Warnell, Terry G, EMNRD

From: Joshua_Leatherwood@oxy.com
Sent: Tuesday, November 29, 2011 1:28 PM
To: Warnell, Terry G, EMNRD
Subject: Warren McKee Unit 1 SWD- Packer depth
Attachments: WMUSWD1.xlsx; WMU1IHS.pdf; img-Y29112955-0001.pdf

Mr. Warnell, As we spoke on the phone earlier, we have been performing remedial work on the subject well to achieve a acceptable MIT. While investigating the cause of the failed previous MIT, we found multiple sections of poor casing in both the 5-1/2" partial liner and the 8-5/8" long string. With a history of several repaired casing leaks, we decided the best way to repair the well to achieve a acceptable MIT would be to run a 5-1/2" tie-back liner from the existing 5-1/2" partial liner top (3670') to surface and cement it in place. We have run the 5-1/2" tie-back liner and cemented it with 560 sacks of Class C cement, which was circulated to surface. The next step in the repair is to set Weatherford Solid Expandable Liner from 4200' to 3600', however during our investigating we ran a caliper log that showed almost no casing from 4200' (original liner shoe) to 4100'. With poor, or no, casing at 4200' we need to move the bottom of the Solid Expandable Liner up to 4100'. By setting the Solid Expandable Liner at 4100' we would then set the injection packer at ~4085'. The approved injection interval is from 4200' to 4550'. By setting the packer at 4085' we would then be outside the NMOCD rule of 100' above the permitted interval. The previously approved packer depth for this well was 3990' (2004 under Amerada Hess). Oxy has pulled the packer since 2004 for a previous failed MIT (2009), where the packer was re-set at 3972' after repairing, however, I do not see any record of this in the NMOCD files. I believe our current permit interval is 4200' (end of 5-1/2" liner) to 4550' (open hole from 4200'-4550'). Based on public records from the original completion the San Andres top is 4164', which is our current disposal zone. The top of the Grayburg is 3864' and the top of Glorieta is 5330'.

order

With all of this, it seems that if we set the packer at ~4085' we will be within 100' of the disposal formation top. I would like to ask permission to set the injection packer at ~4085'.

Attached is a spreadsheet with tabs showing previous, current, and proposed well bore diagrams. I have also attached .pdf files reflecting the formation tops and a few more pieces of information.

30-025-07743

I appreciate your time in reviewing this request.

If you have any follow up questions please give me a call or reply to this email.

Thanks,

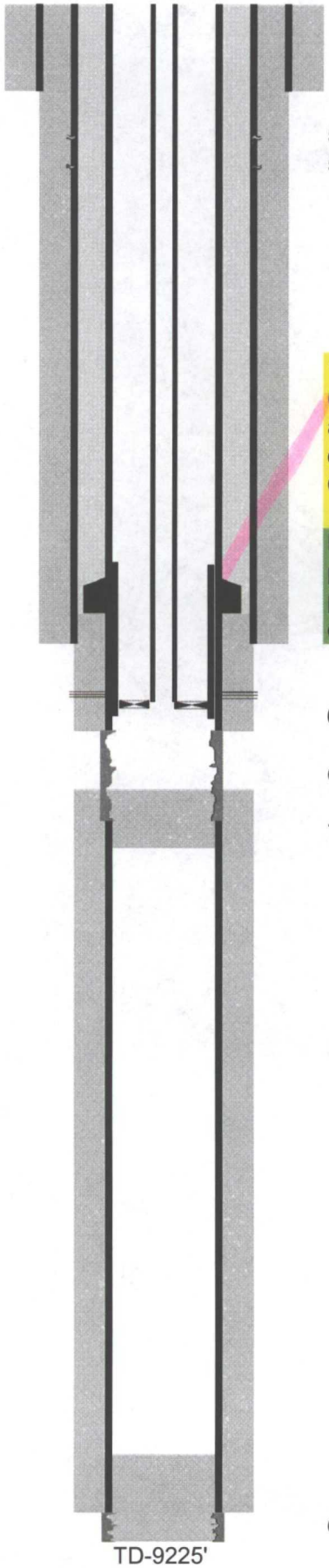
Josh Leatherwood
Oxy Permian
Production Engineer-WST
Office: 432-685-5765
Cell: 432-631-2849

Monday

432-~~687~~ 631-2849; 8:00 Tue AM.

All applications §

OXY USA WTP LP
Warren McKee Unit #1SWD
API No. 30-025-07743



17-1/2" hole @ 330'
13-3/8" csg @ 330'
w/350sx-TOC-Surf-Circ

5/04-Csg Lk @ 514-546' sqz w/70sx
5/92-Csg Lk @ 690-719' sqz w/150sx

11" hole @ 3728'
8-5/8" csg @ 3728'
w/3093sx-TOC-Surf-Circ

11/15/11- Ran 5-1/2" 15.5 and 17 #/ft J-55 casing (surface to 3670'). Used casing alignment tool and DV tool to sting into original liner and cement. Cemented new liner with 560 sx Class C, circulated to surface.

Plan- Set Weatherfor Solid Expandable Casing patch from 3500'-4100'. Then set injection packer at ~4085'. Injection tubing will be combination 2-7/8" and 2-2/8".

6/56-5-1/2" liner @ 3670-4200'
w/ 200sx-TOC-3670'-Circ

PKR @ 3990'

6/56-Perfs @ 4010-4060' sqz w/ 150sx

OH @ 4200-4550'

7/53-50sx @ 4675-4550'

7/53-Cut & Pull 5-1/2csg @ 4663'

7-7/8" hole @ 9225'
5-1/2" csg @ 4663-9181'
w/500sx-TOC-4663'-Calc

7/53-25sx @ 9225-9000'

OH @ 9182-9225'

TD-9225'

Scout Ticket

The Source for Critical Information and Insight

Tue Nov 29, 2011

30025077430000

General Information

4 BYERS

Data Source:	PI		
API:	30025077430000	**IC:**	
State:	NEW MEXICO	**County:**	LEA
Field:	SKAGGS	**Operator:**	CITIES SERV OIL CO
Initial Class:	DEVELOPMENT WELL (D)	**Final Well Class:**	DEVELOPMENT WELL-DRY (INCLUDING TEMPORARILY ABANDONED WELL) (D)
Status:	D&A	**Target Objective:**	
Permit:	on Apr 16, 1953	**Hole Direction:**	VERTICAL
First Report Date:	Aug 15, 1973	**Abandonment Date:**	
Projected TD:		**Projected Formation:**	UNKNOWN
Geologic Province:	PERMIAN BASIN	**Formation at TD:**	MCKEE /SD/

Location

Section, Twp., Range:	7 20S 38E			**Data Source:**	PI
Spot Code:					
Footage NS EW Origin:	2310 FNL 2970 FEL CONGRESS SECTION				
Principal Meridian:	NEW MEXICO				
Lat/Long:	+32.5884900 -103.1884100	**Lat/Long Source:**	TS	**Datum:**	NAD27

Dates and Depths

Data Source:	PI		
Spud:	Apr 26, 1953	**Spud Date Code:**	
TD:	9,225 FT	**TD Date:**	
TVD:		**PlugBack Depth:**	
Formation Code TD:	202MCKE	**Formation Name TD:**	MCKEE /SD/
Ref. Elevation:	3,577 FT DF	**KB. Elevation:**	
Ground Elevation:		**LTD:**	
Contractor:			
Completed:	Jul 13, 1953	**Final Drilling:**	
Rig Release Date:		**Rig #:**	
Tool:	ROTARY		

Production Tests

PT: 001

Data Source:	PI		
Top Formation Name:		**Top Formation Code:**	
Base Formation Name:		**Base Formation Code:**	
Oil:	20 BBL	**Condensate:**	
Gas:		**Water:**	102 BBL
Interval:	9,181 - 9,225	**Method:**	SWABBING
Duration of Test:	21 Hours	**Choke:**	
Oil Gravity:		**GOR:**	
Cond Gravity:		**Cond Ratio:**	
Prod Method:	OPENHOLE	**Main Fluid Code:**	W

PT: 002

Data Source:	PI		
Top Formation Name:		**Top Formation Code:**	

Base Formation Name:		**Base Formation Code:**	
Oil:	10 BBL	**Condensate:**	
Gas:		**Water:**	135 BBL
Interval:	9,181 - 9,225	**Method:**	SWABBING
Duration of Test:	24 Hours	**Choke:**	
Oil Gravity:		**GOR:**	
Cond Gravity:		**Cond Ratio:**	
Prod Method:	OPENHOLE	**Main Fluid Code:**	W

PT: 003

Data Source:	PI		
Top Formation Name:		**Top Formation Code:**	
Base Formation Name:		**Base Formation Code:**	
Oil:	3 BBL	**Condensate:**	
Gas:		**Water:**	42 BBL
Interval:	9,181 - 9,225	**Method:**	SWABBING
Duration of Test:	9 Hours	**Choke:**	
Oil Gravity:		**GOR:**	
Cond Gravity:		**Cond Ratio:**	
Prod Method:	OPENHOLE	**Main Fluid Code:**	W

Perforations

Test	Data Source	Interval	Count	Type	Status	Shots/ Ft	Prod Method	Top Form Code	Top Form Name
001	PI	9181 - 9225					OPENHOLE		
002	PI	9181 - 9225					OPENHOLE		
003	PI	9181 - 9225					OPENHOLE		

Treatments

Treatment: 001

Interval:	9,181 - 9,215		
Fluid:	1,500 GAL	FRAC	**Type:** UNKNOWN
Additive:			
Prop Agent:		**Amount:**	
Form. Break Down Pressure:			
Average Injection Rate:		**Instant Shut-in Pressure:**	
Stages:	**Remarks:**	FRAC:ORIG TREATMENT CD	

Field Data

Test: 003	Data Source: PI	Discovery Well: N	Curr Operator:	Lease:
Top Pay:	Sub Horizon:	Field Code: 03082692A	Field Name: SKAGGS GRAYBURG	

Cores

CORE ID: 001

Formation:		**Data Source:**	PI
Interval:	9215-9225	**Rec:**	7.5 FT
Core Type:	CONV	**Show Type:**	
Description:	PB: LITH CODE = SLSD PB: LITH CODE = SD		

Casing, Liner, Tubing

Casing	Data Source	Size	Base Depth		Cement	
CASING	PI	13 3/8 IN	330	FT	350	SACK
CASING	PI	8 5/8 IN	3,728	FT	3,093	SACK
CASING	PI	5 1/2 IN	9,181	FT	500	SACK

Drilling Journal

Mud Records

Data Source	Depth	Unit	Weight	Unit
PI	9,212	FT	8.7	PPG

Drilling Problems

Problem	Data Source	Date	Remark
201	PI		PULLED 5-32 CASING

Formations

Form Code	Data Source	Form Name	Top Depth	Top TVD	Base Depth	Base TVD	Source	Lithology	Age Code
453SADRD	PI	SAN ANDRES D	4,164				LOG		453
453GLRT	PI	GLORIETA	5,330				LOG		453
452TUBBS	PI	TUBB /SD/	6,380				LOG		452
452ABO	PI	ABO /SH/	7,030				LOG		452
309DVNN	PI	DEVONIAN	8,104				LOG		309
203MNTY	PI	MONTOYA	8,597				LOG		203
202SMPS	PI	SIMPSON	8,894				LOG		202
202MCKE	PI	MCKEE /SD/	9,184				LOG		202

Logs

Log	Data Source	Type	Top Depth	Base Depth	Logging Co.	BHT	since circ.
1	PI	EL					

Dwights Energydata Narrative

Accumulated through 1997

30025077430001

General Information

WS1 WARREN MCKEE UNIT

Data Source:	PI		
API:	30025077430001	**IC:**	
State:	NEW MEXICO	**County:**	LEA
Field:	SKAGGS	**Operator:**	AMERADA HESS CORP
Initial Class:	DEVELOPMENT RECOMPLETION (D X)	**Final Well Class:**	DEVELOPMENT WELL-OIL (DO)
Status:	OIL-WO	**Target Objective:**	
Permit:	on Aug 15, 1973	**Hole Direction:**	VERTICAL
First Report Date:	Aug 15, 1973	**Abandonment Date:**	
Projected TD:		**Projected Formation:**	
Geologic Province:	PERMIAN BASIN	**Formation at TD:**	MCKEE /SD/

IP Summary:

Oil: 40 BPD **Gas:** **Water:** **Top Form:**

Location

Section, Twp., Range:	7 20S 38E			**Data Source:**	PI
Spot Code:					
Footage NS EW Origin:	2310 FNL 2970 FEL CONGRESS SECTION				
Principal Meridian:	NEW MEXICO				
Lat/Long:	+32.5884900 -103.1884100	**Lat/Long Source:**	TS	**Datum:**	NAD27

Dates and Depths

Data Source:	PI		
Spud:	Jul 03, 1956	**Spud Date Code:**	
TD:	9,225 FT	**TD Date:**	
TVD:		**PlugBack Depth:**	4,212 FT
Formation Code TD:	202MCKE	**Formation Name TD:**	MCKEE /SD/
Ref. Elevation:	3,577 FT DF	**KB. Elevation:**	
Ground Elevation:		**LTD:**	
Contractor:			
Completed:	Jul 23, 1956	**Final Drilling:**	
Rig Release Date:		**Rig #:**	
Tool:			

Initial Potential Tests

IP: 001 **Data Source: PI**

Top Formation Name:		**Top Formation Code:**	
Base Formation Name:		**Base Formation Code:**	
Oil:	40 BPD	**Condensate:**	
Gas:		**Water:**	
Interval:	4,010 - 4,060	**Method:**	PUMPING
Duration of Test:	24 Hours	**Choke:**	
Oil Gravity:	38.1 API	**GOR:**	
Cond Gravity:		**Cond Ratio:**	

Perforations

Test	Data Source	Interval	Count	Type	Status	Shots/ Ft	Prod Method	Top Form Code	Top Form Name
001	PI	4010 - 4060			A		PERF		

Treatments

Treatment: 001

Interval:	4,010 - 4,060			
Fluid:	10,000 GAL	FRAC	**Type:**	FRAC
Additive:				
Prop Agent:	SAND	**Amount:**		
Form Break Down Pressure:				
Average Injection Rate:		**Instant Shut-in Pressure:**		
Stages:	**Remarks:**	FRAC:ORIG TREATMENT CD		

Field Data

Test: 001	Data Source: PI	Discovery Well: N	Curr. Operator: T	Lease:
Top Pay: 4,010 FT	Sub Horizon:	Field Code: 03082692A	Field Name: SKAGGS GRAYBURG	

Casing, Liner, Tubing

Liner	Data Source	Size	Top Depth	Base Depth	Cement	Type
LINER	PI	5 1/2 IN	3,720 FT	4,212 FT	150 SACK	

Dwights Energydata Narrative

Accumulated through 1997

Old Information

Prior Well Number: 1	3	**Data Source:**	PI
Prior Lease: 1	BYERS A	**Data Source:**	PI
Spud Date:	Jul 03, 1956	**Data Source:**	PI
Old TD:	9,225 FT	**Data Source:**	PI
Prior Operator: 1	DEKALB AGRICUTURAL	**Data Source:**	PI

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
March 4, 2004

WELL API NO. 30-025-07743
5. Indicate Type of Lease STATE ☐ FEE ☒
6. 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.)

7. Lease Name or Unit Agreement Name: Warren McKee Unit
1. Type of Well: Oil Well ☐ Gas Well ☒ Other SWD Well
8. Well Number: SWD #1
2. Name of Operator: Amerada Hess Corporation
9. OGRID Number: 000495
3. Address of Operator: P.O. Box 840, Seminole, Texas 79360
10. Pool name or Wildcat: SWD San Andres
4. Well Location
Unit Letter F : 2310 feet from the North line and 2310 feet from the West line
Section 7 Township 20S Range 38E NMPM County Lea
11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*

Pit or Below-grade Tank Application (For pit or below-grade tank closures, a form C-144 must be attached)
Pit Location: UL____ Sect____ Twp____ Rng____ Pit type____ Depth to Groundwater____ Distance from nearest fresh water well____
Distance from nearest surface water____ Below-grade Tank Location UL____ Sect____ Twp____ Rng____ ;
____ feet from the ____ line and ____ feet from the ____ line

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPLETION ☐	CASING TEST AND CEMENT JOB ☐	
OTHER: ☐		OTHER: Repair casing leak	☒

13. 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. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

4/27/2004 thru 5/23/2004
MIRU Tyler Well Svc, installed 6" 900 BOP. TOH w/tbg. Set RBP @ 4030' & test to 1000 psi., circ. clean. Set pkr @ 7706' & test 5 1/2" liner to 600 psi, okay. Located csg leak between 514' & 546'. RU Halliburton, circ. clean. Spot 70 sks premium plus cmt from 565' to TOC @ 268'. TOH w/tbg & squeezed leak between 514' & 546' w/53 sks cement leaving 50' cmt above top of leak. Spot 70 sks premium plus w/2% calcium chloride & sqz'd addt'l 53 sks into leak. WOC. Drilled out soft cmt to 589'. see attached....

RECEIVED Hobbs

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Carol J Moore TITLE Senior Advisor, Regulatory DATE 5/26/2004

Type or print name Carol J. Moore E-mail address: cmoore@hess.com Telephone No. (432)758-6738

(This space for State use)

APPPROVED BY Gary W. Wink TITLE OC FIELD REPRESENTATIVE II/STAFF MANAGER DATE JUN 08 2004

Conditions of approval, if any:

Form C-103 Attachment

Amerada Hess Corporation
OGRID 000495
Warren McKee Unit SWD No. 1
API 30-025-07743

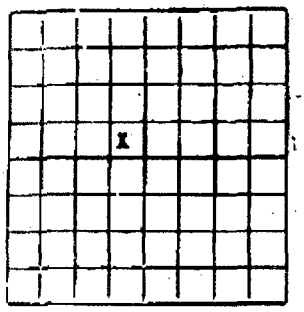
4/27/04 thru 5/23/04 cont'd...

Removed BOP & installed wellhead flange. Pressure tested tbg w/480 psi. Okay. Removed wellhead flange & installed 6" x 900 BOP. Tagged in 5 ½" csg @ 4005'. RBP @ 4030'. TOH w/tbg & RBP. TIH w/Kut-rite shoe, wash pipe, bumper sub on tbg. Washed scale & cement from 4083'-4097'. Drilled on Model D pkr from 4097' to 4099', fell out @ 4101', circ. clean. TOH w/eqpt. TIH w/bit, cleaned out fill from 4154'-4538', circ. clean. RU BJ Svs & acidized w/4500 gals of NEFE HCL 15% acid. RD BJ. TIH w/pkr set @ 3990'. Removed BOP & tested csg to 480 psi. NMOCD was notified but did not witness. RDPU & cleaned location. Well disposing water.

Chart attached.

START
96 MIN
8 MIN
16 MIN
24 MIN
32 MIN
40 MIN
48 MIN
56 MIN
64 MIN
72 MIN
80 MIN
88 MIN
CALIBRATED CHARTS
MI-PO-1000-8-96MIN

Obsolete 9/1/52
(Form C-105)



AREA 640 ACRES
LOCATE WELL CORRECTLY

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

WELL RECORD

Mail to District Office, Oil Conservation Commission, to which Form C-101 was sent not later than twenty days after completion of well. Follow instructions in Rules and Regulations of the Commission. Submit in QUINTUPLICATE. If State Land submit 6 Copies

DEKALB AGRICULTURAL ASSN., INC. (Company or Operator) BYERS "A" (Lease)

Well No. 3, in SE ¼ of NW ¼, of Sec. 7, T. 20-S, R. 38-E, NMPM.

Skaggs Pool, Lea County.

Well is 1650 feet from North line and 2331.1 feet from West line of Section 7. If State Land the Oil and Gas Lease No. is Not

Cleaned Out

Drilling Commenced June 30, 1956, 19 56 Drilling was Completed July 8, 19 56

Name of Drilling Contractor Western Drilling Company, Inc.

Address 906 Lubbock National Building, Lubbock, Texas

Elevation above sea level at Top of Tubing Head 3577 The information given is to be kept confidential until Not, 19

OIL SANDS OR ZONES

No. 1, from 4010 to 4060 No. 4, from to

No. 2, from to No. 5, from to

No. 3, from to No. 6, from to

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from 220 to 290 feet.

No. 2, from to feet.

No. 3, from to feet.

No. 4, from to feet.

CASING RECORD

SIZE	WEIGHT PER FOOT	NEW OR USED	AMOUNT	KIND OF SHOE	CUT AND PULLED FROM	PERFORATIONS	PURPOSE
13-3/8"	50	New	330	Baker - Circulated			Surface
8-5/8"	32	New	3728	Baker			Intermediate
5-1/2" Liner	14#	New	530	Baker		4010-4060	Oil String

MUDDING AND CEMENTING RECORD

SIZE OF HOLE	SIZE OF CASING	WHERE SET	NO. SACKS OF CEMENT	METHOD USED	MUD GRAVITY	AMOUNT OF MUD USED
16"	13-3/8"	330	350	Halliburton Pump		
12"	8-5/8"	3728	3093	Halliburton Pump		
7-7/8"	5-1/2"	4200Soak to 330	200	Halliburton Pump		

RECORD OF PRODUCTION AND STIMULATION

(Record the Process used, No. of Qts. or Gals. used, interval treated or shot.)

Dolofrac with 10,000 Gallons, 10,000# Sand

Result of Production Stimulation Swabbing, recovered load, swab 3 to 4 bbls per hour.

Depth Cleaned Out 4207

RECORD OF DRILL-STEM AND SPECIAL TESTS

If drill-stem or other special tests or deviation surveys were made, submit report on separate sheet and attach hereto

No Electric Log run

TOOLS USED

Rotary tools were used from -0- feet to 4207 feet, and from ... feet to ... feet.

Cable tools were used from -- feet to -- feet, and from ... feet to ... feet.

PRODUCTION

Put to Producing July 23, 1956

OIL WELL: The production during the first 24 hours was 59 barrels of liquid of which 80 % was was oil; ... % was emulsion; 20 % water, and ... % was sediment. A.P.I. Gravity 38.1

GAS WELL: The production during the first 24 hours was ... M.C.F. plus ... barrels of liquid Hydrocarbon. Shut in Pressure ... lbs.

Length of Time Shut in ...

PLEASE INDICATE BELOW FORMATION TOPS (IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE):

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy 1470	T. Devonian	T. Ojo Alamo	
T. Salt 1570	T. Silurian	T. Kirtland-Fruitland	
B. Salt 2710	T. Montoya	T. Farmington	
T. Yates 2745	T. Simpson	T. Pictured Cliffs	
T. 7 Rivers	T. McKee	T. Menefee	
T. Queen 3575	T. Ellenburger	T. Point Lookout	
T. Grayburg 3864	T. Gr. Wash	T. Mancos	
T. San Andres	T. Granite	T. Dakota	
T. Glorieta	T.	T. Morrison	
T. Drinkard	T.	T. Penn	
T. Tubbs	T.	T.	
T. Abo	T.	T.	
T. Penn	T.	T.	
T. Miss	T.	T.	

FORMATION RECORD

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
100	1470	1370	Shale and Sand				
1470	1570	100	Anhydrite				
1570	2710	1140	Salt and Anhydrite				
2710	3600	890	Anhydrite and Sand				
3600	4207	607	Dolomite, Anhydrite, and Sand				

ATTACH SEPARATE SHEET IF ADDITIONAL SPACE IS NEEDED

I hereby swear or affirm that the information given herewith is a complete and correct record of the well and all work done on it so far as can be determined from available records.

July 30, 1956
(Date)

Company or Operator DeKalb Agricultural Assn., Inc. Address 306 Lubbock National Bldg., Lubbock, Texas

Name Jack T. Moore Position or Title Production Supt.