be able to gauge it at the

1 surface.

2 A. We, we will set this up with the normal  
3 procedure. I didn't -- right now we have 2-3/8ths tubing in  
4 there that we've been testing the original well with, and  
5 quite frankly, I don't think it needs to be coated for corro-  
6 sion with the type of water we're handling. We'd be more than  
7 happy to do it, if necessary.

8 There is one thing: we might put some  
9 bigger tubing in sometime if we have -- went higher or used  
10 larger volumes to cut down on friction, but right now with  
11 the volume of water we have, we think this setup here will  
12 very adequately handle the situation.

13 I might comment on one thing. We've  
14 talked to -- I don't know who it was, somebody up here, maybe  
15 Ernie, or somebody, but as I mentioned, we do not have this  
16 thing logged and for that reason we have not filed any sundry  
17 notices or anything.

18 As soon as the thing is logged so we  
19 can go ahead and complete it, we'll gladly submit all those  
20 logs.

21 Q. Okay. What's the maximum size tubing  
22 that you could run in that 4-1/2 inch?

23 A. 3-1/2 inch. We could put -- it wouldn't  
24 be collared but it would be an interval joint.  
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Q

Okay. From Cities Service's analysis of the -- the zone in there, the Entrada zone, do you expect any separation to occur vertically within that zone from the section that's producing the oil down to the section that you'll be injecting into?

A.

No, I really don't. We've, as I said, we've run drill stem tests on several occasions in here, different depths, and we find that the oil is accumulated in the very top, as you would expect. This is, it's my understanding, not being a geologist, but having some knowledge of it, that it's just like sand dunes and with an oil accumulation at the very top of it.

I conceive of this injection process,

it will probably never interfere with static conditions out there because we'll be taking out 250 barrels a day and replacing that, kind of.

Q

You'll be just basically cycling the water --

A.

Cycling a little bit of water.

Q

-- in the same formation.

Would you expand a little bit on why

you feel that you don't need any vinyl material in this tubing?

A.

Well, because the salinity of this fluid is only 1300 parts and I just really don't feel like we

1  
2 would need any. In the first place, I don't anticipate the  
3 life of this well to be very long. It's producing 20 barrels  
4 a day and 250 barrels of water.

5 It's a matter of, I guess, getting it  
6 coated in southwest Texas and moving it up there, but we have  
7 no objection if you so desire. We can certainly coat it.

8 MR. STAMETS: Any other questions of  
9 the witness? He may be excused.

10 Anything further in this case?

11 MR. KELLAHIN: That's all we have, Mr.  
12 Stamets. Thank you.

13 MR. STAMETS: The case will be taken  
14 under advisement.

15  
16 (Hearing concluded.)  
17  
18  
19  
20  
21  
22  
23  
24  
25

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREPY CERTIFY that  
the foregoing Transcript of Hearing before the Oil Conserva-  
tion Division was reported by me; that the said transcript  
is a full, true, and correct record of the hearing, prepared  
by me to the best of my ability.

Sally W. Boyd CSR

SALLY W. BOYD, C.S.R.

Rt. 1 Box 193-B  
Santa Fe, New Mexico 87501  
Phone (505) 455-7409

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 7264  
heard by me on 6-3 1987.  
Richard R. Stamm, Examiner  
Oil Conservation Division

STATE OF NEW MEXICO  
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OIL CONSERVATION DIVISION  
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Ernest L. Padilla, Esq.  
Legal Counsel to the Division  
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Santa Fe, New Mexico 87501

For the Applicant:

Jason Kellahin, Esq.  
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500 Don Gaspar  
Santa Fe, New Mexico 87501

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## INDEX

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## EXHIBITS

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8 MR. KELLAHIN: If the Examiner please.  
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12 (Witness sworn.)

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18 DIRECT EXAMINATION

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20 Q Mr. Motter, are you familiar with the  
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22 A Yes, I am.

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24 case?

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20 also have a dry hole across the lease line in Section 21, the  
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22 3336 and set a string of 7-inch casing, cemented it and this  
23 will be shown on our schematic.

24 We then drilled the well on down and  
25 ran a 4-1/2 inch liner to TD.

But after we ran into that, we decided

1  
2 that that would not be a good disposal zone in that particular  
3 area, and since No. 2 apparently was dry, we feel like this is  
4 a better selection.

5 MR. STAMETS: Mr. Motter, when you  
6 drilled the No. 1 Well did you encounter any problems in  
7 that?

8 A. No, sir, nor did we in the "M" No. 1:  
9 not to that extent.

10 MR. STAMETS: What period of time are  
11 we talking about for drilling these wells?

12 A. Not too much time. I can actually give  
13 you the spud dates if you're interested, but it's not --- it's  
14 not too long a time.

15 MR. STAMETS: Less than a year?

16 A. Yes, less than a year.

17 MR. STAMETS: Do you have any clearcut  
18 indication that it's probable your No. 2 Well is directly  
19 related to the disposal to the north?

20 A. Well, I --- of course, I'm not saying.  
21 I don't know. In my own opinion it seems rather not logical  
22 that it would, but our geologists seem to think that a perme-  
23 ability streak or something like this in the sand. I --- I  
24 just can't pin it down in my own mind being approximately  
25 two miles away, that there's that kind of a problem.

1  
2  
3 But on the other hand, I don't know what  
4 else to tell you.

5 MR. STAMETS: It's certainly interesting.

6 A. It is, very interesting.

7 We could probably conduct more tests and  
8 get some more information, but another thing that was ironical  
9 is the water was rather hot coming out of the ground 140 and  
10 150 degrees.

11 Q That is the reason you did not drill the  
12 salt water disposal well that had been approved, is that  
13 correct?

14 A. Well, that, and also because No. 2 was  
15 a dry hole and we decided it would probably be better just to  
16 liner it and make a disposal well out of it than go in and  
17 drill a second well; third well, I should say.

18 Q So you did set a liner in --

19 A. Yes, we had considered quite seriously  
20 going into the Federal "M" No. 1 as the disposal well, and  
21 since it was a different lease there were a lot of complica-  
22 tions and also the Navajoes are involved and that would have  
23 taken quite a bit of time, and we felt like it was better we  
24 stay on the same lease.

25 Q Now I refer you to what has been marked  
as Exhibit Number Two. Would you identify that exhibit?

1  
2 A. Yes. That's a plat prepared by our  
3 geologist, structure map, on top of the Entrada. and it does  
4 show the same fields that we have discussed, the same wells,  
5 and we do have the trace of the next exhibit, the cross section,  
6 as well.

7 I'd like to point out one thing. You  
8 will notice that the trace does not come down into the subject  
9 well of this hearing, and that's because we have not been  
10 able to log it. We tried for about three days to log it in  
11 open hole and finally set the liner, and we will log it when  
12 we go back in if we are successful in the Commission granting  
13 an order for a salt water disposal.

14 I might also comment that the Federal  
15 "M" has not been plugged yet. We'll do that, also, if an  
16 order is granted on this well.

17 Q And how would you plug it?

18 A Well, we'll plug it to the Commission's  
19 satisfaction, whatever they prescribe.

20 Q Referring to what has been marked as  
21 Exhibit Number Three, would you identify that exhibit?

22 A Yes. This is a cross section of the  
23 Papers Wash area and it does have the wells that produce from  
24 the main field to the north.

25 The red shaded area is what's been

1  
2 thought to be the oil/water contact up to the north of a plus  
3 1400.

4 Down in our particular area we, we have  
5 a much thinner section and we feel like in this particular  
6 area we'd pick it about plus 14 -- excuse me, 1527. However,  
7 to the right we do have a stick diagram on what we anticipate  
8 and these are sample tops from the various formations and we  
9 propose to perforate very low on structure, probably around  
10 5300 on down, keeping us below the oil/water contact in the  
11 larger field to the north.

12 Q Now does that cross section include all  
13 of the wells that are in proximity to your disposal well?

14 A Yes, basically. There are some other  
15 wells around that didn't go this deep and there are also a  
16 few dry holes up to the north which were not included.

17 Q But it does include the wells that  
18 penetrated the Entrada --

19 A Right.

20 Q -- is that correct?

21 A Well, yes, uh-huh.

22 Q Now referring to what has been marked  
23 as Exhibit Number Four, would you discuss that exhibit?

24 A Okay. This is a schematic of our  
25 Federal "E" 2.



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Q That's Number Five.

A Pardon. I'm sorry. Number Four is results of a water analysis on this well, and I'd like for you to note that it's well known that the water up there is pretty good water. This indicates it's about 1300 parts per million chlorides, but it's still probably non-potable.

Q Now that's the analysis of the Entrada water?

A That's the analysis of the Entrada water from the Federal "E" No. 1, a producing well.

Q And that's the zone you're going to dispose in.

A That's the zone we're going to dispose in.

Q Now, what's the source of the water that you're going to dispose?

A The source of the water we're going to dispose is from this particular well, the Cities Service "E" No. 1.

Q So you're putting the same water back into the same formation, is --

A Right.

Q -- that correct?

A That's correct.

11  
12  
13  
14  
15  
1

3042 down to 3000 and then 3000  
 and we returned out to sea.  
 The other two started to climb  
 lap up there at the top and we were caught off the top of the  
 surface. We don't think there are any other things  
 in there and I don't know if there are.  
 Infection time  
 3042 down to 3000 and then 3000  
 and we returned out to sea.  
 The other two started to climb  
 lap up there at the top and we were caught off the top of the  
 surface. We don't think there are any other things  
 in there and I don't know if there are.  
 Infection time

1  
2 A. I think that the surface pipe would  
3 more than protect any surface waters in there.  
4

5 Q. And are there any potential producing  
6 zones above the injection horizon?

7 A. None to my knowledge.

8 Q. And if there were, would your casing  
9 and cementing --

10 A. Yes.

11 Q. -- protect those zones?

12 A. I might -- I might back up a minute.  
13 We've had, we've encountered some shows in some other zones  
14 but they haven't been thoroughly tested and it would be  
15 thoroughly protected by cement, yes.

16 Q. Now, under the Commission's rules, have  
17 you checked the casing and cementing program of any wells  
18 penetrating the Entrada within a half mile of your disposal  
19 well?

20 A. Yes, and I did not make an exhibit, but  
21 there are only two or actually only one, and I'll give you  
22 the data on that for the record.

23 The Federal "E" No. 1, which is our  
24 producing well, has 8-5/8ths set at 205 with 200 sacks and  
25 did circulate.

We have 5-1/2 set at 5450. Again we

1  
2 ran a DV tool in this at 2245. The bottom stage is cemented  
3 with 700 sacks. The top stage is 650 sacks. And we had good  
4 circulation throughout but the cement didn't come around and  
5 we measured the top cement to 200 feet, which is into the  
6 surface casing.

7 Now, the Federal "M" 1, which is pro-  
8 bably questionable whether it's half a mile or a little more,  
9 that's another dry hole, which will probably be plugged anyway.  
10 It has 8 and 5 at 227 with 110 sacks that circulated. We set  
11 5-1/2 at 5492, cemented the first stage with 480 sacks. A  
12 DV tool was set at 2786. It was cemented with 375 sacks.  
13 Again we had good circulation but didn't bring the cement to  
14 surface, and we measured it at 450 feet, so we do have a small  
15 interval there.

16 This well was perforated from 5252 to  
17 65, swabbed it for about four days and recovered nothing but  
18 water, and pending the outcome of this hearing, it will pro-  
19 bably be plugged.

20 Q Now what kind of pressure do you antici-  
21 pate on your injection well?

22 A We have -- I've had our reservoir en-  
23 gineers make some calculations, and with the bottom hole  
24 pressure in the area we've run drill stem tests on these wells.  
25 It was about 1880 pounds. Fresh water, of course, will give

1  
2 you much higher hydrostatic than that, and we --- the boys have  
3 made some calculations, the engineers, I should say, and we  
4 anticipate that we can go up to nearly 3000 barrels a day  
5 under gravity, and we're only producing about 250 barrels a  
6 day, so we don't anticipate any pressure on this.

7 Q Do you anticipate that there will be  
8 other wells producing water which you want to dispose of in  
9 this well?

10 A We have some plans to drill some more  
11 wells. I don't know exactly whether we're going to drill  
12 real close to this, but if the well has the capacity and other  
13 people may use --- may want to use it, we may allow some  
14 foreign water to be produced --- be injected in this well.

15 Q But you would keep the injection pres-  
16 sure below the --

17 A Yes.

18 Q --- Commission's regulations?

19 A I think --- I saw the order that came  
20 out on --- recently on the other, and I think we're limited  
21 up to 500 and some pounds on the surface going into the  
22 Gallup, and I don't anticipate we'll ever need to go near  
23 that on it, in the Entrada.

24 Q Were Exhibits One through Five prepared  
25 by you or under your supervision?

1  
2 A. Yes, they were.

3 MR. KELLAHIN: At this time we offer  
4 Exhibits One through Five, inclusive.

5 MR. STAMETS: These exhibits will be  
6 admitted.

7 Q. Do you have anything to add, Mr. Motter?

8 A. I think not. I believe we've covered  
9 everything. I'll be glad to answer any questions.

10 MR. KELLAHIN: That's all we have, Mr.  
11 Stamets.

12  
13 CROSS EXAMINATION

14 BY MR. STAMETS:

15 Q. Mr. Motter, on Exhibit Number Five,  
16 4-1/2 inch liner --

17 A. Yes.

18 Q. Well, no, I see. Your 7-inch casing  
19 has sealed off the waterflood that you experienced.

20 A. Yes, it did, uh-huh.

21 Q. Okay, and the 4-1/2 inch liner comes  
22 back through that section as well.

23 A. Right.

24 Q. And I presume you intend to load the  
25 annular space in this well and be able to gauge it at the

1  
2 surface.

3           A           We, we will set this up with the normal  
4 procedure. I didn't -- right now we have 2-3/8ths tubing in  
5 there that we've been testing the original well with, and  
6 quite frankly, I don't think it needs to be coated for corro-  
7 sion with the type of water we're handling. We'd be more than  
8 happy to do it, if necessary.

9                       There is one thing, we might put some  
10 bigger tubing in sometime if we have -- went higher or used  
11 larger volumes to cut down on friction, but right now with  
12 the volume of water we have, we think this setup here will  
13 very adequately handle the situation.

14                      I might comment on one thing. We've  
15 talked to -- I don't know who it was, somebody up here, maybe  
16 Ernie, or somebody, but as I mentioned, we do not have this  
17 thing logged and for that reason we have not filed any sundry  
18 notices or anything.

19                      As soon as the thing is logged so we  
20 can go ahead and complete it, we'll gladly submit all those  
21 logs.

22           Q           Okay. What's the maximum size tubing  
23 that you could run in that 4-1/2 inch?

24           A           3-1/2 inch. We could put -- it wouldn't  
25 be collared but it would be an interval joint.

1  
2 Q Okay. From Cities Service's analysis  
3 of the -- the zone in there, the Entrada zone, do you expect  
4 any separation to occur vertically within that zone from the  
5 section that's producing the oil down to the section that  
6 you'll be injecting into?

7 A No, I really don't. We've, as I said,  
8 we've run drill stem tests on several occasions in here, dif-  
9 ferent depths, and we find that the oil is accumulated in the  
10 very top, as you would expect. This is, it's my understanding,  
11 not being a geologist, but having some knowledge of it, that  
12 it's just like sand dunes and with an oil accumulation at the  
13 very top of it.

14 I conceive of this injection process,  
15 it will probably never interfere with static conditions out  
16 there because we'll be taking out 250 barrels a day and re-  
17 placing that, kind of.

18 Q You'll be just basically cycling the  
19 water --

20 A Cycling a little bit of water.

21 Q -- in the same formation.

22 Would you expand a little bit on why  
23 you feel that you don't need any vinyl material in this tubing?

24 A Well, because the salinity of this  
25 fluid is only 1300 parts and I just really don't feel like we



1  
2 would need any. In the first place, I don't anticipate the  
3 life of this well to be very long. It's producing 20 barrels  
4 a day and 250 barrels of water.

5 It's a matter of, I guess, getting it  
6 coated in southwest Texas and moving it up there, but we have  
7 no objection if you so desire. We can certainly coat it.

8 MR. STAMETS: Any other questions of  
9 the witness? He may be excused.

10 Anything further in this case?

11 MR. KELLAHIN: That's all we have, Mr.  
12 Stamets. Thank you.

13 MR. STAMETS: The case will be taken  
14 under advisement.

15  
16 (Hearing concluded.)  
17  
18  
19  
20  
21  
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25

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said Transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

*Sally W. Boyd C.S.R.*

I do hereby certify that the foregoing is a true and correct copy of the Transcript of Hearing before the Oil Conservation Division.

SALLY W. BOYD, C.S.R.  
Sumner, Pa. 15088  
Phone (412) 435-1409  
N. 1 Box 19310  
New Mexico 87101

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June 29, 1981

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

Re: CASE NO. 7264  
ORDER NO. R-6707

Applicant:

Cities Service Company

Dear Sir:

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

Yours very truly,

JOE D. RAMEY  
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD	<u>          </u>	X
Artesia OCD	<u>          </u>	X
Aztec OCD	<u>          </u>	X

Other

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 7264  
Order No. R-6707

APPLICATION OF CITIES SERVICE  
COMPANY FOR A SALT WATER DISPOSAL  
WELL, MCKINLEY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 3, 1981,  
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 25th day of June, 1981, the Division  
Director, 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 Division has jurisdiction of this cause and the  
subject matter thereof.

(2) That the applicant, Cities Service Company, is the  
owner and operator of the Federal "E" Well No. 2, located in  
Unit H of Section 28, Township 19 North, Range 5 West, NMPM,  
Papere Wash Field, McKinley County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Entrada formation, with  
injection into the perforated interval from approximately 5200  
feet to 5350 feet.

(4) That the injection should be accomplished through  
2 3/8-inch tubing installed in a packer set at approximately  
5100 feet; that the casing-tubing annulus should be filled with  
an inert fluid; and that a pressure gauge or approved leak  
detection device should be attached to the annulus in order to  
determine leakage in the casing, tubing, or packer.

-2-

Case No. 7264  
Order No. R-6707

(5) That if pressure above hydrostatic pressure is needed for injection the injection well or system should be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1020 psi.

(6) That the Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the Entrada formation.

(7) That the operator should notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(8) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(9) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Cities Service Company, is hereby authorized to utilize its Federal "E" Well No. 2, located in Unit H of Section 28, Township 19 North, Range 5 West, NMPM, Papers Wash Field, McKinley County, New Mexico, to dispose of produced salt water into the Entrada formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 5100 feet, with injection into the perforated interval from approximately 5200 feet to 5350 feet;

PROVIDED HOWEVER, that the casing-tubing annulus shall be filled with an inert fluid, and that a pressure geuge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That if pressure greater than hydrostatic pressure is needed for injection the injection well or system shall be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1020 psi.

(3) That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Entrada formation.

-3-

Case No. 7264  
Order No. R-6707

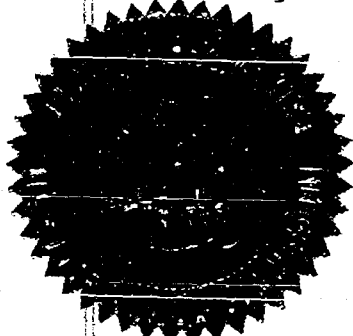
(4) That the operator shall notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(5) That the operator shall immediately notify the supervisor of the Division's Aztec district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

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

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

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



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

*Joe D. Ramey*  
JOE D. RAMEY  
Director

fd/

FEDERAL E # 2  
1650' FNL & 990' FEL  
SEC 28-T19N-R5W  
MCKINLEY COUNTY, NEW MEXICO  
GROUND LEVEL ELEVATION: 6645'

4 5/8" OD 32.3 # 8R H40 ST.C @ 223' CMT. LIRC.

TOL @ 650'

BEFORE EXAMINER STAMETS	
OIL CONSERVATION DIVISION	
EXHIBIT NO.	5
CASE NO.	7264
Submitted by	CITIES SERVICE
Hearing Date	6-3-81

DV TOOL @ 2481'

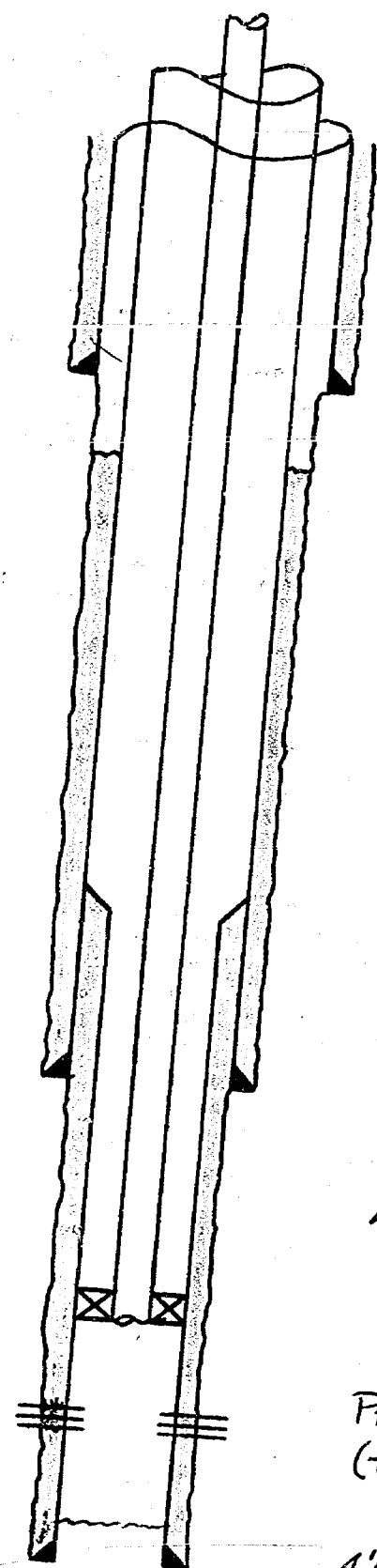
TOP OF 4 1/2" LINER @ 3040'

7" OD 20 # 8R K55 ST.C LSG @ 3335'

2 3/8" OD 4.7 # 8R J55 EUE TUBING  
W/PACKER SET @ ± 5100'

PROPOSED ENTRADA PERFORATIONS  
(TO BE DETERMINED FROM CASED HOLE  $\phi$  LOG)

4 1/2" OD 9.5 # 8R K55 ST.C LINER @ 5355'



T.D. 5355'

709 W. INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

### RESULT OF WATER ANALYSES

TO: Mr. Alex Innes LABORATORY NO. 68044  
P.O. Box 1919, Midland, Texas SAMPLE RECEIVED 6-4-80  
RESULTS REPORTED 6-6-80

COMPANY Cities Service Company LEASE Federal "E" #1

FIELD OR POOL \_\_\_\_\_

SECTION \_\_\_\_\_ BLOCK \_\_\_\_\_ SURVEY \_\_\_\_\_ COUNTY McKinley STATE New Mexico

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Recovered water - sample chamber, 6-4-80 (ENTRADA FORMATION)

NO. 2

NO. 3

NO. 4

## REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0067			
pH When Sampled				
pH When Received	7.2			
Bicarbonate as HCO <sub>3</sub>	708			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	90			
Calcium as Ca	29			
Magnesium as Mg	4			
Sodium and/or Potassium	1,346			
Sulfate as SO <sub>4</sub>	1,763			
Chloride as Cl	426			
Iron as Fe	83.3			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	4,276			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	1.90			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks	Please contact us if we can be of any assistance in interpretation of the above results.
---------------------------------------	--

BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION  
EXHIBIT NO. 4

CASE NO. 7264

Submitted by CITIZEN SERVICE

Hearing Date By 6-3-81  
Waylen C. Martin, M. A.



Cities Service  
Midland

915 ~~684-7131~~

685 5600

Inv order R-6707  
(7264)

709 W. INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

## RESULT OF WATER ANALYSES

TO: Mr. Alex Innes  
P.O. Box 1919, Midland, Texas

LABORATORY NO. 68044  
SAMPLE RECEIVED 6-4-80  
RESULTS REPORTED 6-6-80

COMPANY Cities Service Company LEASE Federal "E" #1

FIELD OR POOL \_\_\_\_\_  
SECTION \_\_\_\_\_ BLOCK \_\_\_\_\_ SURVEY \_\_\_\_\_ COUNTY McKinley STATE New Mexico

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Recovered water - sample chamber, 6-4-80 (ENTRADA FORMATION)

NO. 2

NO. 3

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0062			
pH When Sampled				
pH When Received	7.2			
Bicarbonate as HCO <sub>3</sub>	708			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	90			
Calcium as Ca	29			
Magnesium as Mg	4			
Sodium and/or Potassium	1,366			
Sulfate as SO <sub>4</sub>	1,763			
Chloride as Cl	426			
Iron as Fe	83.3			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	4,276			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	1.90			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

### Results Reported As Milligrams Per Liter

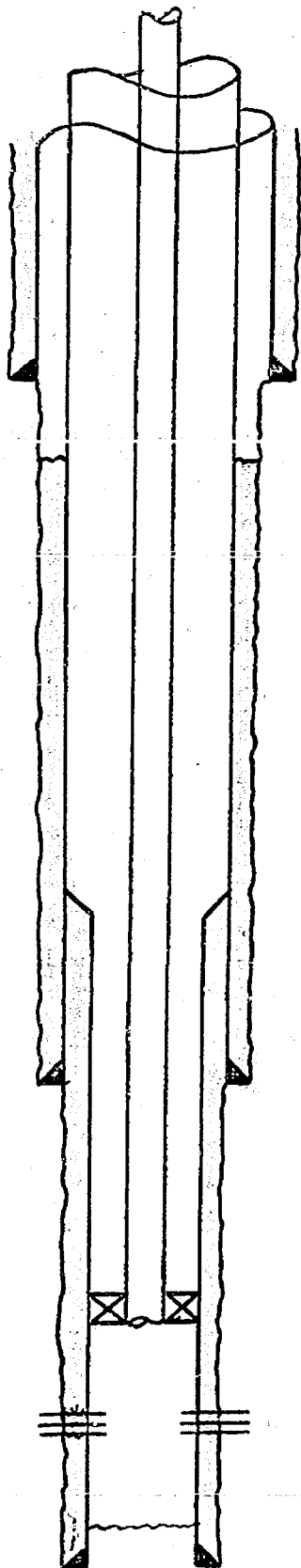
Additional Determinations And Remarks Please contact us if we can be of any assistance in the interpretation of the above results.

Form No. 3

By

Waylen C. Martin, M. A.

Exhibit 4  
Case 7264



FEDERAL E # 2

1650' FNL & 990' FEL

SEC 28-T19N-R5W

McKINLEY COUNTY, NEW MEXICO

GROUND LEVEL ELEVATION: 6645'

9 5/8" OD 32.3 # 8R H40 ST.C @ 223' Cmt. Linc.

TOL @ 650'

DV TOOL @ 2481'

TOP OF 4 1/2" LINER @ 3040'

7" OD 20 # 8R K55 ST.C LSC @ 3335'

2 3/8" OD 4.7 # 8R J55 EUE TUBING  
W/PACKER SET @ ± 5100'

PROPOSED ENTRADA PERFORATIONS  
(TO BE DETERMINED FROM CASED HOLE  $\phi$  LOG)

4 1/2" OD 9.5 # 8R K55 ST.C LINER @ 5355'

T.D. 5355'

Exhibit 5  
Case 7264

Jason Kellahin  
W. Thomas Kellahin  
Karen Aubrey

KELLAHIN and KELLAHIN  
*Attorneys at Law*  
500 Don Gaspar Avenue  
Post Office Box 1769  
Santa Fe, New Mexico 87501  
May 6, 1981

Telephone 982-4295  
Area Code 505

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

OIL CONSERVATION DIVISION

MAY 08 1981

Re: Water Disposal Application

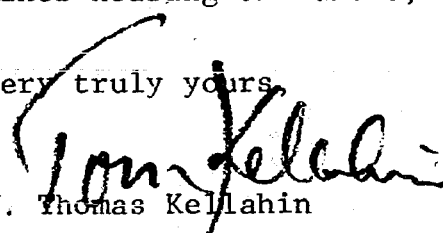
RECEIVED

Case 7264

Dear Joe:

Please set the enclosed application for hearing at  
the next available examiner hearing on June 3, 1981.

Very truly yours,

  
W. Thomas Kellahin

WTK/rr  
Enclosure

cc: E.F. Motter  
Robert Wheeler  
Charles Mitchell

STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY AND MINERALS  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION  
OF CITIES SERVICE COMPANY FOR A  
DISPOSAL WELL, MCKINLEY COUNTY  
NEW MEXICO.

OIL CONSERVATION DIVISION

JUN 3 1981

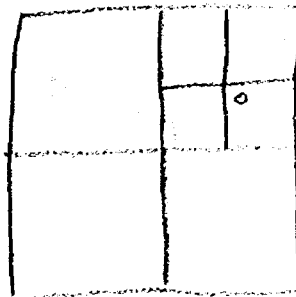
RECEIVED

A P P L I C A T I O N

Case 7264

COMES NOW CITIES SERVICE COMPANY, by and through its attorneys, KELLAHIN & KELLAHIN, and applies to the Oil Conservation Division of New Mexico for approval of a disposal well to dispose of produced water into the Entrada formation of its Federal "E" #2 well, 1650 feet from the North line of 990 feet from the East Line of Section 28, T19N, R5W, NMPM, McKinley County, New Mexico as a disposal well for disposal of produced water into the Entrada formation and in support thereof would show:

1. Applicant is the operator of the Federal "E" #2 well, located 1650 feet from the North line and 990 feet from the East line of Section 28, T19N, R5W, NMPM, McKinley County New Mexico.
  2. Applicant seeks authority to convert the subject well into a disposal well to dispose of produced water into the Entrada formation at a depth of 5200 feet to 5350 feet.
  3. Pursuant to Commission Rule 701, the applicant is forwarding separately to the Commission, the documentation set forth in said rule.
  4. The approval of the subject application will prevent waste, protect correlative rights and promote conservation.
- WHEREFORE, Applicant requests that this application be

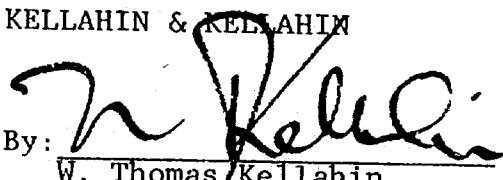


set for hearing before the Division's Examiner and after  
notice and hearing the application be granted as requested.

Respectfully submitted,

KELLAHIN & KELLAHIN

By:

  
W. Thomas Kellahin  
P.O. Box 1769  
Santa Fe, New Mexico 87501  
(505) 982-4285

STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY AND MINERALS  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION  
OF CITIES SERVICE COMPANY FOR A  
DISPOSAL WELL, MCKINLEY COUNTY  
NEW MEXICO.

OIL CONSERVATION DIVISION

10 8 1981

RECEIVED

A P P L I C A T I O N

Case 7264

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1. Applicant is the operator of the Federal "E" #2 well, located 1650 feet from the North line and 990 feet from the East line of Section 28, T19N, R5W, NMPM, McKinley County New Mexico.
2. Applicant seeks authority to convert the subject well into a disposal well to dispose of produced water into the Entrada formation at a depth of 5200 feet to 5350 feet.
3. Pursuant to Commission Rule 701, the applicant is forwarding separately to the Commission, the documentation set forth in said rule.
4. The approval of the subject application will prevent waste, protect correlative rights and promote conservation.


WHEREFORE, Applicant requests that this application be

set for hearing before the Division's Examiner and after  
notice and hearing the application be granted as requested.

Respectfully submitted,

KELLAHIN & KELLAHIN

By:

  
W. Thomas Kellahin  
P.O. Box 1769  
Santa Fe, New Mexico 87501  
(505) 982-4285



STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY AND MINERALS  
OIL CONSERVATION DIVISION

OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION  
OF CITIES SERVICE COMPANY FOR A  
DISPOSAL WELL, MCKINLEY COUNTY  
NEW MEXICO.

JUL 8 1981

RECEIVED

A P P L I C A T I O N

Case 7264

COMES NOW CITIES SERVICE COMPANY, by and through its attorneys, KELLAHIN & KELLAHIN, and applies to the Oil Conservation Division of New Mexico for approval of a disposal well to dispose of produced water into the Entrada formation of its Federal "E" #2 well, 1650 feet from the North line of 990 feet from the East Line of Section 28, T19N, R5W, NMPM, McKinley County, New Mexico as a disposal well for disposal of produced water into the Entrada formation and in support thereof would show:

1. Applicant is the operator of the Federal "E" #2 well, located 1650 feet from the North line and 990 feet from the East line of Section 28, T19N, R5W, NMPM, McKinley County New Mexico.

2. Applicant seeks authority to convert the subject well into a disposal well to dispose of produced water into the Entrada formation at a depth of 5200 feet to 5350 feet.

3. Pursuant to Commission Rule 701, the applicant is forwarding separately to the Commission, the documentation set forth in said rule.

4. The approval of the subject application will prevent waste, protect correlative rights and promote conservation.

WHEREFORE, Applicant requests that this application be

set for hearing before the Division's Examiner and after  
notice and hearing the application be granted as requested.

Respectfully submitted,

KELLAHIN & KELLAHIN

By: 

W. Thomas Kellahin  
P.O. Box 1769  
Santa Fe, New Mexico 87501  
(505) 982-4285

ROUGH

dr/

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 7264

Order No. R- 6707

APPLICATION OF CITIES SERVICE  
COMPANY FOR A SALT WATER DISPOSAL  
WELL, MCKINLEY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 3  
19 81, at Santa Fe, New Mexico, before Examiner Richard L. Stamets

NOW, on this \_\_\_\_\_ day of June, 19 81, the Division  
Director, 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 Division has jurisdiction of this cause and the subject  
matter thereof.

(2) That the applicant, Cities Service Company,  
is the owner and operator of the Federal "E" Well No. 2,  
located in Unit H of Section 28, Township 19 North,  
Range 5 West, NMPM, Papers Wash Field,  
McKinley County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Entrada  
formation, with injection into the perforated  
interval from approximately 5200 feet to 5350 feet.

(4) That the injection should be accomplished through 2 3/8  
-inch perforated tubing installed in a packer set at approxi-  
mately 5100 feet; that the casing-tubing annulus should be  
filled with an inert fluid; and that a pressure gauge or approved  
leak detection device should be attached to the annulus in order

to determine leakage in the casing, tubing, or packer.  
(5) That <sup>if pressure above hydrostatic pressure is needed for injection</sup> the injection well or system should be equipped

with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1020 psi.

(6) That the Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the Entrada formation.

(7) That the operator should notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(8) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(9) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Cities Service Company, is hereby authorized to utilize its Federal "E" Well No.2 located in Unit H of Section 28, Township 19 North Range 5 West, NMPM, Papers Wash Field, McKinley M&K County, New Mexico, to dispose of produced salt water into the Entrada formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 5700 feet, with injection into the perforated interval from approximately 5200 feet to 5350 feet;

PROVIDED HOWEVER, that the ~~tubing shall be plastic-lined;~~  
~~that the~~ casing-tubing annulus shall be filled with an inert  
fluid, and that a pressure gauge shall be attached to the annulus  
or the annulus shall be equipped with an approved leak detection  
device in order to determine leakage in the casing, tubing, or  
packer.

(2) That <sup>if pressure greater than hydrostatic pressure is needed for injection</sup> the injection well or system shall be equipped  
with a pop-off valve or acceptable substitute which will  
limit the wellhead pressure on the injection well to no more  
than 1020 psi.

(3) That the Director of the Division may authorize an  
increase in injection pressure upon a proper showing by the  
operator of said well that such higher pressure will not result  
in migration of the injected fluid from the Entrada  
formation.

(4) That the operator shall notify the supervisor of the  
Aztec district office of the Division of the date and  
time of the installation of disposal equipment so that the same  
may be inspected.

(5) That the operator shall immediately notify the super-  
visor of the Division's Aztec district office of the  
failure of the tubing, casing, or packer, in said well or the  
leakage of water from or around said well and shall take such  
steps as may be timely and necessary to correct such failure  
or leakage.

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

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

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