

203-6820
7KNU

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July 8, 1981

Mr. E. F. Motter
Cities Service
P.O. Box 1919
Midland, Texas 77001

Mr. Charles Mitchell
Cities Service
P.O. Box 300
Tulsa, Oklahoma 74102

RE: NMOCD Case 7264
Order R-6707

Gentlemen:

Enclosed is a copy of the New Mexico Oil
Conservation Division Order approving the use of
Cities' Federal "E" Well No. 2 in the Papers Wash
Field, McKinley County, New Mexico for salt water
disposal.

The order provides among other items, for an
injection pressure limitation of 1020 psi. Please
call if you have any objection to the language of
the order.

Very truly yours,


W. Thomas Kellahin

WTK:jm
Enclosure

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, 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 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.

(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 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 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 hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

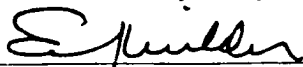
S E A L

fd/

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

OPERATOR Cities Service Company		ADDRESS P.O. Box 1919- Midland, Texas 79702			
LEASE NAME Federal E		WELL NO. 2	FIELD Undes. Entrada		COUNTY McKinley
LOCATION UNIT LETTER <u>H</u> ; WELL IS LOCATED <u>1650</u> FEET FROM THE <u>North</u> <u>990</u> FEET FROM THE <u>East</u> LINE, SECTION <u>28</u> TOWNSHIP <u>19N</u> RANGE <u>5W</u> NMPM.					
CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	9-5/8"	223'	110	surface	circulated
INTERMEDIATE	7"	3335'	775	605'	Temp. Survey
LONG STRING	4-1/2" liner	3040-5355'	140	3040'	---
TUBING	2-3/8"	5150	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Lok-Set @ 5100 ±		
NAME OF PROPOSED INJECTION FORMATION Entrada			TOP OF FORMATION 5157'		BOTTOM OF FORMATION 5328'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLE? Perforations	PROPOSED INTERVAL(S) OF INJECTION 5200 - 5300'		
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil well				HAS WELL EVER BEEN PERFORMED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? No
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH None					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 150' Est		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA None	
ANTICIPATED DAILY INJECTION VOLUME (BBL/DAY) 500	MINIMUM 500	MAXIMUM 7500	OPEN OR CLOSED TYPE SYSTEM Closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Pressure	APPROX. PRESSURE (PSI) 750#
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE - No			WATER TO BE DISPOSED OF No	NATURAL WATER IN DISPOSAL ZONE No	ARE WATER ANALYSES ATTACHED? Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) Federal Land - USGS in Farmington, New Mexico					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Cities Service Company - P.O. Box 1919 - Midland, Texas 79702					
<div style="text-align: right; border: 2px solid black; border-radius: 50%; padding: 10px; width: fit-content; margin: 0 auto;"> RECEIVED JAN 15 1982 OIL CON. COM. DIST. 3 </div>					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING? No		SURFACE OWNER No		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL N/A	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B) Yes		PLAT OF AREA Yes		ELECTRICAL LOG None has been run	
				THE NEW MEXICO STATE ENGINEER No	
				DIAGRAMMATIC SKETCH OF WELL Yes	

I hereby certify that the information above is true and complete to the best of my knowledge and belief.


 (Signature)

 Region Opr. Mgr. - Prod
 (Title)

 June 17, 1981
 (Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If 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.

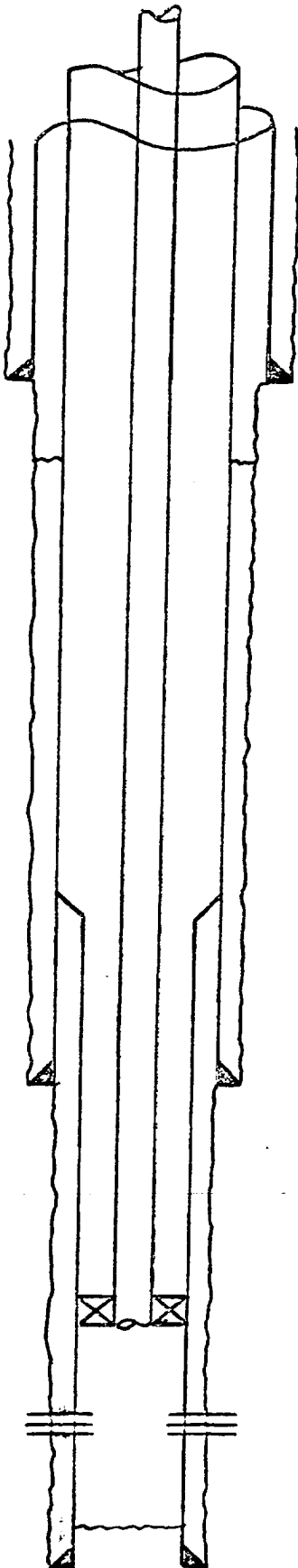
FEDERAL E # 2

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 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 ϕ LOG)

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

T.D. 5355'

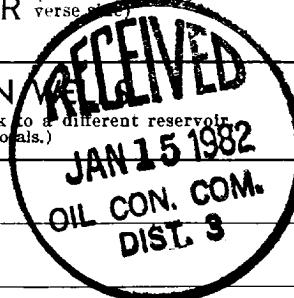
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE*
(Other instructions on re-
verse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)



1. OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> Salt Water Disposal		5. LEASE DESIGNATION AND SERIAL NO. NM 6999
2. NAME OF OPERATOR CITIES SERVICE COMPANY		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR P. O. Box 1919 Midland, Texas 79702		7. UNIT AGREEMENT NAME
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 1650' FNL & 990' FEL		8. FARM OR LEASE NAME Federal "E"
14. PERMIT NO.		9. WELL NO. 2
15. ELEVATIONS (Show whether DF, RT, GR, etc.) 6645' GR		10. FIELD AND POOL, OR WILDCAT Und. Entrada
		11. SEC. T., R., M., OR BLK. AND SURVEY OR AREA Sec. 28-T19N-R5W
		12. COUNTY OR PARISH 13. STATE

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	Well completion data <input checked="" type="checkbox"/>	
(Other) <input type="checkbox"/>		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

T. D. 5355' Shale, PBTD 5312'. Well complete. MIRU pulling unit. DO to 5325'. Perf Entrada 2 SPF 5157-5160'. Total 6 holes. RIH w/1 jt TP, 4½" RTTS, SN on 133 jts 2-3/8" EUE tbg. Set Rtts @ 5101' & SN @ 5095'. Tstd cas - tbg annulus to 500# - OK. Swabbed 285 BW/11 hrs. RIH w. 4½" RTTS on 162 jts 2-3/8" EUE tbg. Set RTTS at 5070'. Mixed & pumped 105 sx C1 B cmt. Isolated leak in 7" casing w/tbg and RTTS between 2778' and 2780'. Set RTTS at 2576'. Pressure csg 1000# held OK. Press tbg to 1200#. Bled off to 900# in 5 min. Perf 2 - 0.25" holes at 2780'. Mix and pump 75 sx Class B cmt w/0.6% Halad-9. Got 60 sx in form and left 15 sx in casing. W.O.C. 12 hours. Released RTTS and POOH. DO to 5312'. Perforate Entrada 4 SPF 5235-5260. Totals 100 holes (0.40" dia). Ran and set 2-3/8" OD tbg and packer @ 5139'. P Press csg to 750#. Acidized w/3000 gals 15% HCL w/additives. Max press 2000#, min press 1500#, AIR 3.5BPM, ISIP 1500#, 5 min SIP 0#. Established inj. rates as follows: 1.25 BPM @ 1000#, 3 BPM @ 1500# and 4 BPM @ 2000#. Hooked up disposal system and started disposal of salt water @ 800# on 12-10-81.

18. I hereby certify that the foregoing is true and correct

SIGNED Elmer Startz TITLE Reg. Oper. Mgr.-Production DATE 12-28-81

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

Instructions

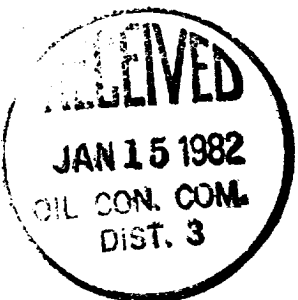
General: This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated, on Federal and Indian lands pursuant to applicable Federal law and regulations, and, if approved or accepted by any State, on all lands in such State, pursuant to applicable State law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 17: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by local Federal and/or State offices. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well; and date well site conditioned for final inspection looking to approval of the abandonment.

WELLS WITHIN A 2 MILE RADIUS OF THE PROPOSED SMD WELL

<u>OPERATOR</u>	<u>WELL NAME & NO.</u>	<u>LOCATION</u>	<u>PRODUCING FORMATION & INTERVAL</u>
DOMESTIC PETROLEUM	FEDERAL 15 #1	F-Sec. 15-T19N-R5W	ENTRADA (5160-5169)
DOMESTIC PETROLEUM	FEDERAL 15 #2	E-Sec. 15-T19N-R5W	ENTRADA (5184-5192)
DOMESTIC PETROLEUM	NAVAJO 15 #3	K-Sec. 15-T19N-R5W	ENTRADA (5140-5148)
DOMESTIC PETROLEUM	NAVAJO 15 #4	L-Sec. 15-T19N-R5W	ENTRADA (5200-5207)
DOMESTIC PETROLEUM	NAVAJO 15 #6	N-Sec. 15-T19N-R5W	T.D. 5396 P&A
DOMESTIC PETROLEUM	NAVAJO 16 #1	I-Sec. 16-T19N-R5W	ENTRADA (5185-5190)
DOMESTIC PETROLEUM	STATE 2 #2	H-Sec. 16-T19N-R5W	T.D. 5383 P&A
DOMESTIC PETROLEUM	NAVAJO 22-A #1	C-Sec. 22-T19N-R5W	ENTRADA (5136-5143)
DOMESTIC PETROLEUM	NAVAJO 22-A #2	J-Sec. 22-T19N-R5W	T.D. 5355 P&A
CLAUDE C. KENNEDY	FEDERAL 22-A #3	K-Sec. 22-T19N-R5W	T.D. 550 P&A
EASTERN PETROLEUM	PAPERTHIN #1	F-Sec. 26-T19N-R5W	MANCOS (2892-2960)
SCHWETZ ET AL	PAPERTHIN #2	D-Sec. 26-T19N-R5W	T.D. 3083 P&A
DOMESTIC PETROLEUM	FEDERAL 26 #1	M-Sec. 26-T19N-R5W	T.D. 8936 P&A
EASTERN PETROLEUM	FEDERAL #1-27	J-Sec. 27-T19N-R5W	T.D. 2114 P&A
CITIES SERVICE CO.	FEDERAL E #1	B-Sec. 28-T19N-R5W	TODILTO (5168-5170) ENTRADA (5171-5173)
CITIES SERVICE CO.	FEDERAL M #1	P-Sec. 21-T19N-R5W	T.D. 5492' SHUT-IN
CITIES SERVICE CO.	FEDERAL E #2	H-Sec. 28-T19N-R5W	T.D. 5355' WAITING APPROVAL TO CONVERT TO SMD



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)

REMARKS:

REMARKS:				
CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0057			
pH When Sampled				
pH When Received	7.2			
Bicarbonate as HCO ₃	708			
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	90			
Calcium as Ca	39			
Magnesium as Mg	4			
Sodium and/or Potassium	1.346			
Sulfate as SO ₄	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.	1.80			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

A circular ink stamp is located on the right side of the page, overlapping the bottom half of the table. The stamp contains the word "RECEIVED" in large, bold, capital letters at the top. Below it, the date "JAN 15 1982" is stamped. At the bottom of the circle, the text "OIL CON. COM." and "DIST. 3" are stamped in two lines.

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.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See other in-
structions on
reverse side)Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> Other <u>Water disposal</u>				5. LEASE DESIGNATION AND SERIAL NO. NM 6999	
b. TYPE OF COMPLETION: NEW WELL <input checked="" type="checkbox"/> WORK OVER <input type="checkbox"/> DEEP-EN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> Other _____				6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR CITIES SERVICE COMPANY				7. UNIT AGREEMENT NAME	
3. ADDRESS OF OPERATOR P. O. Box 1919 Midland, Texas 79702				8. FARM OR LEASE NAME Federal "E"	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 1650' FNL & 990' FEL of Sec. At top prod. interval reported below same as above At total depth same as above				9. WELL NO. 2	
14. PERMIT NO.				DATE ISSUED	
15. DATE SPCCDD				16. DATE T.D. REACHED	
17. DATE COMPL. (Ready to prod.)				18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	
19. ELEV. CASINGHEAD				20. TOTAL DEPTH, MD & TVD	
21. PLUG, BACK T.D., MD & TVD				22. IF MULTIPLE COMPL., HOW MANY*	
23. INTERVALS DRILLED BY				ROTARY TOOLS	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*				CABLE TOOLS	
25. WAS DIRECTIONAL SURVEY MADE				26. TYPE ELECTRIC AND OTHER LOGS RUN	
27. WAS WELL CORED				28. CASING RECORD (Report all strings set in well)	
Casing Size		Weight, lb./ft.	Depth Set (MD)	Hole Size	Cementing Record
9-5/8"		32.3#	223'	13-3/4"	110 sacks
7"		20#	3335'	8-3/4"	625 sacks
29. LINER RECORD		30. TUBING RECORD		AMOUNT PULLED	
Size	Top (MD)	Bottom (MD)	Sacks Cement*	Screen (MD)	Depth Set (MD)
4 1/2"	3041	5355'	140		5139'
31. PERFORATION RECORD (Interval, size and number) 4-0.40" SPF @ 5235-5260 (Total 100 holes)				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL (MD) 5235-5260 AMOUNT AND KIND OF MATERIAL USED 3000 gals 15% HCl Acid	
33.* PRODUCTION				WELL STATUS (Producing or shut-in)	
DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) Salt Water Disposal Well		Active	
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.
12-10-81					
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)				TEST WITNESSED BY	
35. LIST OF ATTACHMENTS Above listed log & deviation survey					
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records					
SIGNED <u>Elmer Startz</u>		TITLE <u>Region Oper. Mgr.—Production</u>		DATE <u>12-24-81</u>	

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF: CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES			38. GEOLOGIC MARKERS			
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
DST #1: 5153.5 - 5164'	(10 1/2')	Todilto & Entrada. 3 3/4" BHC, 1 1/4" TC. No		Gallup	2868	
wtr cushion. Tool opened w/good blow. 5 min surf press 8 psig, 10 min 11				Green Horn	3878	
psig & 15 min 9-1/2 psig. Tool closed for 60 min ISIP. Opened tool for 60				Graneros	3908	
min final flow w/a poor blow which died in 10 min. No surf press. Closed				Dakota	4118	
tool for 180 min. FSIP. Rec'd 900' of drlg mud, 2518' form wtr & form Sd				Morrison	4238	
& 270' Sd (100 mesh), no oil. Sample chamber at 5118' contained Sd & wtr, no				Todilto	5098	
gas & no press. Chls at top tools 1515 ppm w/Res of 1.07, at top of circ sub				Entrada	5112	
at 5024' chls were 1515 ppm w/Res 1.07, pit sample chl 3030 ppm w/Res 0.79.				Carmel	5348	
IMCP		Top Chart at 5120'	Bottom Chart at 5164'			
15 min IF		2437#	2470#			
60 min ISIP		570# - 570#	573#-573#			
60 min Flow		1812#	1854#			
180 min FSIP		1812#	1854#			
FMCP		1812#	1854#			
BHT		2304#	2189#			
		180deg F	189 deg F			

AFFIDAVIT

State of TEXAS CITIES SERVICE Company

County of MIDLAND Lease Name FEDERAL "E" Well # 2

16507N 9001E

In Sec. 28 Twp. 19N Rge. 5W

County of McKinley

State New Mexico

Elmer Startz of lawful age being first duly sworn deposes and

says:

That he supervises development and operation of the captioned lease and is duly qualified and authorized to make this affidavit and is fully acquainted with all facts herein set out concerning Deviation and Directional drilling.

Degrees	Depth	Degrees	Depth	Degrees	Depth
.50	223	.75	5327 -- 49'		
.75	717				
.50	1214				
3.00	1529	T.D.	5355'		
2.50	1773				
2.00	1864				
.75	2353				
1.00	2800				
2.50	3235				
4.25	3727				
5.00	3840				
4.50	3934				
4.00	3996				
3.50	4090				
3.25	4183				
3.50	4328				
3.25	4428				
3.75	4521				
3.25	4614				
3.00	4707				
2.75	4891				
2.75	4984				



236.1'

Further affiant saith not.

Elmer Startz

Subscribed and sworn to before me this 24th day of December, 19 81

My Commission Expires 12-5-84

Midland County, Texas

Patricia Lawrence Notary Public

