Telephone (817) 723-2166

S&J OPERATING COMPANY

FAX (817) 723-8113

811 Sixth Street, Suite 300 Post Office Box 2249

WICHITA FALLS, TEXAS
76307-2249

January 20, 1992

Mr. David Catanach
Oil Conservation Division
State of New Mexico
Energy and Minerals Department
State Land Office Building
Santa Fe, New Mexico 87501

Re: Application for Authorization to Inject
S & J Operating Company
Denton North Wolfcamp Unit
Lea County, New Mexico

Dear Mr. Catanach:

After talking with you on Friday, January 17, 1992, I have researched the records to answer the questions you have about the wells within the Area of Review pertaining to the referenced application. We are sending you four copies of a new tabulation showing the calculated tops of cement on the wells you have in question and a new map showing a revised one half mile circle around injection well No. 7-3. It was determined that the Priest well No. 8 in Section 1, T15S R37E was actually 2750' from well No. 7-3 and should not have been included in the one half mile Area of Review circle.

In answer to other questions, we found that the Hondo Oil and Gas, Dickinson "D" well No. 5 shown on Page 3 of the Area of Review data had the 5 1/2" casing cemented with 1,000 sacks of cement from a scout ticket data sheet which we have included. We found in reviewing the files that well No. 7-4 on the Denton North Wolfcamp Unit also on Page 3 had the 7" casing actually cemented with 700 sacks rather than 400 sacks which apparently was a misprint. We were still not able to find the amount of cement used to cement the 5 1/2" casing in the A. R. Priest well No. 5 and have included herewith a scout ticket for this well which shows that the number of sacks apparently were not properly reported to the scouting service. This 7" casing was cemented on top of the Wolfcamp; therefore, we are certain there is cement in the well which should cover an inadequate interval. We will continue to try to determine the amount of cement used in this particular well.

In calculating the tops of cement in the various wells we were able to find the information on the S & J Operating Company, T. D. Pope well No. 3 shown at the bottom of Page 2. The 5 1/2" casing was cemented in this well with a total of 600 sacks. The records which we have included herewith show 500 sacks of cement with 4% gel followed by 100 sacks of neat cement. We have determined an average fill factor for a cement job such as this of 1.49 cubic feet per sack. We have also determined that a fillup factor for these liners or casing strings of approximately 75 percent is probably more representative than the 70 percent you stated that you used. Utilizing these data we have calculated the top of the cement in the T. D. Pope well No. 3 to be 8758' whereas the top of the cement from a temperature survey showed to be 8790'. We believe that the other cement jobs on the liners or casing strings to the Devonian are similar since all operators knew that they must bring cement up across the Wolfcamp zone which was already producing. Therefore, we used a ratio of five out of every six sacks on any job being cement with 4% gel and the balance being neat cement. Utilizing the fill factor of 1.49 cubic feet per sack and the fillup factor of 75 percent we calculated the top of the cement in the other wells which should be satisfactory.

We hope that the data submitted herewith will be satisfactory to you and that this information will help expedite the issuing of permits for these wells.

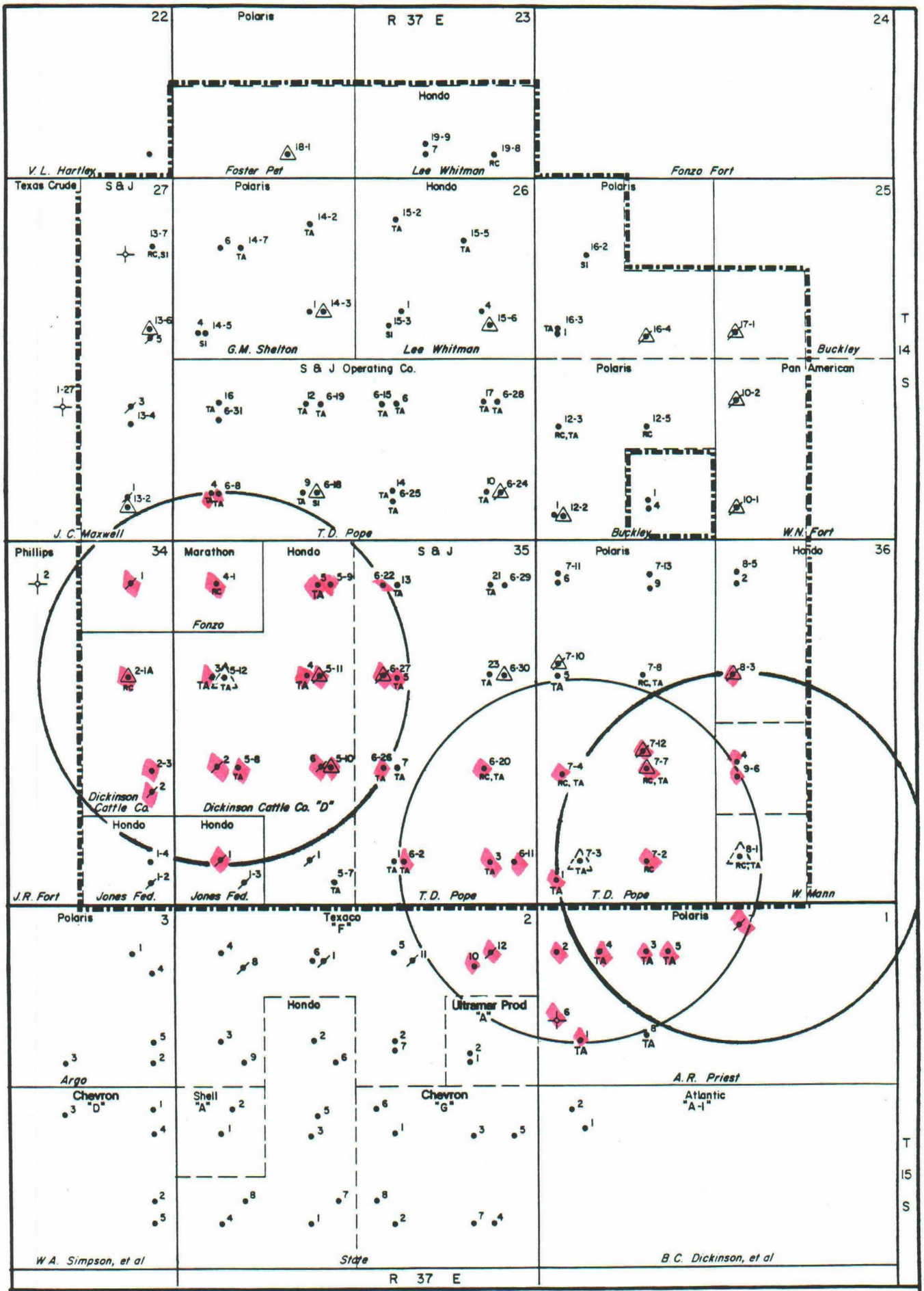
Please contact us if you have any questions concerning this information. Thank you for your help and consideration.

Yours very truly,

S & J OPERATING COMPANY

Peyton S. Carnes, Jr.

PSCjr/dk



— LEGEND —

- PRODUCING OIL WELL
- WATER INJECTION WELL
- PLUGGED & ABANDONED WELL
- TA TEMPORARILY ABANDONED
- SI SHUT IN
- RC RECOMPLETED
- DRY HOLE
- UNIT BOUNDARY

S & J OPERATING COMPANY

DENTON NORTH WOLFCAMP UNIT

LEA COUNTY, NEW MEXICO

ONE HALF MILE RADIUS REVIEW AREA

FOR PROPOSED WATER INJECTION WELLS

— SCALE —

0' 1000'

PETROLEUM ENGINEERS
STEPHENS ENGINEERING
WICHITA FALLS, TEXAS

API Nbr: 30025051790000 State: NMEX County: LEA
Meridian: NEW MEXICO Meridn Code: 21
Province: Prov Code:
Oper: ATLANTIC RICHFIELD Oper Code: 002905
Prev. Oper: ATLANTIC REFINING CO.
Prev. Oper: LOWE, RALPH-ATLANTIC
Lease: DICKINSON D Well: 5 Lease Code:
Field: DENTON Field Code: 024725

T014 S R037 E SEC35 Spot:
TWP NM:
Footages: 660FN 1980FW CNGRS T-R-SEC /FULL SEC
City Code: Sub Div: Blk/Lot:

Oper Elev: 3820GR RIG HT: Log Td:
Form@TD:

Other Depths: DRLR 12475 WSTD PBTD OLDTD

Status: OIL Spud Date: 11 04 1952
Hole Dir: VERTICAL Comp Date: 03 01 1953
Numeric Class: INL-6 FNL-1
Alpha Class: INL-D FNL-DO
Prod Form:

Latitude: 33.06622 Source: USGS NAD27 Longitude: 103.17262

CASING:
13 3/8 @ 336 W/ 400SX
8 5/8 @ 4730 W/ 1700SX

LINER: 5 1/2" 4470-12178 W/ 1000

Contr: Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

FORMATION TOPS: (Source,Names,Depths,Shows)

SPL
453SADR 4670 453GLRT 6070 452ABO 7920
451WFMP 9190 359MSSP 10880 359MPLM 11330
319WDFD 12020 309DVNN 12160

CORE DESCRIPTIONS:

FORMATION TESTS:

DST 01 9130-9320
GAS TS IN 50M AT
REC 310FT O&GCM 8120FT O
FINAL OP: 1H30M IFP: 500 FFP: 2910 BHT: F
ISIP: FSIP: 3450 15M IHP: FHP:
TCK: 064/64 BCK: 040/64 TL D "

PRODUCTION TESTS:
PTF 48B CUT % /64CK 001HRS
OPENHOLE / 12178-12475

PTF 396B CUT % 15/64CK 024HRS
OPENHOLE / 12178-12475
TP: 1000 CP: SITP: SICP: CAOF: MCFD
BHP: @ FT BHT: F TUBING SIZE: 2" @11990FT REF DATUM
GTY: 44.5 GOR: 725 COND: B/MMCF
FIELD: DENTON DEVONIAN PROD ZN CODE: OPER KEY: 1

LOG SURVEYS:

EL

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

API Nbr: 30025098660000 State: NMEX County: LEA
Meridian: NEW MEXICO Meridn Code: 21
Province: Prov Code:
Oper: SHELL OIL Oper Code: 078505
Lease: PRIEST Well: 5 Lease Code:
Field: DENTON Field Code: 024725

T015 S R037 E SEC1 Spot:
TWP NM:
Footages: 660FN 1980FW CNGRS T-R-SEC /FULL SEC
City Code: Sub Div: Blk/Lot:

Oper Elev: 3806DF RIG HT: Log Td:
Form@TD:

Other Depths: DRLR 9485 WSTD PBTD OLDTD

Status: OIL Spud Date: 01 24 1953
Hole Dir: VERTICAL Comp Date: 10 07 1953
Numeric Class: INL-6 FNL-1
Alpha Class: INL-D FNL-DO
Prod Form:

Latitude: 33.05171 Source: USGS NAD27 Longitude: 103.15537

CASING:
13 3/8 @ 355 W/ 350SX
8 5/8 @ 4800 W/ 1700SX
5 1/2 @ 9450 W/ SX

INITIAL POTENTIAL TESTS:

IPS	44B PD		CUT %	/64CK	024HRS
	PERF		/	9168-9380	
PERF	9168-9180 A	9200-9220 A	9294-9320	A9365-9380 A	
CLAG	9168-9380	500 GALS A	FBRKP:		
ACID	9168-9380	2000 GALS A	FBRKP:		
ACID	9168-9380	5000 GALS A	FBRKP:		
IPP	88B PD		CUT 1%	/64CK	024HRS
	PERF		/	9168-9380	
ACID	9168-9380	18000 GALS A	FBRKP:		
ACID	9168-9380	5000 GALS A	FBRKP:		
ACID	9168-9380	7000 GALS A	FBRKP:		

GTY: 43.9 GOR: 253 COND: B/MMCF
FIELD: DENTON WOLFCAMP PROD ZN CODE: OPER KEY: 1

FORMATION TOPS: (Source,Names,Depths,Shows)

LOG
452YESO 6255 452DRKD 7390 452ABO 8068
451WFMP 9245

CORE DESCRIPTIONS:

FORMATION TESTS:

DST 01 9160-9485 PKRFLR

DST 02 9140-9485 PKRFLR

DST 03 9110-9485 PKRFLR

PRODUCTION TESTS:

PTS	54B		CUT 5%	/64CK	016HRS
	PERF		/	9168-9380	
ACID	9168-9380	500 GALS A	FBRKP:		
ACID	9168-9380	5000 GALS A	FBRKP:		
PTS	47B		CUT %	/64CK	024HRS
	PERF		/	9168-9380	

LOG SURVEYS:

EL NE

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

MAGNOLIA PETROLEUM COMPANY

DRILLING MUD HISTORY

X-6457

Lease and Well No: T. D. Pope No. 3 Owner of Tools: Helmerich and Payne

Field: Denton District: Kermit Division: West Texas

Location: Sec. 27, T-14-S, R-37-E County or Parish: Lea State: New Mexico

Date Spudded: 12-4-52 Date Completed: 4-23-53 Date of Report: 9-1-53

Total Depth Drilled: 12628 Perforated with ____ holes ____ in. dia. from 12218 to 12628

Initial Production Test on 4-23, 19 53, made 499 thru 18/64 in. choke.

Initial Static BHP: 4483 P S I G on 4-29-53

CASING AND CEMENT RECORD

STRING OF PIPE	SIZE	DEPTH SET	SIZE HOLE	DEPTH HOLE	NO. SKS CEMENT	TOP CEMENT CALCULATED	TOP CEMENT TEMP. SURVEY	MAX DEVIATION FOR INTERVAL	SIZE DRILL PIPE	NO. TRIPS
SURFACE	13-3/8	450	17-1/2	450	425	Circ. - 15 sx.				
Intermediate	9-5/8	4805	12-1/4 & 11	4805	3600	"	540	1°		
Production	5-1/2	4610-12628	7-7/8	12628	600	"	8790	3-3/4°		

DRILL STEM TESTS

INTERVAL OF DEPTH FROM	TO	DURATION OF TEST	SIZE DRILL PIPE
9160	9212	1:30	
9212	9262	1:00	
10355	10387	1:00	
12208	12290	2:00	
12290	12383	2:00	

MUD HISTORY

Treatment Started at 4800 and 9014 Type of Mud S & F Wtg; F.W. Mud & F.W. Oil Emulsion Mud

Drilling Mud Characteristics	Depths -1000									
	4.8		9.3		10.4	11.4	12.3		12.6	
Weight, Lbs. per Gallon	10.1		8.8		8.6	8.6	8.7		8.7	
Pressure, PSI per 100 ft. of Depth	52.5		45.7		44.7	44.7	45.25		45.25	
Pressure, PSI at Bottom Depth Shown	2520		4250		4649	5096	5566		5702	
Funnel Vis., sec. (1500 cc. in-Qt. out)	40		48		52	67	68		83	
Stormer Vis., cp.										
Stormer Initial Gel, Gms.										
Stormer 10 min. Gel, Gms.										
Filtrate ___ min. @ 100 PSI, cc.	25		14.9		9.2	6.5	8.0		8	
Filtrate 30 min. @ 100 PSI, cc.										
Cake Thickness, 32nds of an inch										
Temp. at Sampling Point, °F										
pH Mud										
pH Filtrate										
pH Method										
Sand Content, % by Vol.										
Salt Content, PPM										
Filtrate Analysis:										
PPM OH										
PPM CO_3										
PPM HCO_3										
PPM										

Mud Materials and Chemicals	Pounds Added During Interval Shown Above	Total Pounds	Price Per Pound	Total Cost
Weighting (Magcobar)		15,000		292
Bentonite (Magcogel)		191,000		4070
Total Mud Materials		206,000		4362
Tannin (Quebracho)		8,500		1230
Caustic Soda		7,000		483
Soda Ash		8,000		312
Salt		40,000		460
Lost Circulation Material				2812
Driscose		200		160
Lime		300		5
Starch		7,500		1163
Bi-Carb. of Soda				58
Drayage and Tax				952
Total Chemicals		71,500		7635
Total Mud and Chemicals		277,500		11997
Total Cost of Mud and Chemicals / Foot				0.95

Estimated Total Cost of Mud and Chemical (from form X6379): ____ Difference: ____

(Explain on back)

(11-51)

MAGNOLIA PETROLEUM COMPANY

WELL RECORD

X-1316

Total Depth Drilled 12,628
Oil String Set * 12,628
Plug Back Depth
Vertical or Directional Hole: Vertical

Permit No.
Serial No.

Lease Name T. D. Pope
Well No. 3
Field (North Denton)
District Lea

Parish/County Lea State New Mexico State Reg. District 1

Block/Section 35 Lot/Township 14-S Unit/Range 37-E Distance From Nearest Town

Location of Well: 660' from South Line, 660' from East Line, SE¼ of the SE¼, Lea County, New Mexico.

DATE SUMMARY	Date	Work Performed By	Remarks
Location Staked	11-7-52	Midland Engineer's	
* Cellar, Grade and Road	11-8-52	Montgomery & Knight	Midland, Texas
Commenced Erecting Derrick	11-22-52	Helmerich & Payne	Drilling Contractor
Completed Erecting Derrick	11-25-52	" "	" "
Commenced Rigging Up	11-29-52	" "	" "
Initial Rigging Up Completed	12-4-52	" "	" "
Commenced Drilling (Spud Date)	12-4-52	" "	" "
Completed Drilling (Total Depth)	4-1-53	" "	" "
Moved In Cable Tools			
Oil String Casing Set	4-25-53	Halliburton Oil Well Cementing Co.	Duncan, Oklahoma.
Plug Back (Final)			
Perforations (Final)	4-21-53	Helmerich & Payne	Drilling Contractor
Completed Subsurface Installations (Final)	4-21-53	" "	" "
Completed Well Head Installations (Final)	4-21-53	" "	" "
Commenced Bringing in (Final)	4-21-53	" "	" "
Well Cleaned (Final)	4-21-53	" "	" "
Commenced Abandonment			
Completed Abandonment			

* Insert the first work started, as; Build Road, Build Board Road and Turn around, Dig Canal, Clear and/or Grade Location, Lay fuel and Water Lines, Dig Slush Pit, Build Rig Foundation, or, Install Drilling Foundation.

NO. DAYS WATER USED 141 : SOURCE Contractor (Water Well).
NO. DAYS FUEL USED 141 : KIND Lease Gas : SOURCE T. D. Pope #1.

Measuring Point Will Be Kelly Drive Bushing 3999, 3018, Ground Elevation 3801' Kelly Bushing To Gr. Elev. 14' Kelly Bushing to Surface Csg. Flg. 14' Surface Csg. Flange Elev. 3801'

Transfer No. In: 3346 & 3347 CASING, TUBING, & * CEMENTING RECORD Transfer No. Out

Size	Weight	Collars & Threads	Grade	Jts.	Total Feet Less Threads: Put In	Pulled	Left In	Total No. Scratchers and Where Placed	Total No. Centralizers and Where Placed
13-3/8"	35.63#	Weld	[illegible]	2					
13-3/8"	48#	[illegible]	[illegible]	1	450			17¼" hole. Set 12-5-52.	

Landed @ 450' w/425 sks. neat cement, circulated, no additives, single stage cement. W.O.C. 24 hrs. Tested w/500# 30 min. before & after drlg. plug. No break.

Size	Weight	Collars & Threads	Grade	Jts.	Put In	Pulled	Left In	Where Placed	
8-5/8"	32#	8RT	J-55	3	113	4805		11" hole. Set 12-19-52.	

Landed @ 4805' w/2000 sks. 6% Gel., 200 sks. neat, no circulation. W.O.C. 10 hrs. Tested w/1000# 30 min. before & after drlg. plug. No break.

Size	Weight	Collars & Threads	Grade	Jts.	Put In	Pulled	Left In	Where Placed	
5½"	17#	8RT	STMO	2	104				
5½"	17#	8RT	N-80	2	74				
5½"	20#	8RT	N-80	2	72	8018		7-7/8" hole. Set 4-2-53.	

Landed @ 12,628', top @ 4610' w/500 sks. 4% Gel., 100 sks. neat, W.O.C. 12 hrs. Squeeze top of liner @ 4610' w/250 sks. w/3000#, circulated 10 sks. W.O.C. 36 hrs. Tested top of liner @ 4610' w/2000# 30 min. No break.

Size	Weight	Collars & Threads	Grade	Jts.	Put In	Pulled	Left In	Where Placed	
2"	4.7#	8RT	N-80	2	409	12626			

* Following each string of casing, and using the full width of the sheet, give complete cementing record as follows: Where landed, Amount and kind of cement, Amount and kind of Additives, Stages of Cementing, Cement Tops, Slurry weight per Gal. and WOC Hours.

Give the balance of Well Record by Sections, in the order listed below, carefully following instructions in the Field Manual for each section. Use the reverse side of this sheet and subsequent sheets on Form X-6727 As needed.

Section 1- Production Tests and Potential Tes. Data
Section 2- Formation Summary
Section 3- Depth Measurements
Section 4- Drill Stem Tests
Section 5- Perforating and Squeeze Record
Section 6- Surveys Performed
Section 7- Core Record
Section 8- Bit Record
Section 9- Acidizing or Other Completion Operation
Section 10- Summary of Operations
Section 11- Formation Record
Section 12- Plugging & Abandonment Record

ILLEGIBLE

MAGNOLIA PETROLEUM COMPANY
WELL RECORD

SECTION NO. 1 - PRODUCTION TESTS AND POTENTIAL TEST DATA:

Potential test completed on 4-22-53 in the Dolomite formation, Devonian zone: Top 12,180', bottom 12,628'; perforated with Jet shots, 4 SPF: 12218 - 12234, 12244 - 12256, 12264 - 12276, 12307 - 12347, 12379 - 12433, 12451 - 12496, and 12553 - 12628. Well flowed on 24 hr. test. Rate per day: 498.70 bbls. oil & no water. Gas 413 MCF. G.O.R. 830/1. Choke Size: 18/64". Tubing Pressure: 550 - 750#. CP: 0 - 150#. A.P.I. Gravity: 45.2 deg. Allow: 256 bbls. per day. Service Pipe Line Co. will run the oil.

SECTION NO. 2 - FORMATION SUMMARY:

Formation	TO	D.S.T. NO.	GR-N LOG RUN	ELECTRIC LOG RUN	DESCRIPTIVE REMARKS
Anhydrite	2124				
Yates	3138				
San Andres	4620				
Glorieta	6208			1	
Tubbs	7330			1	
Abo	8013			1	
Permo Penn.	9190	1,2,&3		1	Lost circulation @ 10381'. Regained circ. in 12 hrs.
Miss.	11353			1	
Woodford	12070		1	1	
Devonian	12180	4 & 5	1	1	Producing Formation.

SECTION NO. 3 - DEPTH MEASUREMENTS

	DRILLERS DEPTH	GR-N.LOG &ELEC.LOG	KELLY BUSHING TO FLANGE	SURFACE FLANGE DEPTH
Surface String Set	450		14'	436
8-5/8" cdg. set at	4805	@ 4805	14'	4791
Total Depth	12628	@12630	14'	12616
Liner Set	12628	@12630	14'	12616
Top Of Liner	4610		14'	4596
Perforations	12218 - 12234	@12220 - 12236	14'	12206 - 12222
	12244 - 12256	@12246 - 12258	14'	12232 - 12244
	12264 - 12276	@12266 - 12278	14'	12252 - 12264
	12307 - 12347	@12309 - 12349	14'	12295 - 12335
	12379 - 12433	@12381 - 12435	14'	12367 - 12421
	12451 - 12496	@12453 - 12498	14'	12439 - 12484
	12553 - 12628	@12555 - 12630	14'	12541 - 12616

SECTION NO. 4 - DRILL STEM TESTS:

No.	Date	From	To	Kind of Hole	Tool Set @	Chokes Top	Chokes Bottom	Water Cushion	Time Tested
1.	1-23-53	9160	9212	Open Hole	9212	1"	5/8"	None	1½ hrs. (Permo

Used 2 packers, gas to surface 9 min. too small to measure. Rec. 8650' free oil. Grav. Penn) 38.7 @ 60 deg. Rev. recovery. SFP: Zero. BHFP: 515 - 2675#. Closed 15 min. HH 4150 - 4120.

2.	1-24-53	9212	9262	Open Hole	9262	1"	5/8"	None	1 Hr.

Used 2 packers, DTS, rec. 5' drlg. mud w/no show. SFP: 0. Closed 15 min. SIP: 0. HH: 4300 in and out. (Permo Penn).

3.	2-15-53	10355	10387	Open Hole	10387	1"	5/8"	None	1 Hr.

Used 2 pkrs., DTS, rec. 7690' sulphur & 90' drlg. mud. SFP: 0, BHFP: 3975#. Closed 15 min. SIP: 4020#. HH: 4595 in - 4485# out. (Permo Penn).

4.	3-25-53	12208	12290	Open Hole	12290	1"	5/8"	None	2 Hrs. (Dev.)

Used 2 pkrs., gas in 8 min. 21 MCF/day. No fluid to surface. Rec. 270' free oil. Grav. 45.5 630' oil cut drlg. mud. SFP: 0, BHFP: 130 - 265#. Closed 15 min. SIP: 1160#. HH: 5360-5390.

5.	3-29-53	12290	12386	Open Hole	12386	1"	5/8"	None	2 Hrs.

Used 2 pkrs., Gas to surface 8 min., 23.5 MCF/day. Rec. 210' OCDM plus 1500' free oil. Grav. 45.2 SFP: 0. BHFP: 750 - 550#. Closed 15 min. SIP: 2550#. HH: 5850# in & out. (Devonian).