

EXHIBIT 7

GEOLOGICAL AND ENGINEERING REVIEW PROPOSED K-M CHAVEROO SAN ANDRES UNIT

General

The Chaveroo pool produces from the San Andres formation. It is located in Roosevelt and Chaves Counties, New Mexico. Production is found at a depth of approximately 4250'. This field was discovered in 1965 and was essentially developed over the next two years. It is currently producing at or near the economic limit on primary depletion in the area operated by Kerr-McGee Corporation (Exhibit 8).

San Andres Geology

The San Andres formation is one of the most widespread hydrocarbon bearing formations in New Mexico. Production is from a cyclic sequence of shallow-water carbonates and evaporites which progressed thru the northwest shelf. These fields are primarily stratigraphic traps and produce from interbedded dolomites and minor limestones. The rock is gray to brown fine crystalline to fine granular anhydritic dolomite with fine vuggy intercrystalline and fracture porosity zones. A more complete description of this field was prepared for the Roswell Geological Society Symposium by George L. Scott, Jr. in November, 1966 (Exhibit 9).

The San Andres can be divided into upper and lower parts based on the occurrence of a regionally correlatable marker bed, a siltstone 5-10' thick, known as the "Pi" marker, which typically occurs 400-650' below the formation top. At Chaveroo, the "Pi" marker is about 100-150' above the top of the porosity. A log cross-section was prepared for the proposed Kerr-McGee unit and shows typical San Andres continuity (Exhibit 10). Logs were located on a datum 100' above sea level. In the project area, the Chaveroo San Andres gross pay zone is up to 200' thick with 40-50' of net effective pay in the P1 and P2 and only isolated porosity stringers in the P3 and P4 zones. Between the P1 and P2 zones, there is an anhydrite layer. San Andres porosities average 7.5% in the project area. Permeabilities in the field are low and are typically less than 1 millidarcy.

Chaveroo San Andres Field

This field produces a sour crude of 24.5° API gravity and it was developed on 40 acre spacing. Cumulative field production was 22.9 million barrels of oil, 33.6 BCF of gas and 27.2 million barrels of water as of January 1, 1988. The field now has about 400 wells. The rapid decline in oil producing rates after development was completed, and rising producing gas-oil ratio's is indicative of

solution gas drive on primary. Water-oil contacts are hard to pick in this San Andres reservoir and wells in the project area typically start to produce water with depletion. This water production does not correlate with primary oil recovery and should not materially affect secondary oil recovery (Exhibit 11 and 12). Champlin had a degree of success at Chaveroo using produced water on a dump flood basis. In spite of the generally limited and uncoordinated injection, one 40 acre five-spot that was flooded by Champlin had a secondary to primary ratio (SPR) of 0.86. We anticipate a secondary to primary ratio of up to 1.0 based on favorable characteristics of the proposed Kerr-McGee Unit on primary depletion.

Proposed K-M Chaveroo San Andres Unit

The K-M Chaveroo Sand Andres Unit area has geologic characteristics and reservoir conditions that are similar to or superior to a typical well of the Chaveroo Field. It is in a area of relatively high per well recovery as shown in Exhibit 13, "Derivation of Tract Participation Factors", attached. Nineteen (19) wells in the K-M Chaveroo San Andres Unit have recovered 1,660,627 barrels of oil to December 31, 1988, or an average of 87,401 barrels of oil per well. A participation formula for the proposed Kerr-McGee Unit is a simple unit formula which credits cumulative production (essentially ultimate primary recovery) to December 31, 1988 as 100%.

Summary

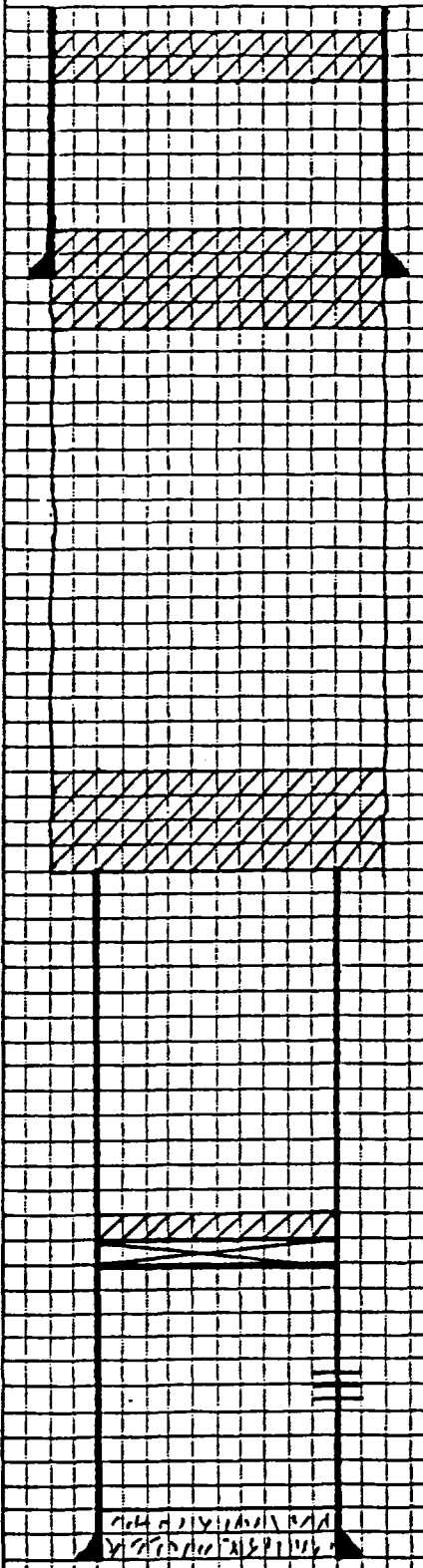
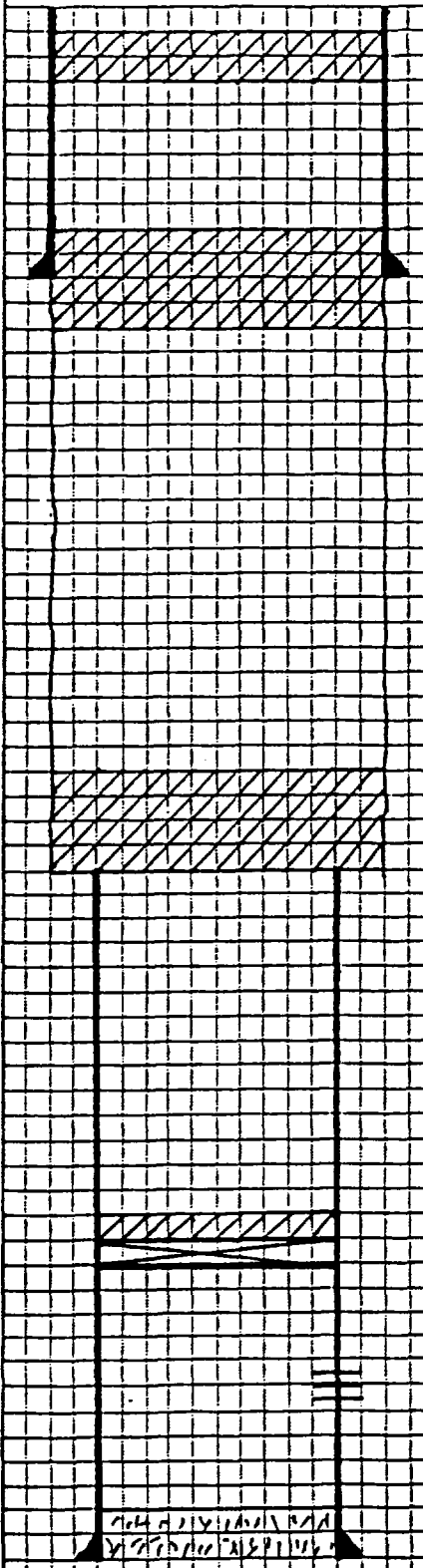
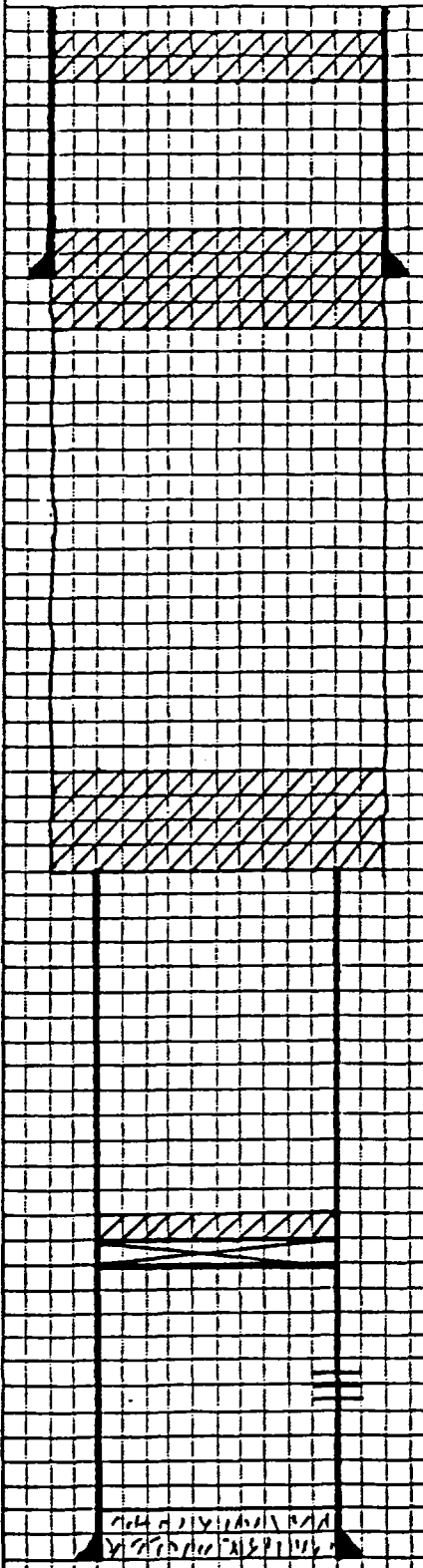
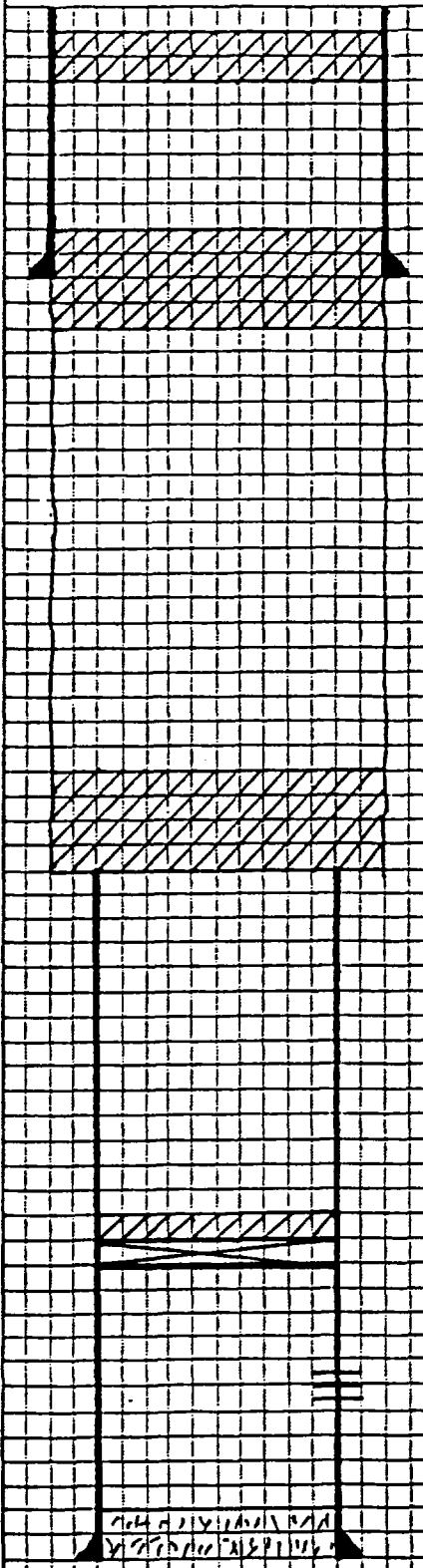
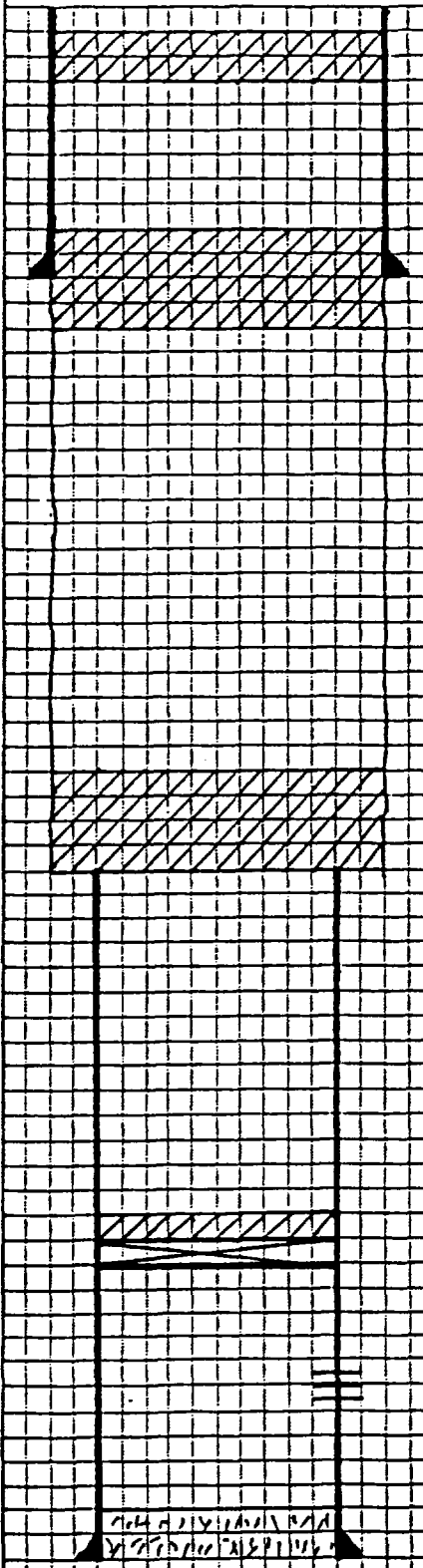
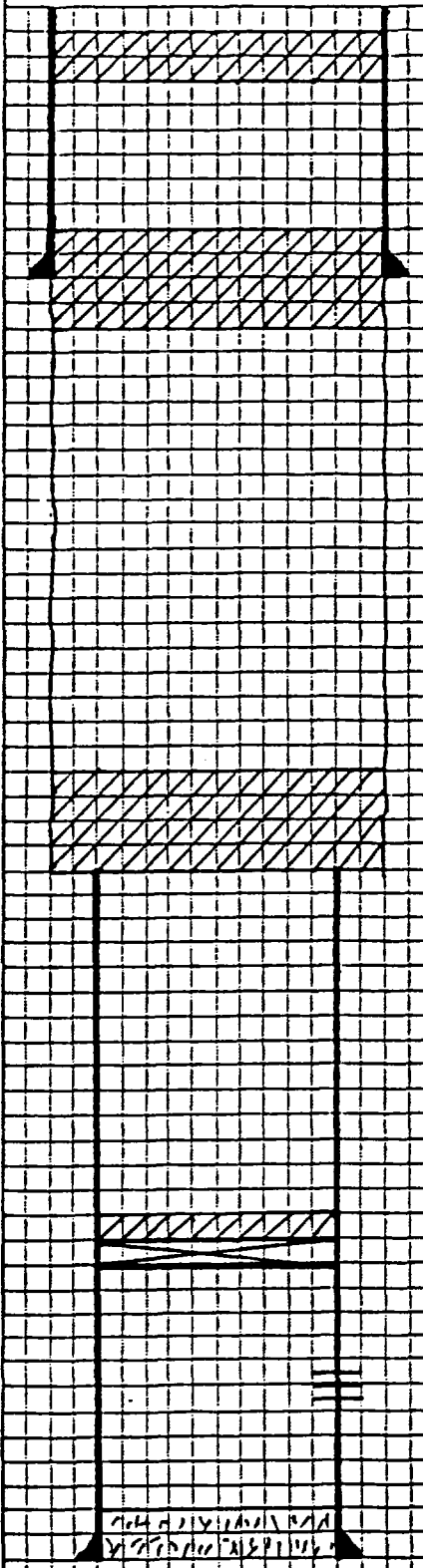
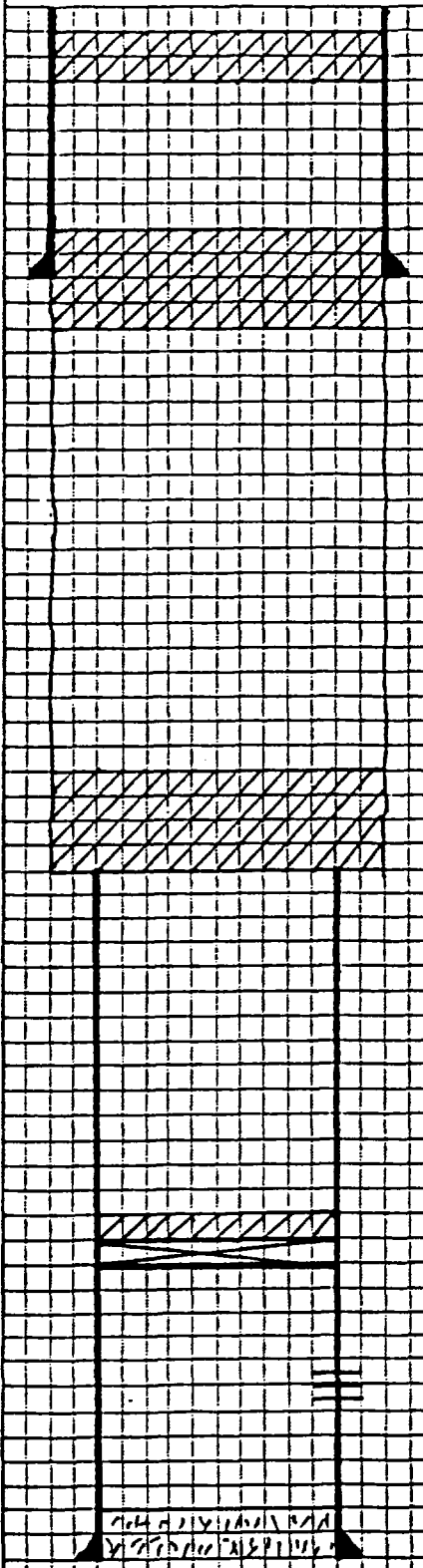
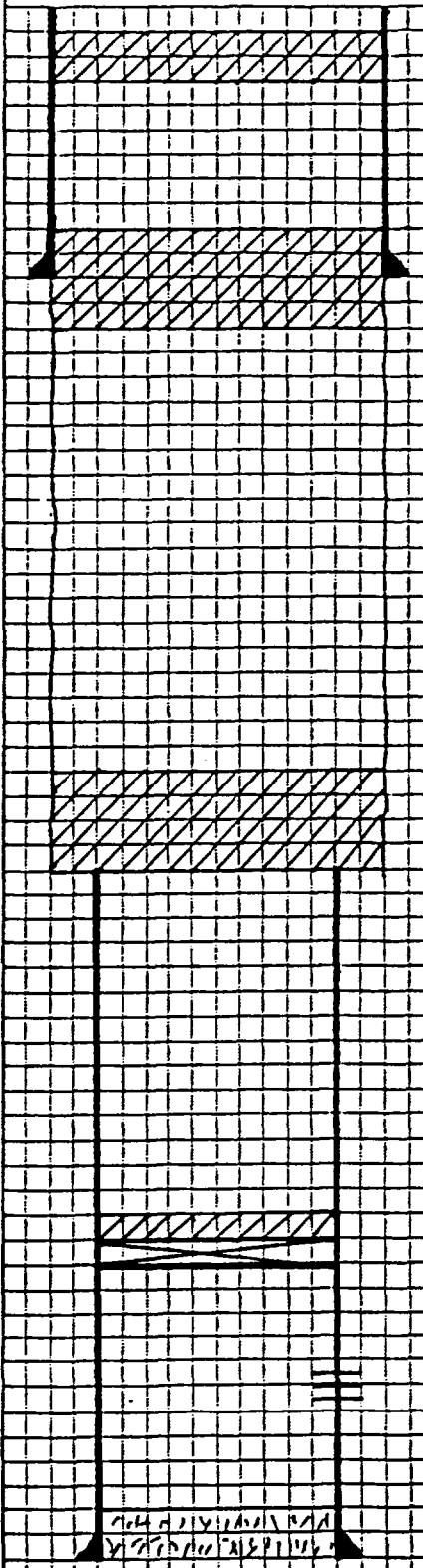
A review of technical data and the proposed operational plans indicate that the K-M Chaveroo San Andres Unit is similar or perhaps somewhat superior to the rest of the Chaveroo field. The Unit area is considered typical of numerous other San Andres fields located in New Mexico that have been waterflooded successfully. The proposed operational plans appear to be sound and provide a water injection pattern consistent with the offset Murphy Haley Chaveroo San Andres Unit. The unitization and waterflooding of the Unit should: a) protect correlative rights; b) promote the conservation of petroleum; and c) prove beneficial to the interest owners, and county, state and federal treasuries.

RJQ029P2/rw4

ROBERT N. ENFIELD
NE, NW, Sec. 11, T8S, R33E
Chaveroo Field
Chaves County, New Mexico
330' FNL & 1980' FWL
Well Name: C. H. Hale No. 1

EXHIBIT 5

Well plugged & abandoned 4-15-75

WELL SCHEMATIC	CASING	Size	Weight	Grade	Thread	Depth
	CASING	8-5/8"	N/A	N/A	N/A	411'
	CASING	4-1/2"	N/A	N/A	N/A	4,365'
	TUBING					
	TUBING					
	DESCRIPTION OF EQUIPMENT					DEPTH
	10 sxs plug at surface					
	8-5/8" csg cemented to surface w/225 sxs					411'
	100' plug at 457'					
	NOTE: Well filled w/mud from stub of 4 1/2" csg to surface.					
	100' plug at 987'					
	Stub of 4 1/2" casing					987'
						
	CIBP w/3 sxs on top of plug.					4,200'
	San Andres perms: 4242-4348'					
	PBTD					4,353'
	4 1/2" casing cemented w/350 sxs					4,365'
	TD					4,365'
Prepared By				Date		
G. Bunas				2-8-89		

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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-55

5a. Indicate Type of Lease	
State <input type="checkbox"/>	Fee <input checked="" type="checkbox"/>
5. State Oil & Gas Lease No.	

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		7. Unit Agreement Name
Name of Operator		8. Farm or Lease Name
ROBERT N. ENFIELD		C. H. HALE
Address of Operator		9. Well No.
P. O. BOX 2431, SANTA FE, NEW MEXICO 87501		1
Location of Well		10. Field and Pool, or Wildcat
UNIT LETTER <u>C</u> <u>330</u> FEET FROM THE <u>North</u> LINE AND <u>1980</u> FEET FROM THE <u>West</u> LINE, SECTION <u>11</u> TOWNSHIP <u>8S</u> RANGE <u>33E</u> NMPM.		Chavarro
15. Elevation (Show whether DF, RT, CR, etc.)		12. County
4384 DF		Chaves

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOBS <input type="checkbox"/>	OTHER <input type="checkbox"/>

7. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

1. Cast iron bridge plug set at 4,200'. 3 sx. cement set on top of plug
2. Cut and pulled 4-1/2" at 987'.
3. 100' cement plug at stub of 4-1/2" at 987'
4. Mud from stub of 4-1/2' to surface
5. 100' cement plug at surface pipe shoe 457'
6. 10 sx. plug at surface
7. Surface marker
8. Pad, pit and roads filled and ripped.

Work finished as of 4/15/75

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

SIGNED <u>Robert N. Enfield</u>	TITLE OPERATOR	DATE 5/6/75
APPROVED BY <u>John W. Runyon</u>	TITLE Geologist	DATE 5/11/75

JACK L. MCCLELLAN
NW, NW, Sec. 12, T8S, R33E
CHAUVEROO FIELD
CHAVES COUNTY, NEW MEXICO
330' FNL & 330' FWL

Well Name: Klepfer State No. 1

Well plugged & abandoned 2-27-69

WELL SCHEMATIC	CASING	Size	Weight	Grade	Thread	Depth
	CASING	8-5/8"	20	N/A	N/A	402'
	CASING	4-1/2"	9.5	N/A	N/A	4,408'
	TUBING					
	DESCRIPTION OF EQUIPMENT					DEPTH
	10 sxs plug @ surface					
	8-5/8" csg cemented to surface w/210 sxs					402'
	25 sxs plug @ 402'					
	NOTE: Heavy mud was placed between all plugs.					
	25 sxs plug @ 1950'					
	25 sxs plug @ 2350'					
	25 sxs plug @ 2500'					
	Stub of 4 1/2" casing					2,500'
	San Andres perms: 4292', 4294', 4300', 4303', 4308',					
	4314', 4316', 4319', 4324', 4373', 4378', 4382', 4384'					
	& 4390'					
	25 sx plug @ 4382'					
	PBSD					4,393'
	4 1/2" casing cemented w/225 sxs					4,408'
	TD					4,410'
Prepared By				Date		
G. Bunas				2-8-89		

1. NAME OF WELL		2. DATE	
3. LOCATION		4. DEPTH	
5. TYPE OF WELL		6. OTHER DATA	

7. NAME OF WELL		8. DATE	
9. LOCATION		10. DEPTH	
11. TYPE OF WELL		12. OTHER DATA	

13. NAME OF WELL		14. DATE	
15. LOCATION		16. DEPTH	
17. TYPE OF WELL		18. OTHER DATA	

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

THIS WELL WAS PLUGGED AND ABANDONED FEBRUARY 27, 1969, AS FOLLOWS:

- 25 SACK PLUG AT 4382' (T. D.)
- 25 SACK PLUG AT 2500' (STUB OF 4 1/2" CASING)
- 25 SACK PLUG AT 2350' (BASE OF SALT)
- 25 SACK PLUG AT 1950' (TOP OF SALT)
- 25 SACK PLUG AT 402' (8-5/8" CASING)
- 10 SACK PLUG AT SURFACE.

HEAVY MUD WAS PLACED BETWEEN ALL PLUGS, THE LOCATION CLEANED AND A MARKER SET.

ILLEGIBLE

20. I hereby certify that the information above is true and complete to the best of my knowledge and belief.	
21. NAME OF WELL	22. DATE
23. LOCATION	24. DEPTH
25. TYPE OF WELL	26. OTHER DATA

HOBBES OFFICE, L.L.C. - DE O.C.C.

NEW MEXICO OIL COMPANY / WELL COMPLETION OR RECOMPLETION REPORT AND LOG

OG 1063

1. TYPE OF WELL: ☒ OIL WELL ☐ GAS WELL ☐ WATER WELL ☐ OTHER _____

2. TYPE OF COMPLETION: ☒ PERFORATION ☐ PACKER ☐ OTHER _____

3. WELL NAME: **JACK E. MCCLELLAN**

4. LOCATION: **P.O. Box 848, ROSMELL, NEW MEXICO 88201**

5. WELL STATUS: **UNDESIGNATED**

6. LOCATION: **D** LOCATED **330** FEET FROM THE **NORTH** LINE AND **330** FEET FROM _____

7. NEAREST TOWN: **12** TOWNSHIP: **8-S** RANGE: **33-E** MAP: _____

8. DATE OF COMPLETION: **2/22/67**

9. DATE OF LOG: **3/3/67**

10. ELEVATION (DE, RKB, RT, GR, etc.): **4346 GL 4355 DF 4347**

11. PERFORATION: **4410**

12. PERFORATION TYPE: **4393**

13. IF MULTIPLE COMPLETIONS, HOW MANY: _____

14. INTERVALS DRILLED BY: **0 - 4410**

15. PERFORATION INTERVALS OF THIS COMPLETION - TOP, BOTTOM, THICKNESS: **4292-4326, 4373-4390 SLAUGHTER ZONE, SAN ANDRES**

16. TYPE OF LOGGING AND OTHER LOGS RUN: **GAMMA RAY-NEUTRON (IN CASING)**

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8	20 LB.	402	12-3/4"	210 SX (CIRC)	0
4-1/2	9 1/2 LB.	4408	7-7/8"	225 SX	0

LINER RECORD				TUBING RECORD		
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET
					2-3/8"	43481

PERFORATION RECORD (Interval, size and number)		ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
DEPTH INTERVAL	AMOUNT AND KIND OF MATERIAL	DEPTH INTERVAL	AMOUNT AND KIND OF MATERIAL
4373-4390	1500 ACID & 3000 ACID	4292-4326	3000 ACID
4292-4326	30,000 LSE OIL, 30,000		

PRODUCTION

DATE OF TEST	TEST TYPE	CHOKE SIZE	FLOWING PERIOD	OIL - BBL.	GAS - MCF	WATER - BBL.	GAS - OIL RATIO
4/26/67	24	2" OPE		84	TSTM	40	
	150			84	TSTM	40	26

17. DIMENSIONS OF GAS (if applicable, used for flow, control, etc.): _____

18. NAME OF WORKMAN: _____

19. DECLARATION: I declare that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease	
State <input type="checkbox"/>	Fee <input checked="" type="checkbox"/>
5. State Oil & Gas Lease No.	

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

OIL WELL <input checked="" type="checkbox"/>	GAS WELL <input type="checkbox"/>	OTHER <input type="checkbox"/>
Name of Operator Glenn Petroleum Corp.		
Address of Operator 2906 Maple Ave., Dallas, Texas 75201		
Location of Well INITIAL LETTER <u>B</u> <u>2310</u> FEET FROM THE <u>East</u> LINE AND <u>330</u> FEET FROM THE <u>North</u> LINE, SECTION <u>11</u> TOWNSHIP <u>8S</u> RANGE <u>33E</u> N.M.P.M.		

7. Unit Agreement Name none
8. Farm or Lease Name C.H. Hale
9. Well No. 1
10. Field and Pool, or Wildcat Chaveroo San And.
11. Elevation (Show whether DF, RT, GR, etc.) 4361 Gr.
12. County Chaves

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

NOTICE OF INTENTION TO:

FORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>
PROBABLY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>

SUBSEQUENT REPORT OF:

REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
COMMENCE DRILLING OPS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
CASING TEST AND CEMENT JOBS <input type="checkbox"/>	OTHER <input type="checkbox"/>

Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

5-15-71: Set cast iron wire line bridge plug at 3620'. Put 2 sack cement cap on CIBP with dump bailer. Cut off 4 1/2" casing at 525'. Pull casing. Set 20 sack cement plug 550'-500'. Set 20 sack plug at 375". Set 10 sack plug at surface. Welded on cap on surface and set up 4" pipe monument marker. Removed surface equipment.

5-19-71: Covered all pits.

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

SIGNED BY <u>President</u>	TITLE <u>President</u>	DATE <u>8-14-71</u>
SIGNED BY <u>[Signature]</u>	TITLE <u>COMMISSIONER DISTRICT</u>	DATE <u>AUG 23 1971</u>
CONDITIONS OF APPROVAL, IF ANY:		

EXHIBIT 6

K-M CHAVEROO SAN ANDRES UNIT

Injection Water

On September 15, 1988 water samples were obtained from Dale Brown, the proposed water source for the K-M Chaveroo San Andres Unit, and the tank battery on the Kerr-McGee State's "F" Lease in the Chaveroo Field. The Ogallala water from Brown (Section 8, TWP7S, Rge 34E) was mixed with State "F" Lease produced formation brine and no precipitates were formed and as such the two appear compatible. Refer to laboratory report No. 49865, conducted by Oilab, Inc. of Oklahoma City and dated September 22, 1988.

On February 2, 1989 water samples were received by Mobile Analytical Laboratories from the State F #2 and State F #3 WSW. This is fresh water obtained from two water supply wells drilled to a depth of 500 feet on the Kerr-McGee State "FU" Lease. These waters are of comparable quality to the Ogallala water produced from the water source of Dale Brown. The water produced from Dale Brown's supply and the water from Kerr-McGee's water supply wells are considered compatible with each other and with produced formation water and are suitable for use in the secondary recovery project.

RJQ:lrg01

CHAUVEROO FIELD

	Sec 1, T8S, R33E		Sec 8, T7S, R34E
Source	WSW F#2	WSW F#3	Windmill Dale Brown
Date	2-2-89	2-2-89	9-15-88
	MG/L	MG/L	MG/L
Calcium	6	7	112
Magnesium	2	1	42
Sodium	304	293	134
Potassium			3
Barium			Trace
Iron	1.0	1.0	0.1
Silica			14
Bicarbonate*	166	161	165
Carbonate**	19	17	0
Hydroxide			0
Sulfate (SO ₄)	232	248	350
Chloride	195	173	170
	=====	=====	=====
Total Dissolved Solids	924	900	990
*(As CaCO ₃)			136
** (As CaCO ₃)			0
Total Hardness (As CaCO ₃)			456
P Alkalinity (As CaCO ₃)	16	14	
M Alkalinity (As CaCO ₃)	168	160	136
Specific Gravity	1.0001		1.0021
(Temp °F)			74
Resistivity	1.0101	.9901	6.58
(Temp °F)			77
pH	8.4	8.3	7.78
Calcium Hardness	14	18	
Magnesium Hardness	10	6	
	=====	=====	
Total Hardness	24	24	
Color (Before Filtration)	Colorless	Colorless	Colorless
Color (After Filtration)	Colorless	Colorless	Colorless

RJQ:lrg01

LABORATORY REPORT NO. 49865

SEPTEMBER 22, 1988

KERR-MCGEE CORPORATION

SAMPLED SEPTEMBER 1988 (BY KERR-MCGEE)

ANALYSES OF 3 WATER SAMPLES:

TUCKER RANCH (FRESH WATER)
DALE BROWN (WINDMILL - OGALLALA FORMATION)
STATE "F" LEASE (CHAVEROO FIELD)

OILAB, INC.



PETROLEUM LABORATORY
AND GAS ENGINEERING
FLOW MEASUREMENT SERVICE

SURESH JOSHI

Area Code 405
Telephone 528-8255

401 N.E. 46
Oklahoma City, Oklahoma
73105

1 - ROBERT J. QUANCE, OKLAHOMA CITY

U. S. Onshore Oper.
SEP 23 1988
E & P DIV.

LABORATORY REPORT NO. 49865

WATER ANALYSIS

KERR MCGEE CORPORATION
DALE BROWN
WINDMILL
FORMATION: OGALLALA
200' NORTH OF HOUSE

DATE SAMPLED: 09-15-88
DATE RUN: 09-17-88
ZONE:

SAMPLED BY: KERR MCGEE

COLOR(BEFORE FILTRATION): COLORLESS
COLOR(AFTER FILTRATION): COLORLESS

*****CHEMICAL CHARACTERISTICS*****

	mg/l
CALCIUM	112
MAGNESIUM	42
SODIUM	134
POTASSIUM	3
BARIUM	TRACE
IRON	0.10
SILICA	14
BICARBONATE*	165
CARBONATE**	0
HYDROXIDE	0
SULFATE	350
CHLORIDE	170
*(AS CaCO3)	136
** (AS CaCO3)	0

TOTAL HARDNESS (AS CaCO3)	456	RESISTIVITY (AT 77 DEG F)	6.58
P ALKALINITY (AS CaCO3)	0	TOTAL DISSOLVED SOLIDS	980
M ALKALINITY (AS CaCO3)	136	pH VALUE	7.73
SPECIFIC GRAVITY (@ 74 DEG F)	1.0021		

LABORATORY REPORT NO. 49865

WATER ANALYSIS

KERR MCGEE CORPORATION
STATE "F" LEASEE
FIELD: CHAVEROO
CHAUVERS CO/NEW MEXICO

DATE SAMPLED: 09-15-88
DATE RUN: 09-17-88
ZONE:

SAMPLED BY: KERR MCGEE

COLOR(BEFORE FILTRATION): COLORLESS ODOR OF SULFIDES
COLOR(AFTER FILTRATION): COLORLESS

*****CHEMICAL CHARACTERISTICS*****

	mg/l
CALCIUM	28400
MAGNESIUM	4440
SODIUM	66500
POTASSIUM	6675
BARIUM	TRACE
IRON	15
SILICA	45
BICARBONATE*	325
CARBONATE**	0
HYDROXIDE	0
SULFATE	350
CHLORIDE	171580
*(AS CaCO3)	266
** (AS CaCO3)	0

TOTAL HARDNESS (AS CaCO3)	97800	RESISTIVITY (AT 77 DEG F)	0.035
P ALKALINITY (AS CaCO3)	0	TOTAL DISSOLVED SOLIDS	278285
M ALKALINITY (AS CaCO3)	266	pH VALUE	6.01
SPECIFIC GRAVITY (@ 74 DEG F)	1.1775		

SOLUBLE SULFIDES 17.6
NO PRECIPITATES WERE FORMED WHEN
THIS WATER WAS MIXED WITH FRESH
WATER FROM DALE BROWN WINDMILL
& AS SUCH THE TWO APPEAR TO BE
COMPATIBLE

LABORATORY REPORT NO. 49865

WATER ANALYSIS

KERR MCGEE
TUCKER RANCH
FRESH WATER

DATE SAMPLED 09-15-88
DATE RUN: 09-17-88
ZONE:

SAMPLED BY: KERR MCGEE

COLOR(BEFORE FILTRATION): COLORLESS
COLOR(AFTER FILTRATION): COLORLESS

*****CHEMICAL CHARACTERISTICS*****

	mg/l
CALCIUM	138
MAGNESIUM	38
SODIUM	20
POTASSIUM	4
BARIUM	TRACE
IRON	0.08
SILICA	12
BICARBONATE*	135
CARBONATE**	0
HYDROXIDE	0
SULFATE	180
CHLORIDE	130
*(AS CaCO3)	110
** (AS CaCO3)	0

TOTAL HARDNESS (AS CaCO3)	504	RESISTIVITY (AT 77 DEG F)	9.52
P ALKALINITY (AS CaCO3)	0	TOTAL DISSOLVED SOLIDS	645
M ALKALINITY (AS CaCO3)	110	pH VALUE	7.90
SPECIFIC GRAVITY (@ 74 DEG F)	1.0014		

CVC: FBC
BQ

1000
This water compared with E. 13.35
with #17 analysis on W. 13.35
F4#17 Is this water
compatible with San Antonio
water?
Cref

MOBILE ANALYTICAL LABORATORIES
P.O. BOX 69210
ODESSA, TEXAS 79769-9210
PHONE: 915-337-4744

FEBRUARY 9, 1989

SAMPLE RECEIVED: 02/02/89

KERR-McGEE CORP.
4602 W. CO. RD.
ODESSA, TEXAS 79764

WATER ANALYSIS: STATE F#2 WSW 500FT. MILENSAND N.M., LAB 224:

DISSOLVED SOLIDS

<u>CATIONS:</u>	MEQ/L	IONIC MG/L
SODIUM, Na	13.20	304
CALCIUM, Ca	0.28	6
MAGNESIUM, Mg	0.20	2
<u>ANIONS:</u>		
CHLORIDE, Cl	5.49	195
SULFATE, SO ₄	4.83	232
CARBONATE, CO ₃	0.64	19
BICARBONATE, HCO ₃	2.72	166
<u>TOTAL DISSOLVED SOLIDS:</u>		924

OTHER PROPERTIES:

pH	8.4	P-ALKALINITY AS CaCO ₃	16 MG/L
IRON	1.0 MG/L	M-ALKALINITY AS CaCO ₃	168 MG/L
H ₂ S	0.00	CONDUCTIVITY	990 MICROMOHS/CM
CO ₂	0.00	CALCIUM HARDNESS	14 MG/L
SPECIFIC GRAVITY	1.000	MAGNESIUM HARDNESS	10 MG/L
		TOTAL HARDNESS	24 MG/L

NOTE: SAMPLES CONTAINING HAZARDOUS AND TOXIC SUBSTANCES WILL BE RETURNED TO POINT OF ORIGIN FOR DISPOSAL. IF THIS IS NOT POSSIBLE AND MOBILE ANALYTICAL LABORATORIES HAS TO DISPOSE OF THE SAMPLE IN ACCORDANCE WITH EPA REGULATIONS, THEN ADDITIONAL CHARGES WILL BE BILLED TO COVER THE COST OF DISPOSAL OF THIS SAMPLE.

RECEIVED

FEB 17 1989

OIL & GAS DIVISION
JOINT VENTURE

MOBILE ANALYTICAL LABORATORIES
P.O. BOX 69210
ODESSA, TEXAS 79769-9210
PHONE: 915-337-4744

FEBRUARY 9, 1989

SAMPLE RECEIVED: 02/02/89

KERR-McGEE CORP.
4602 W. CO. RD.
ODESSA, TEXAS 79764

WATER ANALYSIS: STATE F#3 WSW 500FT. MILENSAND N.M., LAB 225:

DISSOLVED SOLIDS

<u>CATIONS:</u>	MEQ/L	IONIC MG/L
SODIUM, Na	___12.75___	___293___
CALCIUM, Ca	___0.36___	___7___
MAGNESIUM, Mg	___0.12___	___1___
<u>ANIONS:</u>		
CHLORIDE, Cl	___4.86___	___173___
SULFATE, SO ₄	___5.17___	___248___
CARBONATE, CO ₃	___0.56___	___17___
BICARBONATE, HCO ₃	___2.64___	___161___
<u>TOTAL DISSOLVED SOLIDS:</u>		___900___

OTHER PROPERTIES:

pH	___8.3___	P-ALKALINITY AS CaCO ₃	___14 MG/L___
IRON	___1.0 MG/L___	M-ALKALINITY AS CaCO ₃	___160 MG/L___
H ₂ S	___0.00___	CONDUCTIVITY	1,010 MICROMOHS/CM
CO ₂	___0.00___	CALCIUM HARDNESS	___18 MG/L___
SPECIFIC GRAVITY	___1.000___	MAGNESIUM HARDNESS	___6 MG/L___
		TOTAL HARDNESS	___24 MG/L___

NOTE: SAMPLES CONTAINING HAZARDOUS AND TOXIC SUBSTANCES WILL BE RETURNED TO POINT OF ORIGIN FOR DISPOSAL. IF THIS IS NOT POSSIBLE AND MOBILE ANALYTICAL LABORATORIES HAS TO DISPOSE OF THE SAMPLE IN ACCORDANCE WITH EPA REGULATIONS, THEN ADDITIONAL CHARGES WILL BE BILLED TO COVER THE COST OF DISPOSAL OF THIS SAMPLE.

REC'D

FEB 15 1989

SWD

WELL DATA FOR PROPOSED UNIT
KERR-MCGEE STATE "F", "C", "FU" AND BRISTOL LEVICK STATE "2" LEASES
CHAVEROO (SAN ANDRES) FIELD

WELL NAME	NEW UNIT WELL #	WELL TYPE	COMPLETION DATE	LOCATION	OIL	DECEMBER, 1988 GAS, MCF	WATER	STATUS
State "F"								
#1D	006	Producer	06-07-66	Sec 2, TWP 8S, RGE 33E	0	0	0	Shut-In
#2C	005	"	06-19-66	660' FNL & 660' FWL	53	245	61	
#3E	008	"	07-15-66	660' FNL & 1980' FWL	53	102	61	
#4F	009	"	07-17-66	1980' FNL & 660' FWL	53	245	122	
#5L	016	"	09-08-66	1980' FNL & 1980' FWL	157	184	0	
#6K	015	"	09-03-66	1980' FSL & 660' FWL	53	122	91	
#7J	014	"	09-07-66	1980' FSL & 1980' FWL	53	102	182	
#8I	013	"	09-25-66	1980' FSL & 660' FEL	79	184	122	
#10N	018	"	10-11-66	660' FSL & 1980' FWL	0	0	0	Shut-In
#11M	017	"	10-26-66	660' FSL & 660' FWL	79	184	61	
#12O	019	"	11-05-66	660' FSL & 1980' FEL	79	61	669	
#13P	020	"	11-27-66	660' FSL & 660' FEL	79	122	213	
#14C	007	"	10-03-80	1310' FNL & 1330' FWL	104	470	912	
Levick State "2"								
#1G	010	Producer	08-23-66	1980' FNL & 1980' FEL	92	301	155	
State "C"								
#1B	004	Producer	06-20-66	1980' FEL & 660' FNL	88	128	375	
#2A	003	"	06-14-66	660' FNL & 660' FEL	59	120	268	
#3H	011	"	07-20-66	1980' FNL & 660' FEL	88	139	375	
State "C"								
#4D	002	Producer	08-10-66	Sec 1, TWP 8S, RGE 33E	59	128	187	
#5C	001	SWD	08-05-66	660' FNL & 660' FWL	0	0	0	SWD 4239-4416'
State "FU"								
#9E	012	Producer	09-29-66	1650' FNL & 330' FWL	58	62	103	
TOTAL					1286	2899	3957	
RJQ05:1rg01								

ROSWELL GEOLOGICAL SOCIETY SYMPOSIUM

Author: George L. Scott, Jr.
 Affiliation: Consulting Geologist
 Date: November 1966

Field Name: Chaveroo
 Location: T-7,8-S, R-33, 34-E
 County & State: Chaves & Roosevelt Counties,
 New Mexico

Discovery Well: Champlin Pet. Co. & Warren American Oil Co. #1 Hondo State, SE/4 NE/4
 Section 32, T-7-S, R-33-E. Completed 3/20/65
 IPP 148 BOPD + 2 BWP, GOR 810.

Exploration Method Leading to Discovery: 80% subsurface 20% seismic

Pay Zone: Top of field pay is at 4184 (+255)
 Formation Name: San Andres Depth & Datum Discovery Well: Top perf in disc. well 4299.
 Lithology Description: Tan to brown, fine to medium crystalline dolomite with scattered anhydrite inclusions, and vugular, inter-crystalline and fracture porosity. Most wells complete from 1st to 2nd porosities; scattered wells also perf 3rd porosity. The net porosity is based on a cut-off of 4% and covers only 1st and 2nd porosities. (Cont. under Type Trap)
 Approximate average pay: 210 gross 40 net Productive Area 11,000 acres (on Nov. 1, 1966)

Type Trap: Stratigraphic. Porosity and permeability fails up dip along the north and west margin of the field to provide the trap.

Pay Zone (cont. from above). Net porosity map is not a strict net pay map as there are wells where extensive fracturing has lowered the porosity cut-off to 2 1/2%. It also includes porosity in the 2nd porosity interval at the south and southeast field margin that is

Reservoir Data: below the irregular oil-water contact.

6 % Porosity, 7 Md Permeability, 25 % Sw, 16 % So

Oil: 26° API, black, sour

Gas: GOR 400 to 1000

Water: 66,600 Na+K, 27,680 Ca, 4860 Mg, 165,600 Cl, 200 SO₄, 240 HCO₃, — Fe

Specific Gravity 1.174 Resistivity 0.35 ohms @ 110 °F

Initial Field Pressure: 1340 psi @ +140 datum Reservoir Temp. 110 F

Type of Drive: Solution gas

Normal Completion Practices: Set casing through pay and selectively perforate with one shot per interval. Acidize with 2000 gallons of acid, and sand fracture with 30,000 gallons of oil and 30,000 pounds of sand.

Type completion: Both flowing and pumping Normal Well Spacing 40 Acres

Deepest Horizon Penetrated & Depth: Bough "C" at 9100' in the discovery well. At the south end of the field several abandoned Bough "C" wells have been plugged back to the San Andres

Other Producing Formations in Field: None within the area of San Andres production, however, Bough "C" production in the Tobac field adjoins the Chaveroo San Andres field on the south.

Production Data:

YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN M MCF		YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN M MCF	
		Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE			Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE
1965	OIL	45		166,896	166,896		OIL				
	GAS			179,400	179,400		GAS				
1966*	OIL	241		1,474,705	1,641,601		OIL				
	GAS			1,084,527	1,263,927		GAS				
	OIL						OIL				
	GAS						GAS				
	OIL						OIL				
	GAS						GAS				

* 1966 production to September 30, 1966.