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CHER 7186; SUN THEAS COMPANY FOR SALT MAREN DISPOSAL, LEA COUNTY, NEW MEXICO

Case No.

7186

Application

Transcripts

Small Exhibits

ETC

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

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

> CASE NO. 7186 Order No. R-6646

APPLICATION OF SUN TEXAS COMPANY For salt water disposal, lea county, new mexico.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 e.m. on March 11, 1981, at Santa Fe, New Mexico, before Examiner Richard L. Stamete.

NOW, on this 7th day of April, 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, Sun Texas Company, is the owner and operator of the State C Account 1 Hell No. 3, located in Unit L of Section 2, Township 12 South, Range 33 East, NMPH, Bagley Field, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Devonian formation, with injection into the open hole interval from approximately 11,034 feet to 11,370 feet.

(4) That the injection should be accomplished through 3 1/2inch plastic lined tubing installed in a packer set at approximately 10,900 feet; that the casing-tubing annulus abould 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. 7186 Order No. R-6646

(5) That if injection is at a pressure above hydrostatic pressure the injection well or system should be equipped with a pressure limiting switch or device which will limit the wellhead pressure on the injection well to no more than 2200 psi.

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

(7) That the operator should notify the supervisor of the Hobbs 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 Gnnecessary wells and otherwise provent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Sun Texas Company, is hereby authorized to utilize its State C Account 1 Well No. 3, located in Unit L of Section 2, Township 12 South, Range 33 East, NMPH, Bagley Siluro-Devonian Pool, Les County, New Mexico, to dispose of produced salt water into the Devonian formation, injection to be accomplished through 3 1/2-inch tubing installed in a packer set at approximately 10,900 feet, with injection into the open hole interval from approximately 11,034 feet to 11,370 feet;

<u>PROVIDED HOWEVER</u>, 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 if injection is at a pressure above hydrostatic pressure, the injection well or system shall be equipped with a preasure limiting switch or device which will limit the wellhead pressure on the injection well to no more than 2200 psi. -3-Case No. 7186 Order No. R-6646

fd/

(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 Devonian formation.

(4) That the operator shall notify the supervisor of the Nobbs 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 Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leskage 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 disposel operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

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

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

STATE OF NEW MEXICO OIL CONSERVATION DIVISION MMA JOE D. RAMEY Director



BRUCE KING GOVERNOR LARRY KEHOE

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

April 9, 1981

POST OFFICE BOX 2008 BTATE LAND OFFICE BUILDING SANTA PE NEW MEXICO 87501 (305) 827-2434

Mr. William F. Carr Campbell, Byrd & Black Attorneys at Law Post Office Box 2208 Santa Fe, New Mexico

 CASE NO	7186
ORDER NO.	R-6646

Applicant:

Sun Texas Company

Dear Sir:

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

Pours very truly, JOE D. RAMEY Director

JDR/fd

Copy of order also sent to:

Hobbs OCD Artesia OCD Aztec OCD

Other

Company

MAR 1 2 1981

REGIONAL OFFICE MIDLAND, TEXAS 79701

P. O. BOX 4067 1509 WEST WALL STREET

TEL. 915-684-5584 TWX. 910-895-5324

March 6, 1981

011 Conservation Division New Mexico Department of Energy and Minerals P.O. Box 2088 Santa Fe, New Mexico 87501

Attention: Mr. Joe D. Ramey Director

> Re: Salt Water Disposal Lea County, New Mexico For Sun Texas Company

Dear Mr. Ramey:

Enclosed are two (2) revised copies of the N.M.O.C.C. Form C-108 which supercede any previously submitted forms. The revisions include squeezing off the open perforations and setting the packer at 10,900'.

Yours very truly,

SUN TEXAS COMPANY

POWO

R. J. Womack Midland Regional Manager

RJW/SJG/pls



A DIVISION OF SUN OIL COMPANY (DELAWARE)

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION DIVISION

-108 131-68 12

199

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(Signature)			(Tüle)		(Date)	
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NEW MEXICO OIL CONSERVATION COMMISSION

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MAR 12 1981 APPLICATION TO DISPOSE OF SALT WATER BY IN JECTION INTO A POR ~

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SUN TEXAS COMPANY			1	7, MIDLAND,		9704
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Mexico the applicati at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protect is processed if a protect is processed.

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State C YC 1 No.3 Elevation: 4254 DF Datum Zero EDF 1980'FSL & 660' F 41L Sect. 2, 7 12-5, 1233. Badley (Devonian > Fiold Lea Courty | New Mexic 133/8" 48 # H-40 @324 Cm+4 4/350 SX-Circ d 95/8"36 J-55@3894 Cmt'd ~/ 2700 5x-Circ'd PROPOSED 5.W. D.W. CONVERSION Perfid 45PF @ 9950 Circid Cont W/2800 st OTOC @ 9980' after 2005t 9950 3 /2 tubing W/Pkr @ 10,900' (Temp. Surv.) Perfins 10856-60 (ZSPF SWB'D DRY 10856: Perfins 10860-90 (15PF) Perfins 10856-90 to be 10,890至 Sqz'd 10907 = Perfins 10907-94 (510 JShots) Sq2'd W/ 50 sx 10,994 51/2" 17# N-80 @ 110 34 Cmt'd ~/ 200 sy Drid FC & Shoe to 11,033 INJECTION ZONE DRILL-OUT TO TDO

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REGIONAL OFFICE MIDLAND, TEXAS 79701

P. O. BOX 4067 1509 WEST WALL STREET

TEL 915-684-5584 TWX 910-895-5324

March 2, 1981

0il Conservation Division New Mexico Department of Energy and Minerals P. O. Box 2088 Santa Fe, New Mexico 87501

Attention: Mr. Joe D. Ramey Director

> RE: Salt Water Disposal Lea County, New Mexico For Sun Texas Company

Dear Mr. Ramey:

Enclosed is the N.M.O.C.C. Form C-108, Lease Water Analyses, location plat, and wellbore sketches as required by the Commission.

Very truly yours,

SUN TEXAS COMPANY older in

Melvin L. Schroeder Regional Engineer

SJG:1w

Enclosure



A DIVISION OF SUN OIL COMPANY (DELAWARE)

NEW MEXICO OIL CONSERVATION COMMISSION

					For [rRe:	
			CONSERVATION			MAR 10 1981
	TION TO DISP	OSE OF SALT WA				
SUN TEXAS COMPANY			BOX 4067	, MIDLAND, TE	KAS 79	CONS PUT IN DIVIS
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Amerada Hess, P. (
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at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

HALLIBURTON DIVISION LABORATORY NALLIBURTON SERVICES MIDLAND DIVISION HOBDS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS No. W81-171 To_Sun-Texas Oil Company 2-25-81 Date__ Box 4067 This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the Midland, Texas: _____ course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton ATTN: Scott Glaser Company. Submitted by_____ _____ Dote Rec. 2-24-81 Well No. As Marked ____ Depth_____ Formation Siluro-Devonian Lea Field Bagley _____ Source_____ County____ State "C" a/c #1 State "D" a/c #1 Resistivity 0.153 @ 74°F. 0.153 2 74°F. 1.035 _____ 6.0 _____ Calcium (Ca) 2,250 2,350 -----*MPL 60 ____ 26,500 Sulfates (SO₄) <u>2,300</u> 2,400 580 570 Bicarbonates (HCO₂) Nil Nil Soluble Iron (Fe) Remarks: *Milligrams per liter

Respectfully submitted,

Analyst: Brewer

cc: Elmer Teel, Sun-Texas Oil Co., Box 1255, Eunice, N.M.

HALLIBURTON COMPANY By.

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.



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	c	TATE OF NEW MEXICO
		AND MINERALS DEPARTMENT CONSERVATION DIVISION
•		TE LAND OFFICE BLDG.
		NTA FE, NEW MEXICO
		11 March 1981
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		EXAMINER HEARING
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	6)
	IN THE MATTER OF:	}
		Sun Texas Company)
2		disposal, Lea County,) CASE
	New Mexico.	aisposal, Lea councy,) CASE) 7186
	9)
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	BEFORE: Richard L. Stame	ets
	11	
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	13	SCRIPT OF HEARING
	14	
	15 A P	PEARANCES
* ••		
	16	
	For the Oil Conservation	Ernest L. Padilla, Esq.
	17 Division:	Legal Counsel to the Division
	18	State Land Office Bldg.
-		Santa Fe, New Mexico 87501
	19	
	~	
	20 For the Applicant:	William F. Carr, Esq.
	21	CAMPBELL, BYRD, & BLACK
		Jefferson Place Santa Fe, New Mexico 87501
	22	Dente Loy now how to be a
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	С. 1	
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2	MR. STAMETS: We'll call next Case 7186.
3	MR. PADILLA: Application of Sun Texas
4	Company for salt water disposal, Lea County, New Mexico.
5	MR. CARR: May it please the Examiner,
6	my name is William F. Carr, with the law firm of Campbell,
. 7	Byrd, and Black, and I'm appearing on behalf of the applicant,
8	Sun Texas Company, and I have one witness.
9	
10	(Witness sworn.)
11	
12	SCOTT J, GLASER
13	being called as a witness and being duly sworn upon his oath,
14	testified as follows, to-wit:
15	
16	DIRECT EXAMINATION
17	BY MR. CARR:
18	Q. Will you state your name and place of
19	residence?
20	A. My name is Scott J. Glaser, Midland,
21	Texas.
22	Q. Mr. Glaser, by whom are you employed
23	and in what capacity?
24	A. I'm employed by Sun Texas Company as
25	an engineer.

ł Û. Have you previously testified before 2 this Commission and had your credentials accepted and made a 3 matter of record? No, sir. A. 5 Will you briefly summarize for the space Q. Examiner your educational background and your work experience? 7 My educational background consists of A. a Bachelor's of Science at Purdue University, mechanical 9 engineering, and one year of graduate school, majoring in 10 geology. 11 I'm a member of two professional societies, 12 the Society of Automotive Engineers, and a junior member of 13 the SPE. 14 Summer employment while going through 15 college, for three summers I worked as a project engineer in 16 the textile industry, and I have had approximately one year 17 experience in the oil field, six months working as an engineer 18 for The Seismograph Service Corporation, geophysical survey 19 company, and approximately six months with Sun Texas Company 20 as a development engineer. 21 Are you familiar with the application Q. 22 filed in this case? 23 Yes. A. 24 Are you familiar with the subject well? 0 25

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5 ĩ 2 A. Yes, sir. 3 MR. CARR: Are the witness' qualifications acceptable? MR. STAMETS: They are. Mr. Glaser, will you briefly state what Q 7 Sun Texas Company seeks with this application? â Sun Texas Company seeks approval to A. 9 convert the presently TA'd State C Account No. 1 Well No. 3 10 to salt water disposal service. It is located in Unit L 11 of Section 2, Township 12 South, Range 33 in the Bagley-12 Siluro-Devonian Pool. 13 Have you prepared certain exhibits for Q 14 introduction in this case? 15 Yes, sir. A. 16 Will you please refer to what has been Q. 17 marked for identification as Sun Exhibit Number One and ex-18 plain to the Examiner what it is and what it shows? 19 Sun Exhibit Number One is the NMOCC A. 20 Form C-108, Application to Dispose Salt Water by Injection, 21 for the proposed well, to conversion salt water disposal 22 service. 23 The proposed injection -- the proposed 24 formation for injection is the Devonian. The top of the 25 Devonian is at 10,146 feet. The bottom of the interval is

not penetrated.

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We plan to inject through open hole. The proposed interval of injection will be from 11,034 feet to 11,370 feet. As such, the well consists of squeezed perfs and open perfs. The squeezed perfs are noted. The open perfs are 10,856 feet through 90 feet, and they will be squeezed prior to injection.

9 I would like to interject that this is
10 a revision to what we originally applied for. We plan only
11 to inject into the open hole.

12 Q. When was this well drilled?
13 A. This well was drilled in April of 1950
14 and it was TA'd in November, 1970, as uneconomical to produce
15 Q. Will you now refer to Exhibit Number
16 Two and review this for the Examiner?

A. Yes, sir. Exhibit Number Two is a plat of the area noting the wells within a two mile radius of the proposed salt water disposal conversion.

I direct your attention to the three shaded blue boxes. The central shaded blue box is the proposed salt water disposal well, located in Unit L of Section 2, the Sun Texas Company Nc. 3.

The upper shaded box is the present salt
water disposal well for the area, and it is the Amerada BTC

2 Salt Water Disposal No. 4.

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3 The lower shaded blue box consists of the P&A'd salt water disposal wells that have been used in 5 the past. They consist of two Amerada wells, Chambers No. 1 and 2, and the Sun Texas Company State B Account No. 1 Well No. 2.

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The color coding transparent dots over 9 the wells denote the formations from which the wells have 10 been producing. I direct your attention to the lower lefthand 11 corner. The red overlays denote the Devonian; the Orange, 12 the Bagley-Penn, and so on.

This exhibit also shows the lease owner-Q. ship in the area.

Yes, sir. The yellow shaded areas are A. the areas owned by Sun Texas Company. I'll further emphasize that all the shaded colorings you've seen on this map corresponds to the Sun Texas Company code. Amerada wells and other companys are denoted by the superscripts over these.

Some of the acreage is not only shaded Q. in yellow but has a ged line around it, and I believe some of the tracts are also shaded in green. This shading does not have any bearing on this application here today.

No, sir. The outline red denotes area A. that has been farmed out by Sun Texas and I believe the

lightly shaded green is area under consideration for farmout. Q. Will you now refer to what has been

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marked for identification as Sun Exhibit Number Two-A and explain to the Examiner what this shows?

A. Exhibit Two-A is a tabular form of the producing formations of the wells -- for the wells within the two-mile radius of the proposed conversion. It denotes the well name and number, the operator, its unit and section, township range, and the formation, and its current status. 0. Will you now refer to Sun Exhibit Number

Three?

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A Sun Exhibit Number Three is a diagrammatic sketch of the proposed salt water disposal well conversion. It denotes the casing strings, number of sacks cemented for eacl string, the tubing size, depth, and packer set depth. It should be noted that all the cement -- all strings are fully cemented to the surface. There are perforations which have been squeezed at 10,907 feet through 10,994 feet, which will be below the packer.

The perforations from 10,856 to 10,890 feet are perforations that are currently open but will be squeezed prior to injection.

The well presently is TD'd at 10,034
feet and will have be drilled out to -- excuse me, 11,034

9 1 2 feet, and will have to be drilled out to 11,370 feet. 3 Q. If the application is approved, in your opinion will the proposed injection pose a threat of contamin 4 5 ation either gas, oil, or water, in the area? 6 No, the proposed completion will not --A. 7 will pose no threat to these zones. 8 MR. STAMETS: While we're right there, 9 could I ask a question? 10 A. Yes, sir. 11 MR. STAMETS: Do you have some perfora-12 tions at 9950? 13 Yes, sir. Those are perforations which A. 14 allowed us to cement the upper portion of the 5-1/2 casing 15 string, I should have explained that. When we --16 MR. STAMETS: So those are effectively 17 sealed. 18 Yes, sir. A. 19 What is the source on the water you Q 20 propose to inject in the subject well? 21 Referring to Exhibit Two, the plat of A. 22 the area, the source of the water, the wells which will be, 23 water will be disposed of, is located in Section 2, Unit A, 24 which is the Sun Texas State D Account 1 Well No. 1; in 25 Section -- excuse me, in Unit B, Sun Texas State C Account 1

1	10
2	Well No. 1; and in Section F, the Sun Texas State C Account
3	No. 1 Well No. 2. These three wells will be will have
4	their produced water disposed of.
5	Q. What have you been doing with the water
6	that has been produced by these wells?
7	A Previously we have disposed of them in
8	the Amerada No. 4 Salt Water Disposal Well, located in Section
9	5, Unit N.
10	Q. What are you presently doing with the
11	water?
12	A. Presently there is no water to be dealt
13	with, as the these three wells are shut in while Amerada
14	undergoes repairs on their presently on their Amerada
15	Disposal Well No. 4. This is causing us to forego 205 barrels
16	a day of oil production.
17	Q. How quickly could you be prepared to
18	inject water in the subject well?
19	A. Pending the Commission's approval, we
20	could in a realistic timeframe of four weeks.
21	Q. What volumes do you anticipate injecting?
22	A. We anticipate injecting 6580 barrels
23	per day.
24	Q. Do you plan to inject under pressure or
25	by gravity?

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11 1 2 A. By gravity, sir. 3 Q. If an order was entered by this Commission which imposed a pressure limitation of 0.2 of a pound 5 per foot of depth to the top of the injection interval, would that pose any problem whatsoever for Sun in its plans for 7 this well? It would not impose any problem. It A. 9 would be adequate. 10 Will you now refer to what has been Q. 11 marked for identification as Sun Exhibit Number Four? 12 A. Could I interject at this point here, 13 before we go to Exhibit Four? I left out something which was 14 important, talking about the Amerada No. 4 Well. 15 I'd like to elaborate. The reason that 16 it is shutin at this time is that they have extensive casing 17 repairs due to the corrosive waters of the salt water that 18 they've been disposing of previously, and the repairs require 19 running a liner in the bottom portion of the well. 20 Amerada has informed us that this will 21 restrict their injection capacibilities. Previously it was 22 approximately 11,000 barrels of water per day, and they're 23 estimating that the -- it will be capable of only, maybe, 24 7000 to 8000 barrels of water per day. 25

It is the opinion of Sun Texas Company

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1	12		
2	that this will not be adequate to dispose of Sun Texas' water		
3	as well as whatever water Amerada may have to dispose of,		
4	Q Will you now proceed to Exhibit Number		
5	Four?		
6	A. Yes, sir. Exhibit Number Four is a water		
7	analysis of the wells which we seek to inject disposed		
8	water we seek to dispose of.		
9	Q Are there wells within a 1/2 mile radius		
10	of the proposed injection well which penetrate the injection		
11	zone?		
12	A. Yes.		
13	Q. Will you now refer to Sun Exhibit Number		
14	Five and explain to Mr. Stamets what this shows?		
15	A Yes, sir. Exhibit Number Five is a		
16	tabular listing of the wells within 1/2 mile of the proposed		
17	injection well that penetrate the zone of interest.		
18	The table consists of the well name and		
19	legal location, the casing and set depths, the sacks of		
20	cement used to set each casing string, the cement tops, the		
21	TD cf each well, the subsea depth of each TD, the producing		
22	interval, the lowermost subsea producing interval, and the		
23	plugback TD, and the subsea plugback TD.		
24	Q And this table is submitted to comply		
25	with the requirements of the Commission's Memorandum 3-77, is		

13 1 2 that correct? 3 A. That is correct, yes, sir. It is worth noting that the two wells 5 which we're concerned of within the 1/2 mile radius of this 6 area are the Amerada BTI No. 1 and the Amerada State BTA No. 7 They are currently Devonian producers. I have calculated 8 the lowermost subsea producing interval at -6537 and -6520 9 for the wells, respectively. 10 I would like to note in the underlying 11 lower righthand corner, that Sun Texas plans to inject at 12 -6780 to -7116 in order to avoid flooding out their wells. 13 This is the main reason we revised our C-108 and decided to 14 inject into the open hole. 15 Will you now refer to what has been Q. 16 marked for identification as Sun Texas --17 MR. STAMETS: Could I ask a couple 18 questions while we're right here? 19 There are other wells within a half a 20 mile ---21 Yes, sir. A. 22 -- of the proposed well, but I would Q. 23 assume, since they are not on this list, that they were not 24 drilled deep enough to penetrate the injection horizon. 25 Correct, sir. I used a cutoff of -6610 A.

14 1 as an approximate top of the Devonian to use -- get these 2 3 wells that fall in that area. MR. STAMETS: And then you've calculated 5 some of these cement tops, I see, where they've got a little asterisk beside them. 6 7 Yes, sir, and the asterisk denotes an A. 8 assumption of 30 to 40 percent cement loss to the formation 9 or some other effects for the area. I did not really have 10 access to any logs that might give me a more definite area, 11 for the Amerada wells particularly. 12 MR. STAMETS: Is this 30 to 40 percent 13 loss an appropriate factor in this area? For this area from prior Sun Texas wells, 14 A. 15 yes, sir. MR. STAMETS: And then a number of the 16 17 wells, like the second well on the list, show a definite figure. Is that from temperature survey or where did that 18 19 figure come from? 20 That was reported, I believe, by one A. of the Commission forms. I don't recall right offhand, sir. 21 22 MR. STAMETS: Okay. Thank you. 23 Will you now refer to Exhibit Number **Q**. Six and explain to the Examiner what this is and what it shows? 24 25 Exhibit Number Six represents the A.

schematics of all the plugged and abandoned wells within 1/2 mile radius of this -- of our proposed injection well. I'd like to say, in terms of brevity, unless the Examiner would like me to go into more detail, that all these wells were plugged and abandoned in accordance with the NMOCC rules and were approved as such.

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I would also like to point out there seems to be an inconsistency with the number of P&A'd wells I show on Exhibit Five with that on Exhibit Six. I show four P&A'd wells on Exhibit Six and only three in Exhibit Five. The reason being, is one of the wells in Exhibit Six, specifically the Amerada Bagley Disposal No. 2, the last schematic of Exhibit Six, lies just outside of the 1/2 mile radius, and so I do not include it in Exhibit Five.

A. Yes, sir.
 A. Yes, sir.

Q Does Exhibit Six conform with the data reported to the Commission?

AYes.Q.Will you now refer to Exhibit NumberSeven and explain to the Examiner what this is and yourpurpose in offering it in this case?

A.

Exhibit Seven -- Exhibit Number Seven

16 2 is a spontaneous potential and resistivity log of the proposed 3 injection well. Its purpose is merely to show the interval in question, its top, which is located at 10,846 feet. Now will you refer to Sun Exhibit Number Eight and review this for Mr. Stamets? 7 Exhibit Number Eight is the Sun Texas Α. Company's interpretation of the top of the Devonian in the Q. Bagley Pool area. I would like you to note the structural 10 position of the existing salt water disposal well, Amerada's 11 No. 4. It is located high on the structure at approximately 12 -6400 feet on the Isopach. 13 I'd like to note that the proposed salt 14 water disposal well is located 200 feet lower, approximately, 15 at roughly -6600 feet, as far as structure. 16 The previously approved salt water 17 disposal wells, which are now P&A'd further south, are located 18 in a comparable position. 19 Mr. Glaser, are you aware of similar ŷ. 20 applications having been granted for salt water disposal in 21 the same general area and in this pool? 22 Yes, sir, specifically the Amerada A. 23 Salt Water Disposal No. 4, which we've been referring to 24 throughout this case; the Amerada Hess Corporation Chambers 25 No. 1 and No. 2, which are noted on Exhibit Two and the

1	17
2	structure map as currently P&A'd salt water disposal wells;
3	as well as Sun Texas Company's State B Account No. 1 Well No.
4	2, which is also a P&A'd salt water disposal well.
5	MR. CARR: Mr. Examiner, the order num-
6	bers on each of those, if you'd like them, Sun Texas Order
7	No. is R-4718, which was approved February 13, 1974; the two
8	Amerada injection wells, the Chambers was approved by Order
9	R-3377, February 12th, 1968; and the Bagley Salt Water Dis-
10	posal Well was Order No. R-3339, approved November the 9th,
11	1967.
12	Q. Mr. Glaser, in your opinion will
13	granting this application be in the best interest of conser-
14	vation, the prevention of waste, and the protection of cor-
15	relative rights?
16	A. Yes, sir.
17	Q. Were Exhibits One through Eight prepared
18	by you or under your direction and supervision?
19	A. Yes.
20	MR. CARR: At this time, Mr. Examiner,
21	we would offer into evidence Sun Texas Company EXhibits One
22	through Eight.
23	MR. STAMETS: These exhibits will be
24	admitted.
25	MR. CARR: I have nothing further of

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18 2 this witness on direct. 3 CROSS EXAMINATION BY MR. STAMETS: 5 Mr. Glaser. Q. 7 Yes, sir. A. 2 Exhibit Number Six --Q. 9 Yes, sir. A. 10 -- the page that represents the Amerada Q. 11 Mathers "WE" No. 1 Well. 12 Yes, sir. A. 13 Q. That well shows a bottom plug in the 14 casing. Do you know the size of that or is that the bottom 15 plug that was in there from the original cementing operation? 16 At the casing shoe, sir? Ă. 17 Yes. 0. 18 I am relatively confident it is the A. 19 original plug that was placed. 20 Q. Do you have any idea how much cement 21 that represents? 22 No, sir. A. 23 Perhaps it's ascertainable from the Q. 24 Division records with any luck. 25 Is the injection interval in your well

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19 2 below the casing point in this well? 3 A. The Mathers, sir? à Ũ Yes. 5 I would have to calculate it, sir. It À. 6 is definitely lower than the Amerada salt water disposal No. 7 4, which is currently producing. 8 I could sumit that data at a later time. 9 Q. Okay, that would be -- I would appreciate 1Ö that. I'm trying to make certain that this well is not going 11 to be conduit for the movement of fluids and it seems like 12 it shouldn't be --13 A. Yes, sir, 14 Q -- with that bottom plug in there and 15 then the cement retainers. 16 Do you know if there was any cement put 17 on top of those retainers? 18 No, sir. Well, excuse me. A. 19 There's so much information on there it Q. 20 is hard to discern. 21 I can give that to you, sir. A. 22 All right, that's the only well on there Q. 23 that I'm concerned about. If you could add a little bit of 24 information to the record subsequent to the hearing, I will 25 appreciate it.

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2	А.	Uh-huh.	
3	Q.	Will the tubing that you use in this	
4	well be a lined tubi	ng?	
5	А.	Yes, sir, very definitely.	
6	Q.	And you will be loading the annulus?	
7	λ.	Yes, sir.	
8	Q.	Okay. One of the requirements which we	
9	will probably have to adopt as a result of the Federal Under-		
10	ground Injection Con	trol program, is the test of the annular	
11	space in a well such	as this upon setting the tubing and	
12	packer. If that is	required,	
13	Α.	Excuse me, tests, I don't follow you.	
14	\$	Okay, pressure test.	
15	Α.	Oh, okay.	
16	Q.	To insure that before injection starts	
17	that everything is -	has integrity, that there are no leaks	
18	in the casing tubing	or packer, and what they propose was some	
19	sort of a pressure t	test that could be run once everything is	
20	installed. Could the	nat be done on this well?	
21	A.	Oh, yeah, we're very agreeable. Are	
22	you referring to, pe	erhaps, loading the back side with a	
23	lighter hydrostatic	fluid, for example, oil, and setting a	
24	pressure gauge at th	ne surface on the annulus, so that if a	
25	packer failure ever	did occur we'd see a sensible pressure	
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21 1 2 rise at the surface? 3 Something like that. Q. Similar to that. 5 Of course if you're on a vacuum it might a 6 be the opposite thing. 7 A. True. Â Or we might be in a situation where a 9 periodically we would want to come out there and run a pres-10 sure test on the backside. 11 Uh-huh. A. 12 And the idea is that you would have Q. 13 essentially an original guideline that says, yes, at least 14 at one time this thing was solid. 15 A. Okay. 16 a What type of -- how much pressure would 17 you think would be appropriate on the backside of this system 18 to assure that we did have integrity? 19 A. Oh --20 Without unseating the packer? 0. 21 Well, the packer we are planning on A 22 using is a Gyverson (sic) UniPac Five, and it has an unloading 23 valve in it, such that when the tubing rate is relieved, the 24 annulus and the tubing pressures are equalized so you don't 25 overload the packer or the tubing string. As a design number,

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	I don't have one right now at this time. It was designed
	with a salt water solution
	Q Let's throw that in with the additiona
	information
	A. Okay.
	Q on this other well, as to what pres
	sure you believe would be appropriate for that test.
	A. Okay.
	MR. STAMETS: Any other questions for
	this witness? He may be excused.
	Anything further in this case?
	The case will be taken under advisemen
	(Hearing concluded,)

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CERTIFICATE

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SALLY W. BOYD, C.S.R. kt. 1 Box 193-B Santa Fc, New Mexico 17901 1² horre (303) 453-7409 I, SALLY W. BOYD, C.S.R., DO HEREPY 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.E.

I do hereby cartify that the foregoing is dinas In **a** co 7186 the Los heas Examiner

Oil Conservation Division

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		1 2 3	ENERGY A OIL CO STATE SANT	TE OF NEW MEXICO ND MINERALS DEPARTMENT INSERVATION DIVISION LAND OFFICE BLDG. A FE, NEW MEXICO March 1981	
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- 		E IN	THE MATTER OF:	>	
a na shekara na shekar	,	8		Sun Texas Company) Lisposal, Lea County,) C:) 71)	ASE 1 86
n ang kang baga sa		10 BEF	ORE: Richard L. Stamets	L .	
n y- in diala	\sim	12	ግ ዋልእናር	RIPT OF HEARING	
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		14	מסג	EARANCES	
		15	A 1 4		
			r the Oil Conservation Division:	Ernest L. Padilla, Esq. Legal Counsel to the Div State Land Office Bldg. Santa Fe, New Mexico 87	-
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		21	r the Applicant:	William F. Carr, Esq. CAMPBELL, BYRD, & BLACK Jefferson Place Santa Fe, New Mexico 875	
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2	MR. STAMETS: We'll call next Case 7186.
3	MR. PADILLA: Application of Sun Texas
4	Company for salt water disposal, Lea County New Mexico.
5	MR. CARR: May it please the Examiner,
6	my name is William F. Carr, with the law firm of Campbell,
7	Byrd, and Black, and I'm appearing on behalf of the applicant.
8	Sun Texas Company, and I have one witness.
9	
10	(Witness sworn.)
11	
12	SCOTT J. GLASER
13	being called as a witness and being duly sworn upon his oath,
14	testified as follows to-wit:
15	
16	DIRECT EXAMINATION
17	BY MR. CARR:
18	Q. Will you state your name and place of
19	residence?
20	A. My name is Scott J. Glaser. Midland,
21	Texas.
22	0. Mr. Glaser, by whom are you employed
23	and in what capacity?
24	A I'm employed by Sun Texas Company as
25	an engineer.

1. The second second

1 Have you previously testified before 0. 2 this Commission and had your credentials accepted and made a 3 matter of record? 4 No, sir. A. 5 Will you briefly summarize for the Q Examiner your educational background and your work experience? 7 Mv educational background consists of Α. 2 a Bachelor's of Science at Purdue University, mechanical 9 engineering, and one year of graduate school, majoring in 10 geology. 11 I'm a member of two professional societies, 12 the Society of Automotive Engineers, and a junior member of 13 the SPE. 14 Summer employment while going through 15 college, for three summers I worked as a project engineer in 16 the textile industry, and I have had approximately one year 17 experience in the oil field, six months working as an engineer 18 for The Seismograph Service Corporation, geophysical survey 19 company, and approximately six months with Sun Texas Company 20 as a development engineer. 21 Are you familiar with the application 22 Q. filed in this case? 23 24 A. Yes. Are you familiar with the subject well? 25 Q

5 1 2 Yes, sir. A. 3 MR. CARR: Are the witness' qualifications 4 acceptable? 5 MR. STAMETS: They are. 6 Mr. Glaser, will you briefly state what Ω 7 Sun Texas Company seeks with this application? 8 Sun Texas Company seeks approval to Α. 9 convert the presently TA'd State C Account No. 1 Well No. 3 10 to salt water disposal service. It is located in Unit L 11 of Section 2, Township 12 South, Range 33 in the Bagley-12 Siluro-Devonian Pool. 13 Have you prepared certain exhibits for Q 14 introduction in this case? 15 Yes, sir. A. 16 Will you please refer to what has been Q. 17 marked for identification as Sun Exhibit Number One and ex-18 plain to the Examiner what it is and what it shows? 19 Sun Exhibit Number One is the NMOCC Ă. 20 Form C-108, Application to Dispose Salt Water by Injection, 21 for the proposed well, to conversion salt water disposal 22 service. 23 The proposed injection -- the proposed 24 formation for injection is the Devonian. The top of the 25 Devonian is at 10,146 feet. The bottom of the interval is

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6 1 2 not penetrated. 3 We plan to inject through open hole. The proposed interval of injection will be from 11,034 feet 5 to 11,370 feet. As such, the well consists of squeezed perfs and open perfs. The squeezed perfs are noted. The open perfs 7 are 10,856 feet through 90 feet, and they will be squeezed 8 prior to injection. 9 I would like to interject that this is 10 a revision to what we originally applied for. We plan only 11 to inject into the open hole. 12 Q, When was this well drilled? 13 A. This well was drilled in April of 1950 14 and it was TA'd in November, 1970 as uneconomical to produce 15 Q. Will you now refer to Exhibit Number 16 Two and review this for the Examiner? 17 A. Yes, sir Exhibit Number Two is a plat 18 of the area noting the wells within a two mile radius of the 19 proposed salt water disposal conversion. 20 I direct your attention to the three 21 shaded blue boxes. The central shaded blue box is the pro-22 posed salt water disposal well, located in Unit L of Section 23 2, the Sun Texas Company No. 3.

The upper shaded box is the present salt water disposal well for the area, and it is the Amerada BTC

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2 Salt Water Disposal No. 4.

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The lower shaded blue box consists of the P&A'd salt water disposal wells that have been used in the past. They consist of two Amerada wells, Chambers No. 1 and 2, and the Sun Texas Company State B Account No. 1 Well No. 2.

The color coding transparent dots over the wells denote the formations from which the wells have been producing. I direct your attention to the lower lefthand corner. The red overlays denote the Devonian; the Orange, the Bagley-Penn, and so on.

Q This exhibit also shows the lease ownership in the area.

A. Yes, sir. The yellow shaded areas are the areas owned by Sun Texas Company. I'll further emphasize that all the shaded colorings you've seen on this map corresponds to the Sun Texas Company code. Amerada wells and other companys are denoted by the superscripts over these.

9. Some of the acreage is not only shaded in yellow but has a red line around it, and I believe some of the tracts are also shaded in green. This shading does not have any bearing on this application here today.

Mo, sir. The outline red denotes area that has been farmed out by Sun Texas and I believe the

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2	lightly shaded green is area under consideration for farmout.
3	Q. Will you now refer to what has been
4	marked for identification as Sun Exhibit Humber Two-A and
5	explain to the Examiner what this shows?
6	A. Exhibit Two-A is a tabular form of the
7	producing formations of the wells for the wells within the
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21	TD of each well, the subsea depth of each TD, the producing
22	interval, the lowermost subsea producing interval, and the
23	plugback TD and the subsea plugback TD,
24	Q And this table is submitted to comply
25	with the requirements of the Commission's Memorandum 3-77, is

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1	13
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9	for the wells respectively.
10	I would like to note in the underlying
11	lower righthand corner, that Sun Texas plans to inject at
12	-6780 to -7116 in order to avoid flooding out their wells.
13	This is the main reason we revised our C-109 and decided to
14	inject into the open hole.
15	Q. Will you now refer to what has been
16	marked for identification as Sun Texas
17	MR. STAMETS: Could I ask a couple
18	questions while we're right here?
19	There are other wells within a half a
20	mile
21	
22	
23	Q of the proposed well, but I would
24	assume, since they are not on this list, that they were not
25	drilled deep enough to penetrate the injection horizon.
- w	L Correct, sir. I used a cutoff of -6610

14 1 2 as an approximate top of the Devonian to use -- get these 3 wells that fall in that area. MR. STANDUG: And then you've calculated 5 some of these cement tops, I see, where they've got a little 6 asterisk beside them. 7 а. Yes, sir, and the asterisk denotes an 8 assumption of 30 to 40 percent cement loss to the formation 9 or some other effects for the area. I did not really have 10 access to any logs that might give me a more definite area, 11 for the Amerada wells particularly. 12 MR. STAMETS: Is this 30 to 40 percent 13 loss an appropriate factor in this area? 14 For this area from prior Sun Texas wells A. 15 yes, sir. 16 MR. STAMETS: And then a number of the 17 wells, like the second well on the list, show a definite 18 figure. Is that from temperature survey or where did that 19 figure come from? 20 That was reported I believe, by one A. 21 of the Commission forms. I don't recall right offhand, sir. 22 MR. STAMETS: Okay. Thank you. 23 Will you now refer to Exhibit Number Û. 24 Six and explain to the Examiner what this is and what it shows? 25 Exhibit Number Six represents the Δ.

2 schematics of all the plugged and abandoned wells within 1/2 3 mile radius of this -- of our proposed injection well. I'd like to say, in terms of brevity, unless the Examiner would 5 like me to go into more detail, that all these wells were plugged and abandoned in accordance with the NMOCC rules and 7 were approved as such.

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I would also like to point out there seems to be an inconsistency with the number of P&A'd wells I show on Exhibit Five with that on Exhibit Six. I show four P&A'd wells on Exhibit Six and only three in Exhibit Five. The reason being, is one of the wells in Exhibit Six, specifically the Amerada Bagley Disposal No. 2, the last schematic of Exhibit Six, lies just outside of the 1/2 mile radius, and so I do not include it in Exhibit Five.

Have you checked the Oil Conservation 0 Division files on each of the plugged and abandoned wells? Yes, siz. *,*,

0 Does Exhibit Six conform with the data reported to the Commission?

21 A. Yes. 22 Will you now refer to Exhibit Number 0 23 Seven and explain to the Examiner what this is and your 24 purpose in offering it in this case? 25

Ā.

Exhibit Seven -- Exhibit Number Seven

1	16
2	is a spontaneous potential and resistivity log of the proposed
3	injection well. Its purpose is merely to show the interval
4	in question its top, which is located at 10 846 feet.
5	0. Now will you refer to Sun Exhibit Number
6	Eight and review this for Mr. Stamets?
7	L. Exhibit Number Eight is the Sun Texas
8	Company's interpretation of the top of the Devonian in the
9	Bagley Pool area. I would like you to note the structural
10	position of the existing salt water disposal well, Amerada's
11	No. 4. It is located high on the structure at approximately
12	-6400 feet on the Isopach.
13	I'd like to note that the proposed salt
14	water disposal well is located 200 feet lower approximately,
15	at roughly 6600 feet, as far as structure.
16	The previously approved salt water
17	disposal wells, which are now P&A'd further south, are located
18	in a comparable position.
19	0 Mr. Glaser, are you aware of similar
20	applications having been granted for salt water disposal in
21	the same general area and in this pool?
22	A Yes sir, specifically the Amerada
23	Salt Water Disposal No. 4 which we've been referring to
24	throughout this case; the Amerada Hess Corporation Chambers
25	No. 1 and No. 2, which are noted on Exhibit Two and the
	na sense se s

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1	17
2	structure map as currently P&A'd salt water disposal wells;
3	as well as Sun Texas Company's State B Account No. 1 Well No.
4	2, which is also a P&A'd salt water disposal well.
5	MR. CARR: Mr. Examiner, the order num-
6	bers on each of those, if you'd like them, Sun Texas Order
7	No. is R-4718, which was approved February 13, 1974; the two
8	Amerada injection wells, the Chambers was approved by Order
9	R-3377, February 12th, 1968; and the Bagley Salt Water Dis-
10	posal Well was Order No. R-3339, approved November the 9th,
11	1967.
12	Q. Mr. Glaser, in your opinion will
13	granting this application be in the best interest of conser-
14	vation, the prevention of waste, and the protection of cor-
15	relative rights?
16	A Yes, sir.
17	Q Were Exhibits One through Eight prepared
18	by you or under your direction and supervision?
19	A. Yes.
20	MR. CARR: At this time, Mr. Examiner,
21	we would offer into evidence Sun Texas Company EXhibits One
22	through Eight.
23	MR. STAMETS: These exhibits will be
24	admitted.
25	MR. CARR: I have nothing further of

1		
1		18
2	this witness on dire	ect.
3		
4		CROSS EXAMINATION
5	BY MR. STAMETS:	
6	Q.	Mr. Glaser.
7	А.	Yes, sir.
8	Q.	Exhibit Number Six
9	A.	Yes, sir.
10	Q.	the page that represents the Amerada
11	Mathers "WE" No. 1 W	Vell.
12	Ă.	Yes, sir.
13	Q.	That well shows a bottom plug in the
14	crsing. Do you know	the size of that or is that the bottom
15	plug that was in the	ere from the original cementing operation?
16	A.	At the casing shoe, sir?
17	Q.	Yes.
18	A.	I am relatively confident it is the
19	original plug that w	was placed.
20	Q	Do you have any idea how much cement
21	that represents?	
22	A	No, sir.
23	Q.	Perhaps it's ascertainable from the
24	Division records wit	th any luck.
25		Is the injection interval in your well

ವಿಶ್ವದ ಇಗೆ ನ ವಿಶೇಷ ಗಳು ವಿಶೇಷ ಗಳು 19 1 2 below the casing point in this well? 3 The Mathers, sir? A. Yes. Q. 5 I would have to calculate it, sir. It A. 6 is definitely lower than the Amerada salt water disposal No. 7 4, which is currently producing. 8 I could sumit that data at a later time. 9 Okay, that would be -- I would appreciate Q. 10 that. I'm trying to make certain that this well is not going 11 to be conduit for the movement of fluids and it seems like <u>12</u> it shouldn't be ---13 Yes, sir. A. 14 -- with that bottom plug in there and 0. 15 then the cement retainers. 16 Do you know if there was any cement put 17 on top of those retainers? 18 No, sir. Well, excuse me. A. 19 There's so much information on there it a 20 is hard to discern. 21 I can give that to you, sir. A. 22 All right, that's the only well on there O. 23 that I'm concerned about. If you could add a little bit of 24 information to the record subsequent to the hearing, I will 25 appreciate it.

1 20 2 Uh-huh. A. 3 Will the tubing that you use in this Q. 4 well be a lined tubing? 5 Yes, sir, very definitely. ሊ 6 And you will be loading the annulus? 0. 7 Yes, sir. Α. 8 Okay. One of the requirements which we 0 9 will probably have to adopt as a result of the Federal Under-10 ground Injection Control program, is the test of the annular space in a well such as this upon setting the tubing and packer. If that is required, --Excuse me, tests, I don't follow you. Ä. Okay, pressure test. Ô. Oh, okay. A. To insure that before injection starts 0. that everything is -- has integrity, that there are no leaks in the casing tubing or packer, and what they propose was some sort of a pressure test that could be run once everything is installed. Could that be done on this well? Oh, yeah, we're very agreeable. Are you referring to, perhaps, loading the back side with a lighter hydrostatic fluid, for example, oil, and setting a 24 pressure gauge at the surface on the annulus, so that if a 25 packer failure ever did occur we'd see a sensible pressure

21 1 2 rise at the surface? 3 Something like that. Q. Similar to that. A. Of course if you're on a vacuum it might Q, 6 be the opposite thing. 7 A. True. 8 Or we might be in a situation where Q. 9 periodically we would want to come out there and run a pres-10 sure test on the backside. 11 Uh-huh. A. 12 And the idea is that you would have 0. 13 essentially an original guideline that says, yes, at least 14 at one time this thing was solid. 15 A. Okay. 16 What type of -- how much pressure would Q. 17 you think would be appropriate on the backside of this system 18 to assure that we did have integrity? 10 Oh --A 20 Without unseating the packer? Q. 21 Well, the packer we are planning on A. 22 using is a Gyverson (sic) UniPac Five, and it has an unloading 23 valve in it, such that when the tubing rate is relieved, the 24 annulus and the tubing pressures are equalized so you don't 25 overload the packer or the tubing string. As a design number,

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1	22
2	I don't have one right now at this time. It was designed
3	with a salt water solution
4	0. Let's throw that in with the additional
5	information
6	A. Okay.
7	Q on this other well, as to what pres-
8	sure you believe would be appropriate for that test.
9	A. Okay.
10	MR. STAMETS: Any other questions for
11	this witness? He may be excused.
12	Anything further in this case?
13	The case will be taken under advisement.
14	
15	(Hearing concluded.)
16	
17	
18	
19 20	
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22	
23	
24	
25	

CERTIFICATE

SALLY W. BOYD, C.S.R. kt. 1 Box 193-B Santa Fc. New Mexico 17301 Phone (303) 435-7409 I, SALLY W. BOYD, C.S.R., DO HEREPY 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.

Sury W. Boyd C. S.P.

I do hereby certify that the foregoing is a complete the proceedings in the brain of the reading of the proceedings in heard b, we can be a set of the proceeding of the pro-

Oil Conservation Division

EXHIBIT 1

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Form C-108 Revised 3-1-68

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

PERATOR			ADDRESS		an a
SUN TEXAS COMPANY		WELL NO.	BOX 4067	, MIDLAND, TEXA	AS 79704
STATE "C" A/C-1		3	BAGLEY (S	SILURO-DEVONIA	N) LEA
UNIT LETTER	; w	ELL IS LOCATED	980 PLET FROM	THE SOUTH	INE AND 660 FEET FROM 1
LINF, SECTION	2 10	WHOHIP 12-S	AND TUBING DATA	NMFM.	
NAME OF STRING	SIZ E	SETTING DEPTH	SACKS CEMENT	TOP OF CEME	NT TOP DETERMINED BY
URFACE CASING	13-3/8"	324'	350	Circ'd	
TERMEDIATE					
ONG STRING	9 5/8"	3,894'	2,700	Circ'd	
VOING	5 1/2"	11,034'	3,000	Circ'd	
AME OF PROPUSED INJECTION FORMA	3 1/2"	10,900'	GUIBERSON UNI	PACKER -V @ 1	0.900 T
DEVONTAN S INJECTION THROUGH TUBING, CASIN	GOR ANNULUS?	PERFCRATION	10,846	SED INTERVAL (5) OF INJE	NOT PENETRATED
TUBING				L,034' - 11,37(
S THIS A NEW WELL DRILLED FOR ISPOSAL?	1	-DEVONIAN PRO		Y DRILLED?	NAS WELL EVER BEEN PERFORATED IN ZONE OTHER THAN THE PROPOSED INJECTION ZONE? NO
15T ALL SUCH PERFORATED INTERVAL	S AND SACKS OF C	EMENT USED TO SEAL	OFF OR SQUEEZE EACH	a carld micro	
EPTH OF BOTTOM OF DEEPEST RESH WATER ZONE IN THIS AREA	u w/ 30 5x5	DEPTH OF BOTTOM OF	F NEXT NIGHER		P OF NEXT LOWER
150' (est'd)		Penn (Col	11ier) - 9,950		NONE
NTICIPATED DAILY MINIMUM	8,000	Closed	1	INJECTION TO BE BY GRA Gravity	у
NSWER YES OR NO WHETHER THE FOL Palized to such a degree as to e tock, irrigation, or other gener,	LOWING WATERS AF E UNFIT FOR DOMES AL USE	NE MIN-		TURAL WATER IN DISPO-	ARE WATER ANALYSES ATTACHED? Yes
LESSEE: Marsha Hi Ist NAMES AND ADDRESSES OF ALL Atherada Hess, P. O.	burn Mathe	NE-HALF (1) MILE OF	(303, Caprock	, New Mexico	88213
	· · · · · · · · · · · · · · · · · · ·				
AVE COPIES OF THIS APPLICATION B ENT TO EACH OF THE FOLLOWING?	EEN SURFACE ON	Yes	EACH OPERATOR A	VITHIN ONE-HALF MILE	
RE THE FOLLOWING ITEMS ATTACHED HIS APPLICATION (SEE RULE 701-8)	TO PLAT OF ARE	Yes	ELECTPICAL LOG	Yes	DIAGRAMMATIC SKETCH OF WELL
R.J. C.M.(a. (Signature)	ertify that the in	formation above is	true and complete to <u>1 Operations Su</u> (Tule)	the best of my knowl	ledge and belief. <u>3-6-8/</u> (Bate)
	-	•		· · · · ·	not accompany this application, the l by the Commission's Santa Fe office

EXHIBIT 2A

PRODUCING FORMATIONS FOR WELLS WITHIN TWO MILE RADIUS OF PROPOSED S.W.D.W. - STATE "C" A/C-1 NO. 3

EXHIBIT 2

	State AO No. 1	State "C" A/C-2 No. 1	Sunnay MC No. 1		Shell-Spear No. 1	Amerada-Fed. No. 2	Amerada Caudle No. 4	Amerada-Fed. No. 1	Amerada Caudle No. 6	Mathers N	Amerada-Fed. No. 1	Amerada Mathers No. 2A	Amerada Caudle No. 2		Amerada Mathers No. 1	Amerada Caudle No. 5	State BTL No. 1	Amerada 3TD No. 4		"C" A/C-1	C" A/C-1 :	Amerada BTI No. 2	Amerada BTA No. 1	""" A/C-1	A' A/C-1	Amerada BIA No. 2	State "C" A/C-1 No. 6	C" A/C-1 No.	Amerada BTI No. 1	"C" A/C-1 No.	State "C" A/C-1 No. 1	State "D" A/C-1 No. 1	WELL NAME & NUMBER	
	S.T.C.		Sunnay	Sunray	MGF, et al	ċ	A.H.C.	MGF, et al	A.H.C.	A.H.C.	A.H.C.	A.H.C.	A.H.C.	A.H.C.	A.H.C.	A.H.C.	S.T.C.	A.H.C.	A.H.C.	S.T.C.	S.T.C.	A.H.C.	A.H.C.	S.T.C.	S.T.C.	H	S.T.C.	S.T.C.	A.H.C.	S.T.C.	S.T.C.	S.T.C.	OPERATOR	
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					UNY HOLE											PA	PA	Ncl Vcl	PA	11	TA Proposed S.W.D.W.		211	TA	TA	PA	TA	11	11	PA	11	Ħ	STATUS	
DEF O'L CAS Sub: Hear					8				2 /					「「「「「「「」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」										-										•

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EXHIBIT 2

PRODUCING FORMATION FOR WELLS WITHIN TWO MILE RADIUS OF PROPOSED S.W.D.W. - STATE "C" A/C-1 NO. 3

State BTA No. 1 State "B" A/C-1 No. 5 State "B" A/c-1 No. 2 Amerada Chambers No. 2 Amerada Warren St. H. C. Hood No. Humble State No. 1 Amerada BTA No. 1 Simmons BTA Nc. 1 State "C" A/C-1 No. Viking State No. 1 Amerada Turtier No. 1 Read State No. 1 Amerada State No. 1 Huber No. State "C" A/C-1 No. 2 Cox Shell-St. No. 1-C Caudle No. 1 Stan No. Stan No. Huber No. Shell-St. No. Shell-St. No. Imerada Chambers No. Amerada Caudle Penn No. Amerada Caudle No. Amerada BTR No. 1 Huber No. Shell-St. State "B" A/C-1 No. 4 WELL NAME & NUMBER 1-B No. 1-A 1-6 G щ No. ω ഗ 20 **–**– ш Simmons A:H.C. A.H.C. A.H.C. J. L. Cox J. L. Cox J. L. Cox Stevens Oil S.T.C. A.H.C. A.H.C. MGF, et al MGF, et al MGF, et al MGF 0il S.T.C. J. L. Cox A.H.C. A.H.C. S.T.C. A.H.C. Kenyan Corp. Kern Oil A.H.C. IGF, et al ÷ • L. Cox OPERATOR L. Cox Sox Cox DII UBXINDOBLAINDA UNIT -65551111111110101000000++++ SEC. 26 27 33 11S '-12S -TWP -33E 33E R Devonian Devonian Devonian Penn (0i1) Penn (0i1) Penn (0i1) Devonian Penn (Cil) Penn (Oil) Penn (Oil) Devonian Penn (0il) Penn (0il) Penn FORMATION (0il) (041) (041) (041) (041) (041) (041) (041) PARA'd Hore and the second sec Dry Hole Dry Hole PA PA PA PA STATUS 다다망 PEA'd S.W.D.W. PA Hole S W D W

Gulf St. No.

Goodrich AHC-St. No. 2

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EXHIBIT 2

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PRODUCING FORMATION FOR WELLS WITHIN TWO MILE RADIUS OF PROPOSED S.W.D.W. - STATE "C" A/C-1 NO. 3

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AHC St. BTD No. 5 AHC St. BTD No. 1-A AHC St. BTD No. 3 State PRB No. 1	BTC No. BTC No. BTC No. BTC No. ETC No.	AHC St BTK No. 1 AHC St. BTO - No. 1 AHC St BTN - No. 1 State BTC No. 2 Gulf State No. 1 Amonada St. HEP Mo. 1	Bagley State No. 1 AHC StBTP No. 1 Baily St. No. 1 AHC State No. 1 AHC St BTM No. 1 Hess St. No. 1	WELL NAME & NUMBER Goodrich AHC BIM No. 2 Goodrich Mathers No. 1 Mathers No. 2 Mathers No. 2 State BIQ Nc. 1 AHC State No. 1
A.H.C. A.H.C. A.H.C. MGF	• • • • •	A.H.C. A.H.C. A.H.C. Gulf	Belco A.H.C. Belco Kerri Oil Kerri Oil A.H.C.	OFFERATOR Goodtrich Anderson Oil S.T.C. Goodtrich Kert, Cil Belco
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State C VC / No. 3 Elevation: 4254 DF 1980 FSL 5660 FAL Datum : Zero @DF - 12 AG Sect. 2, T-12-3, R-33 Bagley (Devonion > Field Lea County | New Menie 133/8" 48 # H-40 @324 Cmtil 4/350 SX-Circ d EXHIBIT З 95/8"36 J-55@3894 Critid ~/ 2700 SY-Circid PROPOSED 5.W. D.W. CONVERSION į Perfid HSPF @ 9950 Circid Cont W/2800 sx OTOC @ 9980 infter 20054 9950 3 /2 tubing W/Pkr @ 10,900' (Temp. Surv.) Perfins 10856-60 (25PF) SWB D DRY 10856 lia Perf'ns 10,860-90 (1SPF) 10,890≝ Perf'ns 10856-90 to be squ • Jqz'd 10907 Perfins 10907-94 (510 JShot Sqz'd w/ 50 sx 10,994 51/2" 17 # N-80 @ 110 34 Crnt'd W/200 sx Drid FC ; Shoe to 11,033 INJECTION ZONE DRILL-OUT TO 370

EXENSIT 4 HALLIBURION DIVISION LABORATORY HALLIBURTON SERVICES

HALLIBURTON SERVICES MIDLAND DIVISION HOBBS, NEW MEXICO 88240 LABORATORY WATER ANALYSIS

No W81-171

Box 4067 Midland, Texas; ATTN: Scott Gla	iser	it nor ar or disclo of labora course of	iy part thereof no sed without first itory management regular business loyees thereof re	of Halliburton Company and neither or a copy thereof is to be published securing the express written approval ; it may however, be used in the operations by any person or concern ceiving such report from Haliiburton
Submitted by			_ Date Rec	2-24-81
Well No. As Marked	Depth		_ Formation_	Siluro-Devonian
CountyLea	Field Bagle	ey	Source	
	State "C" a/c #1	_ <u>State "D" a/o</u>	<u>#1</u>	
Resistivity	0.153 @ 74°F.	0.153 @ 74°F.		······································
Specific Gravity	1.035	1.035		
рН	6.1	6.0		
Calcium (Ca)	2,250	2,350		*MPL
Magnesium (Mg)	90	60		
Chlori des (Cl)		26,500		
Sulfates (SO ₄)	2,300	2,400		
Bicarbonates (HCO ₃)		570		
Soluble Iron (Fe)		Nil		
		·		

Remarks:

*Milligran's per liter

Respectfully submitted

Analyst: Brewer

cc: Elmer Teel, Sun-Texas Oil Co., Box 1255, Eunice, N.M.

HALLIBURTON COMPANY CHEMIST

NOTICE

By.

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

EXHIBIT 5

EXHIBIT 5 WELLS WITHIN ONE HALF MILES OF STATE "C" A/C-1 NO. 3 THAT PENETRATE ZONE OF INTEREST

SUNTICK EXHIBIT NO. 5 Submitted by Guar CASE NO. JISL Hearing Date 5/11/181 BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION

fro val	fre for				ume 30-40% Loss	s - Assume	*Calculate Cmt Tops - Ass	*Calc	
-6780 to	interval @ -4	STC - SWD in	PENN PA	-6791	11,046'	*1007t	w/225 sx w/1450 sx w/300 sx	13-3/8" @ 305' 8-7/8" @ 3866' 5-1/2" @ 9450'	AHC State Simmons No. 1 660' FN & WL Sec. 11-12S-33E
			DEVONIAN (10,760-10,834')	6693	,846 [°] 0T	Surfece 6220' 10,535'	Circ. Cmt. w/2800 sx w/1100 sx w/40 sx	12-1/2" @ 303' 9-5/8" @ 3897' 7" @ 1),778' 4-1/2" @ 10,531-10,946'	STC State "C" A/C-1 No. 2 1980' FN & WL Sec. 2-12S-33E
-6545	10,800	-6520	DEVONIAN (10,752-775')	-7511 .	11,766'	¥,0068	w/225 sx w/1500 sx w/200 sx	13-3/8" @ 287' 8-5/8" @ 3929' 5-1/2" @ 11,200'	ANC State BTA No. 1 1980' NSL & 1980' FEL Sec. 2-12S-33E
			PENN PA	-6740*	10,995'	6200 ¹ *	w/225 sx w/1500 sx w/600 sx	13-31/8"@ 300' 8-5/8"@ 3880' 5-1/2"@ 10,980'	/smerada No. 1 BTD State 660' FSL & 1980' FwL Sec. 2-125-33E
			PENN (93709454') TA	-6764	et0,11	31' 4710'	w/350 sx w/2800 sx w/1500 sx	13-3/8" @ 327 8-5/8" @ 3888' 7" @ 11,018	STC State "C" A/C-1 No. 4 660' FSL & 660' FWL Sec. 2-12S-33E
			PENN (PA)	-6709'	10,964	1.2642	w/225 sx w/150 sx w/550 sx	13-3/5" @ 307' 8-5/3" @ 3863' 5-1/2" @ 10,934'	Amerada Mathers No. 1 1980' FNL & 662' FEL Sec. 3-125-33E
-6630	10,883	-6537	DEVONIAN (10,808-824') (10,842,875')	-6705	10,960	6200'*	w/225 sx w/1500 sx w/600 sx	13-3/8" @ 297' 8-5/8" @ 3833' 5-1/2" @ 10,922'	Ameraca BTI No. 1 660' FNL & 660' FWL Sec. 2-12S-33E
SS PBTD	PEID	Lowerniost Subsea Producing Interval	Producing Interval	Subsea	IJ	Cmt Tops	Sx-Ont	Casing/Set/Depth	Vell: Name & Number



Listen Billing Bi			
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ССА, NEW NIT 25 1338 (9,290) 4/255 1338 (9,290) 4/255 1338 (9,290) 4/255 1325 775 3 271 1325 775 775 775 775 775 775 775 775 775 7			
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REGIONAL OFFICE MIDLAND, TEXAS 79701

P.O. BOX 4067 1509 WEST WALL STREET 1EL: 915-684-5584 TWX: 910-895-5824

March 13, 1981

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

Attention: Mr. Richard L. Stamets

Re: Application to Convert State "C" A/C-1 Well No. 3 to Salt Water Disposal Service Bagley Siluro Devonian Pool Lea County, New Mexico

Gentlemen:

1

In support of our case No. 7186 (Docket No. 8-81), the following is additional information requested by the commission.

A Guiberson Uni-5-nickle plated packer with the following specifications will be used in the proposed disposal well.

Maximum Differential Pressure	6000 PSI
(anticipate Δp = 1500 to 2000 PSI)	
Manderal Burst Pressures	
Tbg-Csg	9500 PSI
Csg-Tbg	8150 PSI
Tensile Load Strength-80%ult	102,500#

The injection interval of the proposed disposal well is 70' lower than the T.D. of the A. H. C. Mathers No. 1.

SubSea Depth

A.H.C. W.E. Mathers No. 1 STC State "C" A/C-1 No. 3 -6710' (T.D.) -6780' to -7116' (Inj. Int.)



A DIVISION OF SUN OIL COMPANY (DELAWARE)

New Mexico Oil Conservation Commission March 13, 1981 Page Two

As required by the Commission, the annulus will be loaded with corrosion resistant fluid and a pressure gauge installed on the wellhead to monitor any pressure changes.

Attached are three (3) copies of a revised wellbore sketch of the AHC Mathers No. 1 showing the cemented intervals in the lower wellbore.

If we can furnish any additional information in this matter, please advise.

Thank you for your consideration.

Yours very truly,

SUN TEXAS COMPANY

rolli

M. L. Schroeder Midland Regional Engineer

SJG:cs:lw

Attachments







EXHIBIT 1

4

Form C-108 Revised 3-1-63

NEW MEXICO OIL CONSERVATION COMMISSION APPLICATION TO DISPOSE OF SALE WATER BY INJECTION INTO A POROUS FORMATION

SUN TEXAS COMPANY	χ		BOX 406	7, MIDLAND, TEX	KAS 79		
STATE "C" A/C-1		WELL NO. 3	BAGLEY	(SILURO-DEVONIA	<u>N)</u>	LEA	
UNIT LETTER	; v	TELL IS LOCATED 19	180 FEET FR	OM THE SOUTH	LINE AND	560 FEET FROM	
LINE, SECTION	2	DWNSHIP 12-S	RANGE 33-E				
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMEN		ENT	TOP DETERMINED BY	
SURFACE CASING	13-3/8"	324'	350	Circ'd			
INTERMEDIATE	9 5/8"	3,894'	2,700	Circ'd			
LONG STRING	5 1/2"	<u>11,034'</u>	3,000	Circ'd			
TUBING	2 2 /011	20.0001		PTH OF TUBING PACKER			
NAME OF PHOPOSED INJECTION FORMA	3 1/2"	10,900'	GUIBERSON U	NIPACKER -V @]	LO 900 ·	F FORMATICN	
DEVONIAN			10,846	DPOSED INTERVAL(S: OF IN.	I NOT I	PENETRATED	
IS INJECTION THROUGH TUBING, CASIN	IG, OR ANNULUS?	i	í				
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NO		-DEVONIAN PRO			TION ZON	ER THAN THE PROPOSED IN JE	
10,907-9941 - Sq2							
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA	OF OF NEXT	LOWER					
150' (est'd)		llier) - 9,95	50 '		NONE		
ANTICIPATED DAILY MINIMUM I MAXIMUM OPEN C			ED TYPE SYSTEM		ECTION TO BE BY GRAVITY OR APPRO		
ANSWER YES OR NO WHETHER THE FO	8,000			Gravi NATURAL WATER IN DISPO		R ANALYSES ATTACHED?	
ERALIZED TO SUCH A GEGREE AS TO E STOCK, IRRIGATION, OR OTHER GENER	AL USE	, Ye	25	SAL ZONE		Yes	
NAME AND ADDRESS OF SURFACE OWN				······································			
LESSEE: Marsha Hi	Iburn Mathe	ONE-HALF (1) MILE OF	C 303, Caproc	k, New Mexico	88213		
Amerada Hess, P. O.		_				:	
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HAVE COPIES OF THIS APPLICATION B SENT TO EACH OF THE FOLLOWING?	EEN SURFACE OF	YNER	EACH OPERAT	OR WITHIN ONE-HALF MILE			
SEAL TO EACH OF THE FOLLOWING?	1	Yes	I OF TRIS WELL	Yes			
ARE THE FOLLOWING ITEMS ATTACHE THIS APPLICATION (SEE RULE 701-B)	D TO PLAT OF AR	Yes	ELECTPICAL L	Yes	DIAGRAMI	MATIC SKETCH OF WELL	
I hereby c	ertify that the in		true and complete	to the best of my know	vledge and	belief.	
(P) PIL	P		-				
(Signature)	л —	Regional	<u>l Operations</u> (Tule)	Superintendent		-6-81	
[Signature]			(11110)			(Date)	
NOTE: Should waivers from the Mexico Oil Conservation	•						

EXHIBIT 2A

EXHIBIT 2

PROJUCING FORMATIONS FOR WELLS WITHIN TWO MILE RADIUS OF PROPOSED S.W.D.W. - STATE "C" A/C-1 NO. 3

Sumpay MC No. 1 State "C" A/C-2 No. 1 State AO No. 1	Shell-Spear No. 1 Sunray MC No. 1	Amerada Caudle No. 4 Amerada-Fed, No. 2		Mathers N	Smerada Mathers No. 2A	Amerada Caudle No. 1	ò	State BTL No. 1 Amerada Caudle No. 5	BID	• •		BTI No. 2			FA No. 2	State "C" A/C-1 No. 6	merada BII No. 1	A/C-1 No.	State "D" A/C-1 No. 1	T 6 IN HUMAN		· · · · · · · · · · · · · · · · · · ·
S.T.C.	Ϋ́ς	A.H.C.	MGF, et al	A.H.C. A.H.C.	A.H.C. A.H.C.		A.H.C.	A.H.C.	A.n.C.	A.H.C.	S.T.C.	A.H.C.	: 11	S.T.C.	A.H.C.	H	S.T.C.	t H	H	S.T.C.	OPERATOR	Ę
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ţ	P%	Dry Hole		1;L;	PA	PA	, , ,	⊦ -7) -	PA	PA	PA		TA Proposed S.W.D.W.	11	TN	17,4 T),1	ΞΛ	11	11 11		001010	0.14440
OIL CASE Subn	ORE E CONS AS E NO. niltec ing D	ERV EXHI L Dy J	ATK BIT 34 Que	DN D	9718 24	SION						- Mark	W.									

PRODUCING FORMATION FOR WELLS WITHIN TWO MILE RADIUS OF PROPOSED S.W.D.W. - STATE "C" A/C-1 NO. 3

H. C. Heod No. 1 Amerada Warren St. No. 1 Gulf St. No. 1 Geodrich AHC-St. No. 2	Turne ate No State State	Amerada Chambers No. 2 Amerada BTA No. 1 Summons BTA No. 1 Amerada Chambers No. 3 Amerada State No. 1	No. 1 Caudle Penn N TA No. 1 B" A/C-1 No. 5	Fuber No. 2 Fuber No. 1-A Stan No. 1-A Stan No. 1-B Amerada Caudle No. 3 Amerada BJR No. 1	State "C" A/C-1 No. 2 Cox Shell-St. No. 1-C State "B" A/C-1 No. 4 Shell-St. No. 1 Shell-St. Nc. 1-AX Shell-St. Nc. 1-G Huber No. 1	WELL NAME & NUMBER
Kenyan Corp. A.H.C. Belco Goodrich	A.H.C. J. L. Cox J. L. Cox J. L. Cox	A.H.C. A.H.C. A.H.C. A.H.C. A.H.C.	Kern Oil A.H.C. Stevens Oil S.T.C.	MGF, et al MGF, et al MGF Oil MGF, et al A.H.C. A.H.C.		OPERATOR
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EXHIBIT 2

EXHIBIT 2

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PRODUCING FORMATION FOR WELLS WITHIN TWO MILE RADIUS OF PROPOSED S.W.D.W. - STATE "C" A/C-1 NO. 3

AHC St. BTD No. 5 AHC St. ETD No. 1-A AHC St. BTD No. 3 State PRB No. 1	AHC St. BTC No. 3 AHC St. BTC No. 3 AHC St. BTD No. 5 AHC St. BTD No. 2 AHC St. BTC No. 4 AHC St. BTC No. 1	- ETK No BTO - No - ETN - TC No. 2 atte No. 1	Mathers No. 2 Mathers No. 2 State BTQ No. 1 AHC State No. 1 Bagley State No. 1 AHC StBIP No. 1 Baily St. No. 1 AHC State No. 1 AHC St ETM No. 1 Hess St. No. 1	WELL NAME & NUMBER Goodrich AHC BIM No. 2 Goodrich Mathers No. 1
A.H.C. A.H.C. MGF	A.H.C. A.H.C. A.H.C.	A.H.C. A.H.C. Gulf	S.T.C. Geodrich Kern Cil Belco A.H.C. Belco Kern Oil Kern Oil A.H.C.	OPERATOR Gcodrich Anderson Cil
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FA FA FA	II FA II FA Current S.W.D.W.	FA FA Dry Hole FA		STATUS 11 FA

State C Vol No. 3 Elevation: 4254 DF 1980'FSL & 660' FAL Daturn : Zero CDr Sect. 2, T-12-S, R. 33 Bagley (Devenion > Field Lea County New Micric 133/8" 48 # H-40 @324 Cmtd 4/350 SX-Circd EXHIBIT 3 95/8"36#J-55@3894 Cmt'd ~/ 2700 5X-Circ'd PROPOSED 5.W. D.W. CONVERSION Perfid HSPF @ 9950 Circ'd Crnt W/2800 sx OTOC @ 9980' after 2005t 9950 11 32 tubing @ 10,900 M/PKr (Temp. Surv.) Perfins 10856-60 (25PF) SWED DRY 10856 Perfins 10,860-90 (15PF) 10,895≦ Perf'ns 10856-90 to be • Jazid 10907 Perfins 10907-94 (510 JShot Sqz'd W/ 50 sx 10,994 51/2" 17#1-80 @ 110 34 Cmt'd W/200 sx Drid FCF Shoe to 11,033 INJECTION ZONE DRILL-OUT TO -11.370 TDO

EXHIBIT 4

HALLIBURTON DIVISION LABORATORY HALLIBURTON SERVICES MIDLAND DIVISION HOBBS, NEW MEXICO 88240 LABORATORY WATER ANALYSIS

mpany		Date	2-25-81			
			of Halliburton Company and neither			
	it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern					
ser	and employe Company.	res thereof red	ceiving such report from Halliburton			
	[Date Rec	2-24-81			
Depth	I	Formation_	Siluro-Devonian			
Field Bagley		Source				
State "C" a/c #1	State "D" a/c #	1				
0.153 @ 74°F.	0.153 @ 74°F.		·			
1.035	1.035					
6.1	6.0					
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	ser Depth Field Bagley State "C" a/c #1 0.153 @ 74°F. 1.035 6.1 2,250 90 26,000 2,300 580	This report it nor any or disclosed course of re- ser Depth	Date This report is the property if nor any part thereof nor of discored without first of laboratory management course of regular business and employees thereof ne Company. Ser Depth Field Bagley State "C" a/c #1 State "D" a/c #1 0.153 @ 74 °F. 0.153 @ 74 °F. 1.035 1.035 6.1 6.0 2,250 2,350 90 60 26,000 26,500 2,300 2,400 580 570			

Remarks:

*Milligrams per liter

No. W81-171

Respectfully submitted,

Analyst: Brewer

ł

cc: Elmer Teel, **Sun-Texas** Oil Co., Box 1255, Eunice, N.M.

HALLIBURTON COMPANY

CHEMIST

NOTICE

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THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

EXHIBIT 5 WELLS WITHIN ONE HALF MILES OF STATE "C" A/C-1 NO. 3 THAT PENETRATE ZONE OF INTEREST

1 თ	10,833	-6537	DEVONIAN (10,808-824')	5705
	PBTD	Interval	Interval	ıbsea
		Subsea Producting	Producing	
		Lowermost		
	Start "	Hearing Date 3 4		
	JLASEFL	Submitted by GLASEF		
	6	CASE NO. 7186		
ł	HT NO. 5	SAN TELAS EXHIBIT NO. 5		
ION	TION DIVIS	BEFORE EXAMINER STAMETS		

AHC State Simmons No. 1 660° FN & WL Sec. 11-12S-33E	STC State "C" A/C-1 No. 2 1983' FN & WL Sec. 2-12S-33E	ANC State BTA No. 1 1980' FSL & 1980' FEL Sec. 2-12S-33E	Amerada No. 1 BTD State 660' FSL & 1980' FWL Sec. 2-12S-33E	STC State "C" A/C-1 No. 4 660' FSL & 660' FWL Sec. 2-12S-33E	Amenada Mathers No. 1 1983' FNL & G62' FEL Sec. 3-12S-33E	Amerada BTI No. 1 660° FNL & 660' FWL Sec. 2-12S-33E	Well- Name & Number
13-3/8" (0 305' 8-7/8" (0 3866' 5-1/2" (0 9450'	12-1/2" @ 303' 9-5/8" @ 3897' 7" @ 10,778' 4-1/2" @ 10,531-10,946'	13-3/8" @ 287' 8-5/8" @ 3929' 5-1/2" @ 11,200'	13-31/8" @ 300' 8-5/8" @ 3880' 5-1/2" @ 10,980'	13-3/8" @ 327 8-5/8" @ 3888' 7" @ 11,018	13-3/8" (0 307' 8-5/8" (0 3863' 5-1/2" (0 10,934'	13-3/8" (0 297' 8-5/8" (0 3833' 5-1/2" (0 10,922'	Casing/Set/Depth
w/225 sx w/1450 sx w/čJ0 sx	Circ. Cmt. 1/2800 sx 1/1100 sx 1/1100 sx	w/225 sx w/1500 sx w/200 sx	w/225 sx w/15C0 sx w/60C sx	w/350 sx w/2800 sx w/1500 sx	w/225 sx w/150 sx w/550 sx	w/225 sx w/1500 sx w/600 sx	Sx-Cmt
\$ 1 007	Surface 6220' 10,535'	*10068	62001*	31' 4710'	1,2641	5200 * *	Cint Tops
11,046'	10,948'	11,766'	10,995'	11,019	10,964	0,960	ŢŢ
-6791	6693	-7511	-6740'	-6764	-6709*	-6705	Subsea
PENN	DEVONIAN (10,760-10,834')	DEVONIAN (10,752-775')	PENN PA	PENN (9370-9454') TA	PENN (PA)	DEVONIAN (10,808-824') (10,842,875')	Producing Interval
STC - SWD i		- 6520				-6537	Lowermost Subsea Producing Interval
SWD interval. @ -		10,800				10,833	PBID
-6780 to		-6545				-6630	PBID

*Calculate Cmt Tops - Assume 30-40% Loss

EXHIBIT 5





		IIIII AIVERAUA FETUUN
EEVATION 4254 DE		1111 #I MATHERS, W.E. / 1111 1980 FNL, 662 FEL 1111 SEC. J. 1428, R-33 E 1111 BAGLEY PENN
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Page 2 of 6 Examiner Hearing - Wednesday - March 11, 1981

Docket No. 8-81

CASE 7165: Application of El Paso Exploration Company for downhole commingling, San Juan County, New Hexico. applicant, in the above-styled cause, seeks approval for the downhole commingling of Blanco Mesaverde and Basin-Dakota production in the wellbore of its Turner Hughes Well No. 17 located in Unit H of Section 10, Township 27 North, Range 9 West.

CASE 7161: (Continued from February 25, 1981, Examiner Hearing)

Application of John Yuronka for four compulsory poolings, Les County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Langlie Mattix Pool underlying the four 40-acre prometion units comprising the SW/4 of Section 31, Township 22 South, Range 37 East, to be dedicated to wells to be drilled at standard locations thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designacion of applicant as operator of the wells, and a charge for risk involved in drilling said wells.

CASE 7164: (Continued from February 25, 1981, Examiner Hearing)

Application of ARCO Oil and Gas Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Devonian and Ellenburger formations, Custer Field, underlying the N/2 of Section 6, Township 25 South, Range 37 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and chargee for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7165: (Continued from February 25, 1981, Examiner Hearing)

Application of ARCO Oil and Gas Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Langley-Ellenburger Pool underlying the N/2 of Section 33, Township 22 South, Range 36 East, to be dedi-cated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7175: (Continued from February 25, 1981, Examiner Hearing)

Application of Conoco Inc. for compulsory pooling and a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Ellenburger formations underlying the S/2 of Section 19, Township 25 South, Range 37 East, to be dedicated to a well to be drilled at a standard location and dually completed in the Devonian and Ellenburger formations. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.



CASE 7186: Application of Sun Texas Company for salt water disposal, Les County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the interval from 10,856 feet to 11,370 feet in its State C Account 1 Well No. 3 in Unit L of Section 2, Township 12 South, Range 33 East, Bagley Siluro-Devonian Pool.

CASE 7187: Application of Blackwood & Nichols Co., Ltd. for four non-standard proration units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of the following four Fruitland and Pictured Cliffs non-standard gas proration units: a 185.68-acre unit comprising the SW/4 of Section 1, Township 31 North, Range 7 West; a 181.4-acre unit comprising the SE/4 of said Section 1; a 176.68-acre unit comprising the SW/4 of Section 6, Township 31 North, Range 6 West; and a 175.21-acre unit comprising the SE/4 of said Section 6. All units are to be dedicated to welis drilled at standard locations thereon.

CASE 7188: Application of Blackwood & Nichols Co., Ltd. for directional drilling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill its Northeast Blanco Unit Well No. 26-A, the surface location of which is 1160 feet from the North line and 60 feet from the West line of Section 8, Township 30 North, Range 7 West, and directionally drill said well in such a manner as to bottom it in the Mesaverde formation within 100 feet of a point 1190 feet from the North line and 790 feet from the West line of said Section 8, the W/2 of the section to be dedicated to the well; applicant further seeks authority to drill its Northeast Blanco Unit Well No. 32-A, the surface location of which is 1450 feet from the North line and 990 feet from the East line of Section 7, Township 30 North, Range 7 West, and directionally drill said well in such a manner as to bottom it in the Mesaverde formation within 100 feet of a point 1850 feet from the South line and 990 feet from the East line of said Section 7, the E/2 of the section to be dedicated to the well.

CAMPBELL BYRD & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL HARL D. BYRD BRUCE D. BLACK MICHAEL B. CAMPBELL WILLIAM F. CARR BRADFORD C. BERGE WILLIAM G. WARDLE

JEFFERSON PLACE SUITE I - 110 NORTH GUADALUPE POST OFFICE BUX 2208 SANTA FE, NEW MEXICO 87501 TELEPHONE: (505) 988-4421 TELECOPIER: (505) 983-6043

February 20, PSEC31VED FEB 20 1981

> OIL CONS EVATION DIVISION SANTA FE

Case 7186

Mr. Joe D. Ramey Director Oil Conservation Division New Mexico Department of Energy and Minerals Post Office Box 2088 Santa Fe, New Mexico 87501

Re: Application of Sun Texas Company for Salt Water Disposal, Lea County, New Mexico

Dear Mr. Ramey:

Enclosed in triplicate is the application of Sun Texas Company in the above-referenced matter.

The applicant requests that this matter be included on the docket for the examiner hearing scheduled to be held on March 11, 1981.

Very truly yours

William F. Carr

WFC:lr

Enclosures

cc: Mr. Mel Schroeder

BEFORE THE FEB 2 C 1981 OIL CONSERVATION DIVISION OIL CONSERVATION DIVISION OIL CONSERVATION DIVISION OIL CONSERVATION DIVISION NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION OF SUN TEXAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

Case 7/86

APPLICATION

Comes now SUN TEXAS COMPANY, by and through its undersigned attorneys and hereby applies to the Oil Conservation Division for approval of a salt water disposal well and in support thereof would show:

> 1. That applicant seeks authority to utilize its State C Account 1 Well No. 3 located 1980 feet from the South line and 660 feet from the West line of Section 2, Township 12 South, Range 33 East, N.M.P.M., Bagley Surlo Devonian Field, Lea County, New Mexico, to dispose of produced salt water into the Devonian formation through perforations and the open hole from 10,856 feet to 11,370 feet.

2. That the State C Account 1 Well No. 3 is currently abandoned.

3. That other wells in the pool are currently being used for salt water disposal.

4. That although there is production within a two mile radius of the subject well, the well can be converted and salt water injected so as not to impair correlative rights or to cause waste. WHEREFORE, Applicant respectfully requests that this matter be set for hearing before one of the Division's duly appointed examiners on March 11, 1981 and, that after notice and hearing as required by law, the Division enter its order approving the application.

-2-

Respectfully submitted,

CAMPBELL, BYRD AND BLACK, P.A.

By iam rr

Post Office Box 2208 Santa Fe, New Mexico 87501 Attorneys for Applicant NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS, COMMON

IN THE MATTER OF THE APPLICATION OF SUN TEXAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

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CAMPBELL, BYRD AND BLACK, P.A.

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Post Office Box 2208 Santa Fe, New Mexico 87501 Attorneys for Applicant DEFORE THE OIL CONSERVATION DIVISION FEB 20 1981

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CAMPBELL, BYRD AND BLACK, P.A.

By

Post Office Box 2208 Santa Fe, New Mexico 87501 Attorneys for Applicant ROUGI

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. 7186

Order No. R- 6646

APPLICATION OF SUN TEXAS COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

Ju

OPDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on <u>March 11</u> 19<u>81</u>, at Santa Fe, New Mexico, before Examiner <u>Richard L. Stamets</u> NOW, on this <u>day of <u>March</u>, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,</u>

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, <u>Sun Texas Company</u>
is the owner and operator of the <u>State C Account 1 Well No. 3</u>
located in Unit _____ of Section __2_, Township _____ 12 South
Range ______ 33 East _____, NMPM, <u>Bagley Fully</u>
Lea _____ County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Devonian formation, with injection into the Open ho/e interval from approximately $\frac{10,037}{10,056}$ feet to 11, 370 feet.

(4) That the injection should be accomplished through $\frac{3/2}{2}$ -inch plastic lined tubing installed in a packer set at approximately $\frac{10900}{100}$ 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 the injection well or system should be equipped pressant /imiting switch or device with a pop-off value of acceptable substitute which will limit the wellhead pressure on the injection well to no more than 2200 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 <u>Devouian</u> formation.

(7) That the operator should notify the supervisor of the <u>Hobbs</u> 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, <u>Sun Texas Company</u>
is hereby authorized to utilize its State C Account 1 Well No. 3
located in Unit <u>L</u> of Section <u>2</u>, Township <u>12 South</u>
Range <u>33 East</u>, NMPM, <u>Bagley Siluro-Devonian Pool</u>,
<u>Lea</u> County, New Mexico, to dispose of produced salt
water into the <u>Devonian</u> formation, injection to
be accomplished through <u>3/2</u> -inch tubing installed in a
packer set at approximately <u>10 900</u> feet, with injection into
<u>10 0 pun hole</u> interval from approximately <u>10,956</u>
feet to <u>11,370</u> 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 the injection well or system shall be equipped pressure / init may switch or device with a pop-off value or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 2200 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 <u>Devonian</u> formation.

(4) That the operator shall notify the supervisor of the <u>Hobbs</u> 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 <u>Hobbs</u> 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 hereinabove designated.

Memo From FLORENE DAVIDSON ADMINISTRATIVE SECRETARY To Called in by Bill Carr 2/20/81 Sun Lexas Company Salt Water Disposal Lea County Alevonian formation thru perf. + open hole interval 10, 856' to 11, 370' State C Adl #3-L 2-125-33E

OIL CONSERVATION COMMISSION-SANTA FE