

CDR. CPOG CHEVRON

MILLS LAKE A-70

Drilling Authority No. 241
Date Issued 16-12-66

WELL NAME CDR CPOG Chevron Mills Lake A-70
FIELD UNIDCAT Area:
LOCATION: Unit A Section 70 Grid 61-10; 117-45
Latitude 61-09-07.5 Longitude 117-56-29.6
From Established Reference Marker

U W L R 61-15-20.8 - 117-44-15.5
L I W I No. 300A706110 117-45.0

Rig Release Date: 17-3-67
Status D.A.
Information Release Date

CHANGE OF NAME:

DATE RECEIVED	INDEX
16-12-66	Application for a Drilling Authority.
9-5-67	Well Completion Data.
	Well History Report.
	Application to Amend a Drilling Authority.
	Application to change a Well Name.
1-5-67	Application to Abandon a Well or Suspend Drilling.
	Application to Alter Condition of a Well.
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	Well Completion Data.
	Work-over Report No.
	Application to Commingle Production before Measurement.
	Data for Back Pressure Test on Natural Gas Wells — Monograph 7 Method.
	Data for Back Pressure Test on Natural Gas Wells — Vitter's Method.
	M.P.R. — Oil — Calculations.
	New Oil Well Report.
	New Gas Well Report.
	Well Inspection Report.
	Rig Inspection Report.
	Battery Inspection Report.
	Equipment Report.
	Well Card.
	New Service Well Report.
	Monthly Water Flood Operations Report
	Monthly Water Receipts and Disposal of Fluids Report
	Logs. Large scale Small scale

SERVICING RECORD (Acidizing, Flaring, etc.)

PERFORMING RECORD (Bullet, Jet)				SERVICING RECORD (Acidizing, Fracing, etc.)			
Date	From	To	Remarks	Date	From	To	Remarks
1957							
Mar. 16	2412	1970	140 164 sacks cement plus 2% CaCl_2 , Fe II @ 1955				
Mar. 17	330 320	225	50 sacks cement plus 2% CaCl_2 , Fe I @ 235				
Cut off surface pipe 3' below ground level. Put 5 sacks of cement in top of pipe and welded on steel plate.							

DRILL STEM TESTS

No.	Date	Formation	From	To	V.O. Mins.	I.S.I. Mins.	F.S.I. Mins.	I.S.I.B.H.P.	F.S.I.B.H.P.	L.F.B.H.P.	F.F.B.H.P.	L.H.P.	F.H.P.	REMARKS
1	Mar 8/67	Keg River	2230	2268	118	56	118	970	965	84	319	2256	1055	615' of sulphurous salt water. Good initial puff on preflow.
2	Mar 16/67		2330	2412	120	55	141	1008	1026	44	57	1205	1187	40' drilling mud. Good initial puff on preflow.

ANALYSIS

Lab. No.	Sample	From	To	Source	Remarks
CNP-4-3641	Core 1 and Core 2	2100	2268	Cores	
CBH-2-1409	Water	2230	2265	DST #1	Top, middle and top of tool.
CBH-2-1307	Granite Wash	2330	2410	DST #2	Top of recovery.

PRESENT STATUS OF WELL	
Oil	(Interval)
Gas	(Interval)
Dry	Abandoned
Susp.	

Company CENTRAL-DEL RIO OILS LIMITED

Signed by J. J. J. J.
Staff Engineer

Date September 5, 1967

Forms to be prepared in duplicate and forwarded to the Oil Conservation Engineer, Calgary, Alberta.



File No. _____
Drilling Authority No. 242

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

Application to Abandon a Well or Suspend Drilling

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made for approval to abandon, to suspend drilling—

Name and number of well CHE CPO2 Chevron Mills Lake A-70
Location: Unit A Section 70 Grid 61° 10' N 117° 45' W
Latitude 61° 9' 7.8" Longitude 117° 54' 38.6"
From Established Reference Marker
Universal Well Location Reference 61.18335° N 117.9115° W
Permit No. 2010 Lease No. _____

Chevron Standard Limited
(Permitter, Lessor, Lessee)

Date of commencement of proposed program February 23, 1967

OIL, GAS, AND WATER ENCOUNTERED
(Depths)

Oil at _____
Gas at _____
Water at _____
Total Depth 2412 Date of last operations March 17, 1967
Present condition of well Dry and Abandoned

CASING RECORD

Casing Size O.D. Inches	Weight	Length	Per An-	Notes of Cement and Additions	Amount Pulled
1. <u>7"</u>	<u>200</u>	<u>202.25'</u>	<u>275.10'</u>	<u>100 sack normal plus</u>	
2. _____				<u>3% CaCl₂</u>	<u>2000</u>
3. _____					
4. _____					
5. _____					

PROPOSED ABANDONMENT PROGRAM

No.	Plug Position	Geological Formation	Number of Sacks of Cement	Remarks
1	<u>2412 - 1970</u>	<u>Locally Bay - Proterozoic</u>	<u>104 sk + 3% CaCl₂</u>	<u>Felt plug at 1964'</u>
2	<u>190 - 155</u>	<u>Surface Casing</u>	<u>50 sk + 3% CaCl₂</u>	<u>Felt plug at 2350ft.</u>
	<u>Cut off surface casing 3 ft. below ground level, put five sack cement on top of casing and welded on steel plate.</u>			

The following logs have been run Electrical Log 272-2415', Sonic Log 272 - 2414'

Other operations proposed _____

Operations to be carried out by Central-Del Rio Oils Limited Contractor Licence No. 24358
Address 700 - 8th Avenue S. W., Calgary Address 1512 - 9 Ave. S.E., Calgary
Responsible Agent in field J. M. Gibson

Dated at Calgary, Alberta this 2 Day of March 1967
Signed by [Signature] Company CENTRAL - DEL RIO OILS
Title Staff Engineer Operator's Exploratory Licence No. 1025

Notes: The Oil Conservation Engineer's office must be notified before work is commenced.

(For RESOURCE MANAGEMENT DIVISION use only)

APPROVAL

This application has been examined and proposed programme approved, subject to the following conditions:

Confirming oral approval given by Mr. B.H.J. Thoms on the 15th March 1967

Dated 1st May, 19 67

B.H.J. Thoms
Oil Conservation Engineer

Forms to be submitted in triplicate to Oil Conservation Engineer,
Department of Indian Affairs and Northern Development, Calgary, Alberta.



**DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL DEVELOPMENT
RESOURCE MANAGEMENT DIVISION**

Application for a Drilling Authority

This notice of intention to begin drilling operations, in triplicate, and where required a plan of survey approved by the Surveyor General showing the target area or the site of the well must be submitted and approved before commencing operations.

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made for approval to drill:—

Name and number of well CDR CPOG Chevron Mills Lake A-70
Location: Unit A Section 70 Grid 61° 10'; 117° 45'
Latitude 61° 9' ~~xxxx~~ 7.5" Longitude 117° ~~xxxxxx~~ 36' 29.6"
From Established Reference Marker _____

Elevation: Ground KB _____ feet above sea-level.
Well is expected to produce from The Lonely Lane _____ formation at a depth
of about ~~xxxx~~ 2700 feet.

Area assigned to well _____
(For Oil Conservation Engineer's use only)

Permit No. 3910 Lease No. _____ Acreage 30920

Permittee, licensee, or lessee Chevron Standard Limited

Exploratory Licence No. ~~xxxx~~ 1023

Surface owned by Crown or Crown

Petroleum and natural-gas rights owned by Crown
(If applicant submit name and address of owner and occupant.)

We propose to use the following strings of casing, either cementing or landing them as indicated below:—

Casing Size O.D. (inches)	Weight (Lb./Ft.)	Grade	Brand	New or Used	Estimated Depth	Barrel of Cement
1. <u>7"</u>	<u>20#</u>	<u>J-55</u>	<u>Seamless</u>	<u>New</u>	<u>250</u>	<u>110</u>
2. <u>4 1/2"</u>	<u>9.5#</u>	<u>J-55</u>	<u>Seamless</u>	<u>New</u>	<u>2700</u>	<u>75*</u>
3. _____	_____	_____	_____	_____	_____	_____
4. <u>if required for well completion</u>	_____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____	_____

Expected water, gas, and oil horizons and type of control equipment. Lonely Lane, Middle Devonian,
To be controlled by adequately weighted drilling mud and blowout preventers
until casing is set or the well abandoned.

Well will be drilled with (Rotary) Rig No. 17 by Big Indian Drilling Co. Ltd.
(Cable) (Drilling Contractor or company)

1318 - 9th Avenue S.E., Calgary, Alberta

Responsible agent of applicant:— Contractor's Business Licence No. 24358

At well J. M. Gibson At registered office J. M. Gibson

Address 736-8th Ave. S.W., Calgary Address 736 - 8th Ave. S.W., Calgary, Alberta

It is understood that if changes become necessary, notice of the change of plan will be submitted.

Dated at Calgary, this 13th day of December, 19 66

Signed by [Signature] Company Central-Del Rio Oils Limited

Title Staff Engineer Operator's Licence No. 1036

(For Resource Management Division use only)

APPROVED

This application has been examined and approved subject to the following conditions:—
The Company will submit to this office, on Tuesday of each week, the latest reports received by radio on the progress of the well.

Dated 16th December, 19 66

[Signature]
Oil Conservation Engineer

NANR 52-90-1 (7-65)

Forms to be submitted to Oil Conservation Engineer, Calgary, Alberta.

Universal Well Location Reference: 61.15208° N 117.94155° W

Well Report 26-11-4-1

CDR CPOG CHEVRON MILLS LAKE A-70

Unit A Sec. 70 Grid 61°10' N. 117°45' W.

MILLS LAKE AREA - Northwest Territories
CANADA

R. J. Burger
Consulting Geologist
830 Guinness House
Calgary, Alberta.

Telephone: 262-5475.

*Received
Sept 14/67*
March 17, 1967.

Department of Northern Affairs
Resource Development and Natural Resources Branch
Resource Management Division
Northwest Territories, Canada.

Dear Sir:

Re: Well History Report CDR CPOG CHEVRON MILLS LAKE A-70
Unit A, Sec. 70, Grid 61° 10' N., 117° 45' W.

Pursuant to Section 101 (2) of the Canada Oil and Gas Drilling and Production Regulations, the following report has been prepared as outlined in your letter of requirements dated August 1965. Section I follows; Section II to V are included in the enclosed report.

Section I - Summary of Well Data

- (a) Well name and number CDR CPOG CHEVRON MILLS LAKE A-70
Unit A, Sec. 70, Grid 61° 10' N., 117° 45' W.
- (b) Permittee Chevron Standard Ltd. Licencee Central-Del Rio Oils Limited
- (c) Name of Operator Central-Del Rio Oils Limited
736 - 8 Ave. S.W., Calgary, Alberta.
- (d) Location Unit A, Section 70, Grid 61° 10' N., 117° 45' W.
- (e) Co-ordinates Latitude 61° 9 minutes 07.5 seconds
Longitude 117° 56 minutes 28.8385 seconds
- (2) Permit or Lease Number 3910'
- (g) Drilling Contractor Big Indian Drilling Co. Ltd. Rig #17
Gardner Denver #2000 truck mounted.
- (h) Drilling Authority 779 issued ¹⁶ Dec. 1966.
- (i) Classification New Field Wildcat.
- (j) Elevations Ground: 810' K.B.: 819'
- (k) Spudded 6:45 P.M. Feb. 23, 1967.
- (l) Completed Drilling 8:30 P.M. March 11, 1967.
- (m) Total Depth 2412' (Driller)

(u)	<u>Well Status</u>	dry and abandoned.
(U)	<u>His Released</u>	12 Noon March 17, 1967. 4 7/8" 0-272'
(p)	<u>Hole Size</u>	6 1/4" 0-272'
(v)	<u>Casing</u>	surface casing: ran 7 joints 7" 20 lb. J 55 Rgs. 2 & 3 Japanese casing cased at 253.28' and set at 272.10' with 100 sacks normal cement plus 2% CaCl ₂ . Plug down at 1:30 A.M. Feb. 26, 1967. Good Returns.

Yours truly,

H. J. Burger

H. J. Burger, P. Geol.

EE:cb

WELL REPORT

COR CPOC CHEVRON MILLS LAKE A-70

Unit A, Section 70, Grid 61° 10' N., 117° 45' W.

MILLS LAKE AREA
Northwest Territories - Canada.

March 18, 1967.

R. J. Burger, P. Geol.
870 Guinness House
Calgary, Alberta.

Telephone: 262-5475.

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SUMMARY OF WELL DATA

Well Name: CDR CPOG CENTRON MILLS LAKE A-70

Location: Unit A, Section 70, Grid 61° 10' N., 117° 45' W.

Elevation: Ground: 810' K.B.: 819'

Final Total Depth: Driller: 2412' Schlumberger: 2416'

Classification: Wildcat

Drilling Contractor: Big Indian Drilling Co. Ltd. Rig #17.

Drilling Supervisor: Ted Mulligan

Equipment: Drawworks: Gardner Denver #2000 truck mounted; power off Cummins 220 H.P. truck motor.
Pump: Gardner Denver F X D power off Cummins 220 H.P. truck motor.
Derrick: Gardner Denver 60' mast.
Substructure: 6' high made from low boy.

Operator: Central Del Rio Oils Ltd.

Spudded: 6:45 P.M. Feb. 23, 1967.

Rig Released: 12 Noon March 17, 1967.

Status: Dry and abandoned.

Logs: Lithological Log 0 2412'
Induction Electrical Log 272-2415'
Bore Hole Compensated Sonic Log 272-2414'

Surface Casing: Ran 7 joints 7" 20 lb. J.55 Rgs. 2 & 3 Japanese casing
cemented at 263.28' and set at 272.10' with 100 sacks
normal cement plus 2% CaCl₂. Plug down at 1:30 A.M.
Feb. 26, 1967. Good returns.

Cores: Core #1 - 2100-2131' (Lonely Bay) Cut 31' Rec. 31'
Core #2 - 2237-2268' (Basal Keg River) Cut 31' Rec. 31'.

Drill Stem Tests #1 - 2230'-2268' (Basal Keg River)
Pre-flow 10 min.; I.S.I. 60 min. V.O. 120 min. F.S.I.
120 min. Good initial puff, good air blow decreasing
slightly towards end of test, no gas to surface.
I.H.P. 1110 F.H.P. 1030 } Field
I.S.I.P. 980 F.S.I.P. 990 } Pressures
I.F.P. 50 F.F.P. 330 }
Recovery: 615' sulphurous salt water.
Temperature: 90°. Test Mechanically Satisfactory.

Drill Stem Tests (Cont'd)

#2 - 2330--2412' (CHENHAGA)

Pre-flow 12 min. I.S.I. 50 min.; valve open 120 min.,
F.S.I. 120 min., good initial puff, good air blow
during flow period.

I.R.P.	1210	F.R.P.	1180	} Field Pressures
I.S.I.P.	1010	F.S.I.P.	1030	
I.F.P.	40	F.F.P.	40	

Recovery: 40' drilling mud.

Plugs:

Plug #1 2412-1970' - 104 sacks plus 21 CaCl₂
plug down 4:05 P.M. March 16, 1967. Felt plug
at 1955' 11:45 P.M.

Plug #2 330-225' 50 sacks plus 21 CaCl₂.
Plug down at 1:45 A.M. March 17, 1967.
Felt plug at 235' 9:15 A.M. March 17, 1967.

Cut off surface pipe 5' below ground level, put
5 sacks at top surface casing.
Welded on steel plate.

Analyses: Water	-	CBH-2-1307	2330' - 2410'	DST #2	Top of Recovery
		CBH-2-1409	2230' - 2265'	DST #1	" " "
					Middle of Recovery
					Top of Tool

Core	-	CKP-4-3641	#1	-	2100' - 2131'	Rec.	31'
			#2	-	2237' - 2268'	"	31'

FORMATION TOPS

COR CPOG CHEVRON MILLS LAKE A-70
Unit A Sec. 70 Grid 61° 10' N., 117° 45' W.

Ground 818'
 K.B. 819'

	<u>Depth</u>	<u>Subsea</u>
<u>Electric Log Top</u>		
Hay River Limestone	10'	(309')
Hay River Shale	200	(619')
Mills Lake Member	1822	(-1003')
Horn River Shale	1860	(-1041')
Lonely Bay	2089	(-1269')
Basal Kay River Platform	2238	(-1419')
Chinchaga	2265	(-1446')
Green Shale	2342	(-1523')
Pre-Cambrian	2384'	(-1565')
 <u>Final Total Depth</u>		
Driller	2412	(-1593')
Schlumberger	2416	(-1597')

CAMPBELL & HODGKINS/STREPT/STREPT
STREPT/STREPT/STREPT

COR CPOG CREEK/MILLS LAKE A-70
Unit A, Sec. 70, Grid 61° 10' N., 117° 45' W.

Ground: 810'
K.B.: 819'

- 0-50' Limestone light gray argillaceous slightly silty dense.
RAY RIVER LIMESTONE 10' (809')
- 50-100' Limestone light gray slightly greenish argillaceous slightly silty dense some slightly micro-micaceous.
- 100-140' SHALEY LIMESTONE light gray green dense shaley limestone.
- 150-200' LIMESTONE light gray some slightly greenish some fine fossiliferous ~~fragmental~~, dense.
RAY RIVER SHALE 220' (619')
- 200-260' SHALE light gray green limy.
- 260-360' SHALE gray green slightly micro-micaceous soft.
- 360-440' SHALE light gray soft.
- 440-600' SHALE light gray green uniform soft.
- 600-750' SHALE light gray green slightly micro-micaceous in part.
- 750-780' SHALE light gray green.
- 780-930' SHALE light gray green.
- 930-1000' SHALE light gray green.
- 1000-1200' SHALE light gray green soft flaky in part.
- 1200-1270' SHALE light gray green some dark gray splintery micro-micaceous.
- 1270-1300' SHALE light gray green soft.
- 1300-1500' SHALE dark gray and gray green splintery micro-micaceous.
- 1500-1700' SHALE medium and dark gray green micro-micaceous splintery, slightly coaly flecked in part.
- 1700-1760' SHALE as above, medium and dark gray green
- 1760-1770' SHALE dark gray green and medium gray. Trace LIMESTONE light tan and cream argillaceous dense.
- 1770-1790' SHALE medium and dark gray minor LIMESTONE cream and light gray dense argillaceous.

- 1790-1830' SHALE medium gray green micro-micaceous.
HILLIS LAKE MEMBER 1831' (-1893')
- 1830-1840' SHALE light gray green and medium gray micro-micaceous some limestone light gray argillaceous dense.
- 1840-1850' SHALE light gray and medium gray micro-micaceous splintery. LIMESTONE (10-15%) light gray micro-crystalline dense.
ROCK RIVER SHALE 1850' (-1841')
- 1850-1870' SHALE light gray green slightly micro-micaceous splintery.
- 1870-1900' SHALE dark gray some gray black micro-micaceous splintery.
- 1900-1910' Sample missing.
- 1910-1960' ~~SHALE~~ dark gray some gray black some slightly bituminous much light gray green splintery shale.
- 1960-2020' SHALE dark brown and gray black, bituminous, calcareous, firm.
LOVELY BAY 2022' (-1269')
- 20-20-2090' SHALE dark brown and gray black much light gray green splintery shale.
- 2090-2100' SHALE dark brown slightly calcareous some dark gray black.
 Core #1 2100-2130' Cut 31' Rec. 31'
 Penetration Rate: 22, 32, 25, 18, 15, 13, 12, 6, 5, 10, 8, 10, 9, 10, 11, 10, 23, 11, 11, 10, 2, 6, 13, 10, 9, 9, 8, 10, 10, 10, 10.
- 31.0' SHALE dark brown bituminous limy grading to argillaceous bituminous LIMESTONE, slightly fossiliferous towards base of core.
- 2131-2160' LIMESTONE light brown and medium brown micro-crystalline dense some light brown slightly chalky LIMESTONE.
- 2160-2200' LIMESTONE light brown and tan chalky dense some LIMESTONE dark brown micro-crystalline dense.
- 2200-2230' LIMESTONE light brown and tan slightly chalky in part micro-crystalline dense.
- 2230-2234' LIMESTONE dark brown micro-crystalline dense.
- 2234-2237' LIMESTONE light brown micro-crystalline slightly earthy, slightly yellow fluorescence positive oil acid reaction. Trace poor porosity few chips.
BASAL ROCK RIVER PLATFORM 2238' (-1419')

Cora #2 2257-2265' Cor 31' Rec. 31'
Penetration Rate: 13, 15, 15, 11, 10, 16, 16, 14, 17, 10, 8, 10,
12, 11, 11, 8, 5, 9, 10, 7, 5, 9, 13, 17, 17, 18, 17, 21, 15, 13,
12.

9.0' DOLOMITE light brown micro-crystalline tight argillaceous minor scattered pin point porosity. Core light brown oil stained dull yellow fluorescence. Abundant stylolites.

13.0' DOLOMITE light brown fine granular and fine feculiferous fragmental. Scattered poor pin point porosity light brown oil stained dull yellow fluorescence.

9.0' ANHYDRITE light brown crypto-crystalline dense.

CHURCHAGA 2265' (-1446')

~~2262-2280'~~ ANHYDRITE light brown micro-crystalline dense much gray green shale.

2280-2300' SHALE gray brown and dark gray some light gray green shale. Some ANHYDRITE (15%) light brown micro-crystalline dense.

2300-2320' ANHYDRITE light brown and cream micro-crystalline to crypto-crystalline dense; much shale gray and gray green.

2320-2330' LIMESTONE light brown argillaceous dense.

2330-2350' DOLOMITE cream dense argillaceous much SHALE gray green.

GREEN SHALE 2342' (-1523')

2350-2380' SHALE gray green splintery minor SHALE light green some ANHYDRITE dark brown crypto-crystalline dense.

2380-2390' SHALE as above.
GRANITE (10%) fragments feldspar, biotite, quartz. Tight no staining.

PRE-CAMBRIAN 2394' (-1565')

2390-2395' GRANITE feldspar pink coarse angular, biotite, hornblende, black some quartz no stain, tight.

2395- GRANITE as above.

Final Total Depth	
Driller	2412' (-1593')
Schlumberger	2416' (-1597')

R. J. Burger, Geologist.

DRILL STEM TEST REPORT

Test No. 1

Date: March 8, 1967.

Well Name: CER CPOC CHEVRON HILLS LAKE A-70

Testing Co. B. J. Service

Operator: Henry Mianette

O.D. Packer Rubber: 5 1/2 Hole Size 6 1/4" Choke Size: 1 1/2"

Length of Tail Pipe: 38' Drill Pipe Size: 3 1/2" Perforations: 27

Mod: Weight 8.5 Viscosity 63 Water Loss 4.3 PH 7.2

Interval Tested: 2230-2268'

Formation: Basal Leg River

Time: Tool started in hole 9:30 P.M. Tool on bottom: 12:02 A.M.

Tool opened 12:12 A.M.

Tool closed 5:00 A.M.

Tool pulled loose 5:15 A.M.

Tool out of hole 7:30 A.M.

Pressures: I.H.P. 1110

F.H.P. 1080

I.S.I.P. 980

F.S.I.P. 990

I.F.P. 90

F.F.P. 130

Field
Pressures

Pre-flow 10 minutes; I.S.I. 60 minutes Valve Open 120 minutes. F.S.I. 120 min.

Remarks: good initial puff, good air blow decreasing slightly towards end of test. No gas to surface.

Recovery: 615' sulphurous salt water.

Temperature: bottom hole 90°.

Test Mechanically Satisfactory.

R. J. Burger
Geologist

WELL TEST REPORT

Test No. 2

Date: March 16, 1967.

Well Name: CHE CPOG CHEVON HILLS LAKE A-70

Testing Co.: B.J. Service

Operator: Henry Blanchette

O.D. Packer Rubber: 5 1/2 Hole Size: 6 1/4" Choke Size: 1/2"

Length of Tail Pipe: 57' Drill Pipe Size: 3 1/2 Perforations: 41

Interval Tested: 2330-2412' Formation: CHICKHAWA

Mod: Weight 9.3 Viscosity 97 Water Loss 6.5

Pressures:	I.H.P.	1210	F.H.P.	1180	} Field Pressures
	I.S.I.P.	1010	F.S.I.P.	1030	
	I.F.P.	40	F.F.P.	40	

Pre-flow 12 min.; I.S.I. 50 min.; Valve open 120 min., F.S.I. 120 min.

Remarks: good initial puff good air blow on flow period.

Recovery: 40' drilling mud. (Water Loss 6.4 cl 20,000 ppb)

Test Mechanically Satisfactory.

Ted Malligan, Engineer.

D. S. T. REPORT

No. 1000	1000 Chevrolet	Test No.	One
No. 1001	1001 Buick Wildcat	Test Date	10-11-67
Company	General Del. Buick	Interval	2237-2247
Comments	1. 1001 Buick 2. 1001 Buick	Date	March 1, 1967



DRILL-STEM TEST DATA

Well Name	DR JPO7 Chevron	Test No	One
Well Number	Mills Lake A-70	Zone Tested	Red River
Company	Central Del Rio Mills	Interval	2230-2268
Comp. Rep	T. Mulligan	Tester	H. Blanchetta
		Date	March 8, 1967

Pretlow 10 mins ISI 56 mins Flow 118 mins PSI 118 mins

Type of Test	REC No	REC No	REC No
(Single) Bottom Hole	2453	5040	
	12 HR CLOCK	12 HR CLOCK	
DEPTH	2232	2256	
Initial Hydro Mud Press	1069	1072	
Initial Shut-In Press	970	970	
Initial Flow Press	74	84	
Final Flow Press	318	319	
Final Shut-In Press	971	965	
Final Hydro Mud Press	1057	1055	

Mud Drop 111 Fluid Loss 4.3 Mud Weight 8.5

Viscosity 63 Temperature 90°F Net Pay Tested 15

Top Packer Depth 2230 Bottom Packer Depth Total Depth 2268

Drill Pipe Size 3 1/2" P Wt. Drill Collar I.D. 2" Ft. Run 148

Surface Choke Size Adjustable Bottom Choke Size 1/2" Main Hole Size 6 1/4"

Anchor Size 4 1/2" O.D. Rat Hole Size Feet of Rat Hole

Cushion Amount Type Rubber Size 5 1/2"

Fluid Recovery Total Feet 615

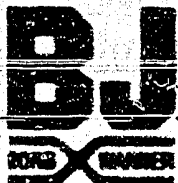
Recovered 615 Feet of Sulphurous Salt Water

Recovered Feet of

Gas Recovery How Measured

mins.	Press Rdg.	=	MCF/Day
mins.	Press Rdg.	=	MCF/Day
mins.	Press Rdg.	=	MCF/Day
mins.	Press Rdg.	=	MCF/Day

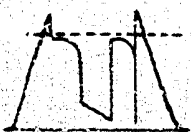
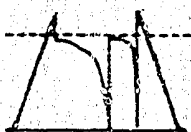
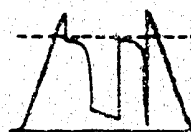
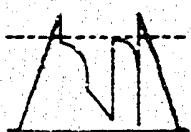
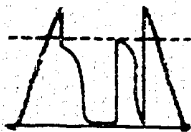
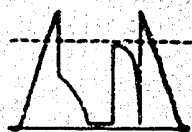
REMARKS: Good initial puff. Good air blow decreasing slightly throughout flow period. Hole condition good.

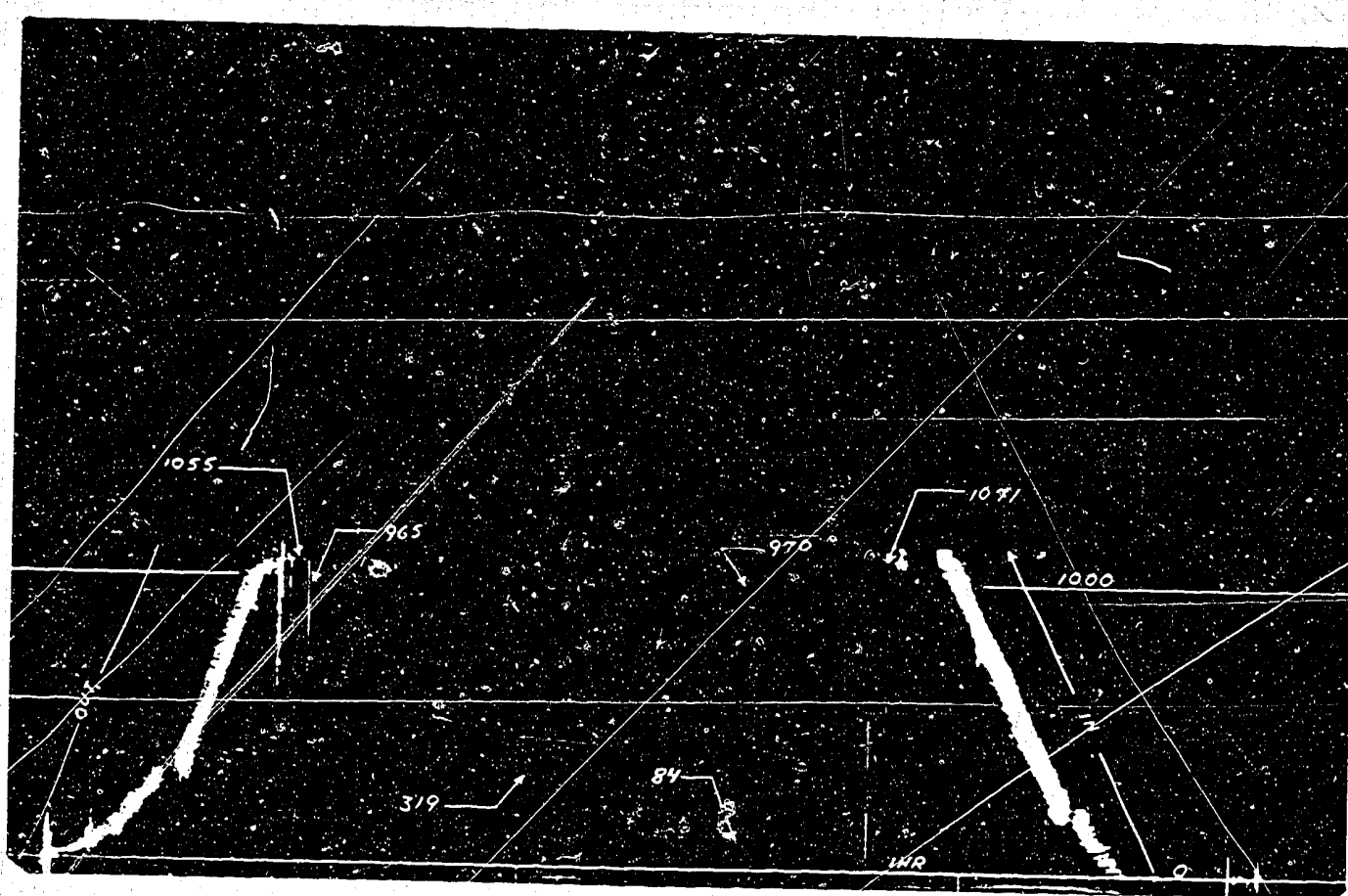
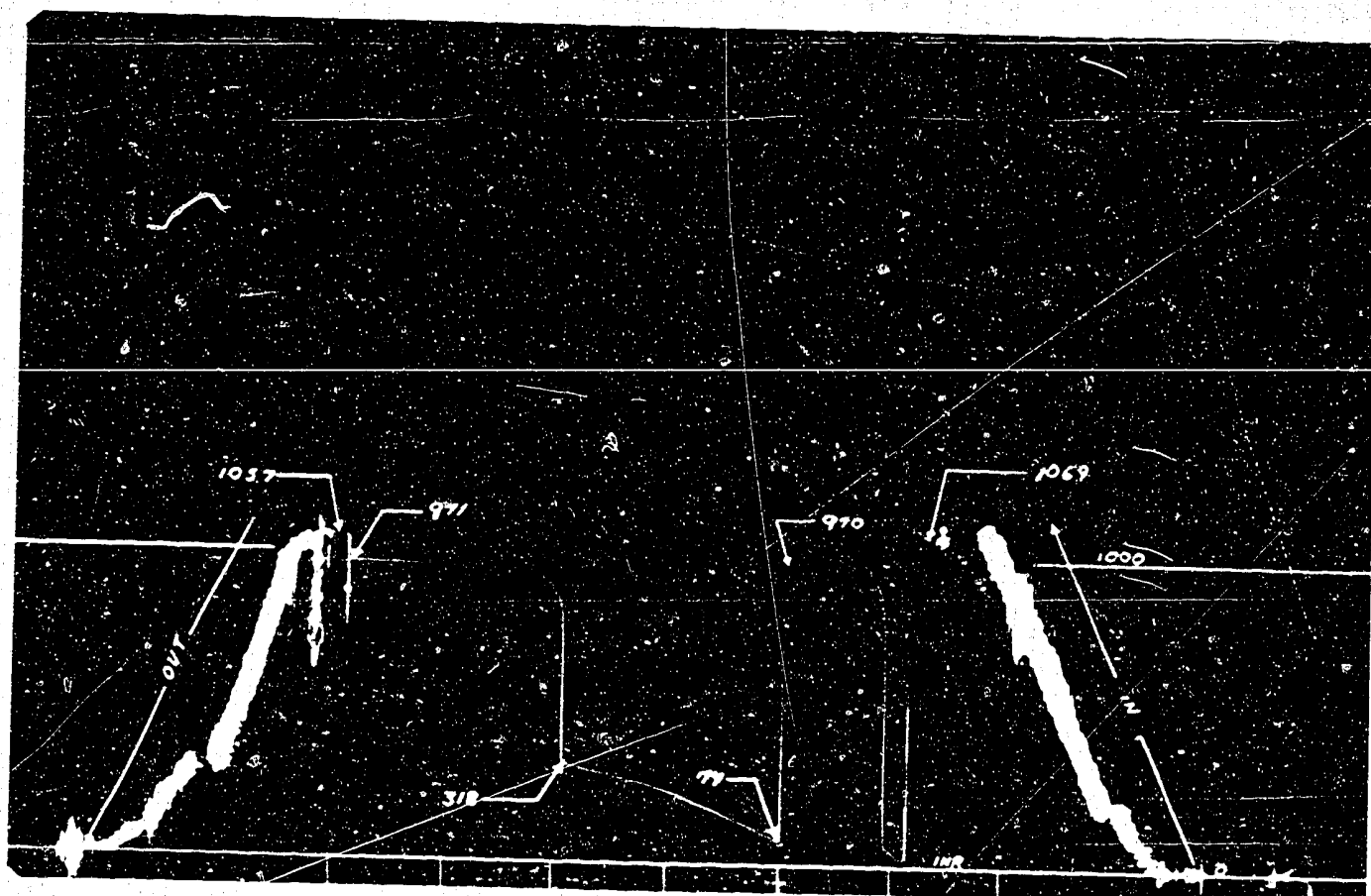


TESTING REPORT

	P.O.S.	1.00
	CO SUB	1.82
	SHUT IN TOOL	5.34
	BPS	
	HYDRAULIC TOOL	7.01
	JARS	4.86
	RECORDER(S)	
	SAFETY JOINT	1.74
	BY PASS SUB	
	PACKER	5.00
1. PACKER DEPTH	2230	1.00
	PACKER	
2. PACKER DEPTH		
	ANCHOR	
	BLANK OFF SUB/BY PASS SUB	
3. PACKER DEPTH		
	PACKER	
4. PACKER DEPTH		
	PACKER	
	ANCHOR—SPECIFY	
	Rec.	5.00
	Perfs.	19.00
	Rec.	5.00
	Perfs.	5.00
TOTAL DEPTH	2260	
	BULLNOSE	3.15

DST CHARTS FOR COMPARATIVE VISUAL ANALYSIS

HIGH PERMEABILITY
STRONG DAMAGE EFFECTHIGH PERMEABILITY
NO DAMAGE EFFECTMEDIUM PERMEABILITY
STRONG DAMAGE EFFECTMEDIUM PERMEABILITY
NO DAMAGE EFFECTLOW PERMEABILITY
STRONG DAMAGE EFFECTLOW PERMEABILITY
NO DAMAGE EFFECT



Well Name POG Chevron	Test No 2
Well Location Mills Lake A-70	Zone Tested
Company Central-Del Rio Oils Limited	Interval 2330 - 2412
Camp Rep I. Sullivan	Tester H. Blinco Date March 10, 1967



DRILL-STEM TEST DATA

Well Name	CDR FOG Chevron	Test No	2
Well Number	Mills Lake A-70	Zone Tested	
Company	Central-Bel Rio Oils Limited	Interval	2330 - 2412
Comp Rep	I. Mulligan	Tester	H. Blumette
		Date	March 16, 1967

Prelow 10 mins ISI 55 mins Flow 120 mins FSI 141 mins

Type of test	REC No	REC No	REC No
	HR. CLOCK	HR. CLOCK	HR. CLOCK
Depth			
Initial Hydr. Mud Press		1205	
Initial Shut-In Press		1008	
Initial Flow Press		44	
Final Flow Press		57	
Final Shut-In Press		1026	
Final Hydr. Mud Press		1187	

Mud Drop _____ Fluid Loss _____ Mud Weight 9.3

Viscosity 27 Temperature 500 F Net Pay Tested _____

Top Packer Depth _____ Bottom Packer Depth _____ Total Depth _____

Drill Pipe Size _____ Wt _____ Drill Collar I.D. _____ Ft Run _____

Surface Choke Size _____ Bottom Choke Size $\frac{1}{2}$ " Main Hole Size $6 \frac{1}{4}$ "

Anchor Size _____ Rat Hole Size _____ Feet of Rat Hole _____

Cushion Amount _____ Type _____ Rubber Size $5 \frac{1}{2}$ "

Fluid Recovery Total Feet 40

Recovered 40 Feet of Drilling Mud

Recovered _____ Feet of _____

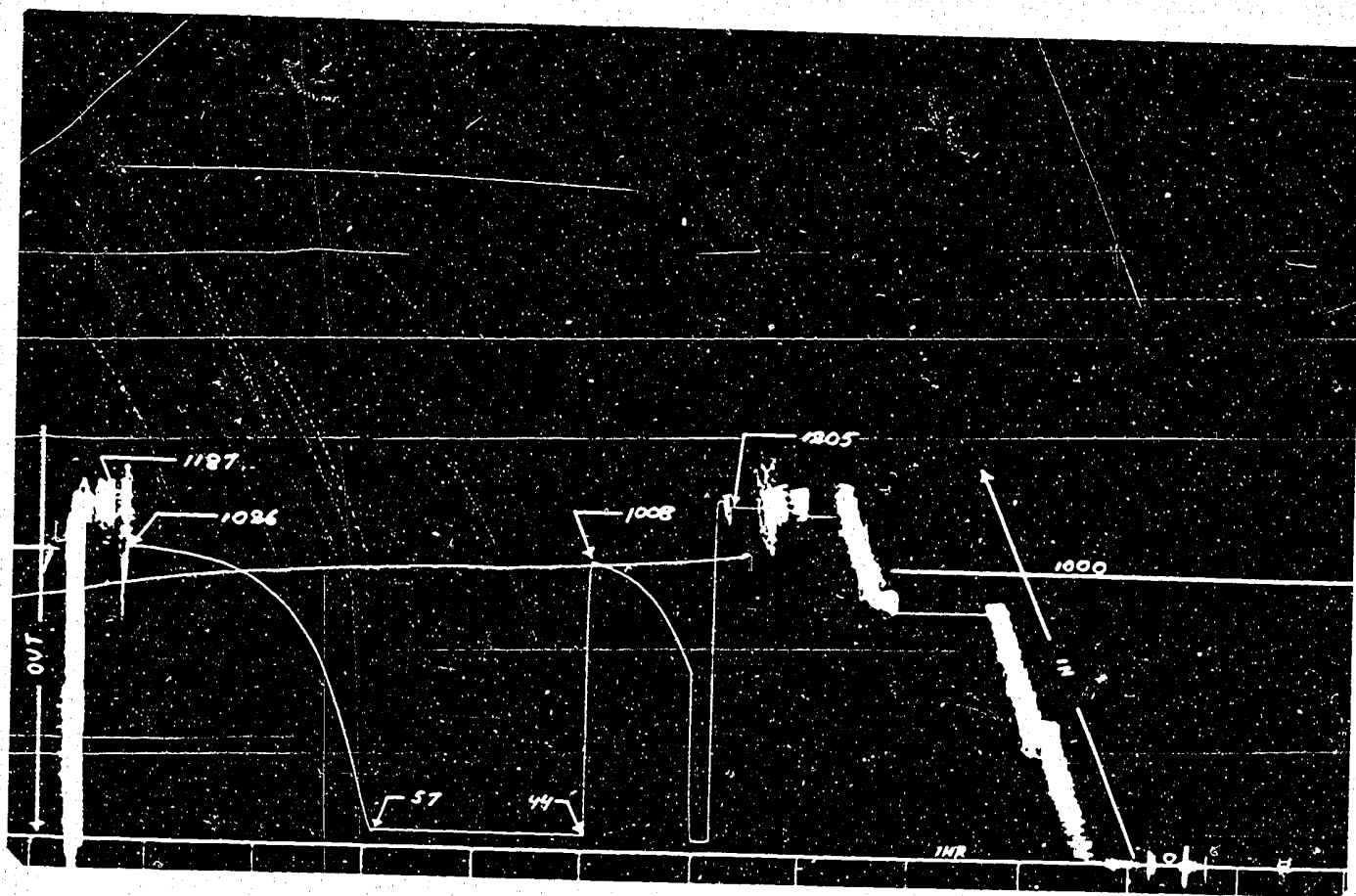
Gas Recovery _____ How Measured _____

_____ mins.	Press Rdg. _____	= _____	MCF/Day
_____ mins.	Press Rdg. _____	= _____	MCF/Day
_____ mins.	Press Rdg. _____	= _____	MCF/Day
_____ mins.	Press Rdg. _____	= _____	MCF/Day

REMARKS

G.I.P. on preflow. Dead on initial flow





BIT RECORD

<u>Bit #</u>	<u>Size</u>	<u>Make</u>	<u>Type</u>	<u>Serial #</u>	<u>Depth Out</u>	<u>Footage</u>	<u>Hours</u>	<u>Accum. Hrs.</u>
1A	9 7/8	Smith	DT	66899	70	70	14	14
2A	9 7/8	Smith	DT	66893	177	177	24 1/2	38 1/2
1	6 1/4	Smith	DT	12302	1092	613	30 1/4	58 3/4
2	6 1/4	Smith	DT	38356	1239	767	19	76 3/4
3	6 1/4	Smith	DT 25	40250	2100	241	13 1/4	90
4	6 3/16	Diamond Core		7018C	2131	31	6 1/2	96 1/2
5	6 1/4	Smith	DT 28	40262	2237	106	19 1/2	116
6	6 1/4	Reed	YTL	E 76141	2237	98 ream	3 1/2	119 1/2
7	6 1/4	Reed	YCAC	ZNYCAC	2283	14	5 1/2	123
4	6 3/16	Diamond Core		7018C	2286	31	6	131
6	6 1/4	Reed	YTL	E76141	2386	183	15 1/4	146
8	6 1/4	Reed	YSL	E17172	2408	22	11 3/4	157 3/4
9	6 1/4	Reed	YTR	T41453	2412	4	1 1/2	161 3/4

WED RECORD

Super Gel	118 sacks
Salt Gel	27 sacks
Cement	225 lbs.
Plaster	37 sacks
CNC	50 lbs.
Preservative	50 lbs.
Starch	40 sacks
Diesel Fuel	32 barrels
No Stick	2 barrels
Defoaming Agent	2 pails
Grout	2 sacks

SURVEY RECORD

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
70	1/40	529	1/2
100	3/4	731	0
130	3/4	1000	1/4
160	1/2	1253	0
190	3/4	1606	1/4
219	3/4	1826	3/4
251	1/4	2100	1 1/8
404	1	2300	1 1/3

DAILY PROGRESS REPORT

GULF COAST CHEVRON WELLS LAKE A-JD

Feb. 24/67 Depth (8 AM) 60' Progress: 60' On Bottom: 10 hours
Operations: drilling.

Remarks: Rigging to spud 10 3/4 hrs.
Mix mud 1 1/4
Survey & repairs 2
Spudded 6:45 P.M. Feb. 23/67.
Additives
Super Col 28 sacks
Caustic 100 lbs.
Plaster 4 sacks

Feb. 25/67 Depth (8 AM) 151' Progress: 121' On Bottom: 20 1/4 hrs.
Operations: drilling.

Mud Properties
Visc. 34 Wt. 9.2
Additives
Super Col 25 sacks
Caustic 1 sack
Remarks: Surveys and Rig Service 2 3/4 hrs.

Feb. 26/67 Depth (8 AM) 277' Progress: 96' On Bottom: 5 3/4 hrs.
Operations: Waiting on cement.

Mud Properties
Visc. 70 Wt. 9.6
Additives
Super Col 17 sacks
Remarks: 1 1/2 hr. Circulate hole clean & mix mud.
3/4 hr. Repair pump and clutch
2 1/4 hr. run casing
1 1/2 Rig service & surveys
1 1/2 circulate casing
1 1/2 beat water for cementing
1/2 run cement
4 beat to circulate water
2 1/2 circulate hot water.

Feb. 27/67 Depth (8 AM) 277' Progress: 0

Operations: Nipping up.
Remarks: 5 1/2 hrs. waiting on cement.
18 1/2 hrs. nipping up, working on B.O.P.'s
Run 3 sacks cement in cellar around casing clamp.

Feb. 28/67 Depth (8 AM) 529' Progress: 252' On Bottom: 11 hrs.
Operations: repairing pump.

Mud Properties
Visc. 36
Weight 9.0
Remarks: 9 1/2 hrs. nipping up.
1 rig service
2 clean tanks & repair
2 1/2 drill out cement.
Drilled out 8:30 P.M. Feb. 27, 1967.

Mar. 1/67 Depth (8 AM) 1236' Progress: 707' On Bottom: 15 1/4 hrs.
Operations: fishing for D.P.

Mud Properties
Wt. 9.5
Vis. 32

Mar. 1/67 (cont'd)

Remarks: 1 1/2 hrs. fishing & making up tools
1 1/2 hrs. repairing pump
1 1/4 hrs. surveys
1 1/2 hrs. rig service and rig lights.

Pipe failure at 1092' 130' below table
removed fish and ran in with new bit.
Pipe failure at 1296' 585' below table.

Mar. 2/67 (8 AM) Depth 1690' Progress: 451' On Bottom: 13 hrs.
Operations: Drilling.

Mud Properties

Visc. 29 Wt. 9.0

Remarks: 6 1/2 hrs. fishing and handling tools
1 1/2 hrs. rig service and survey
2 1/2 hrs. repairs

Mar. 3/67 Depth (8 AM) 2040' Progress: 350' On bottom: 14 5/6 hrs.
Operations: drilling.

Mud Properties

V.L. 7.2

Weight 9.8

W.L. 6.7

PH 7.2

Remarks: 1 1/2 hrs. Rig service
2 3/4 hrs. clean tanks
1 1/4 hrs. repairs.

Additives

Starch 22 sacks
Plaster 8 sacks
Salt Gel 8 sacks

Mar. 4/67 Depth (8 AM) 2131' Progress: 91' On bottom: 10 1/2 hrs.
Operations: break down core barrel.

Mud Properties

Visc. 61 Wt. 9.7 W.L. 7.2 PH 7.2

Remarks: 3 1/4 hrs. rig service & work on pump
3/4 hrs. make up core barrel
1/2 hr. clean to bottom & circulate hole
1/2 hr. survey
1/4 hr. circulate sample
1 3/4 hrs. circulate and wait on orders.
1/2 hr. break down core barrel.

Measured our Pipe strap 2111.28 Bead Tally 2111.23
No Correction.

Mar. 5/67 Depth (8 AM) 2234' Progress: 103' On Bottom: 18 1/4 hrs.

Operation: drilling

Mud Properties

Visc. 52 Wt. 9.5 W.L. 4.4 PH 8.0

Additives

Super Col	17 sacks
CEC	25 lbs
Plaster	4 sacks
Milstarch	5 sacks
Seawust	2 sacks

Mar. 6/67 Depth (8 AM) 2237' Progress: 3' On Bottom: 1 1/4 hr.
Operation: stuck in hole with core barrel.

Mud Properties

St. 923
Vis. 67
W.L. 3.6
PH 8.5

Additives

Plaster 2 sacks
Starch 3 sacks
Preservative 25 lbs.

Remarks: 1 3/4 hrs. circulate and build mud volume
1/2 hr. service rig
5 hrs. start rig motors
1/2 hr. clean to bottom with core barrel 90'
13 hrs stuck pipe at 2207'
Stuck pipe core barrel at 8 P.M. March 5, 1967.

Mar. 7/67 Depth (8 AM) 2237' Progress: 0
Operation: stuck in hole, laying down inner Core barrel.

Mud Properties

Visc. 145
Wt. 8.9
W.L. 2.6
PH 3.0

Additives

Diaseal fluid 12 bbls.
No Stick 2 bbls.
Starch 4 sacks
Plaster 4 sacks
Super Col 5 sacks
GMC 25 lbs.
Salt Gel 5 sacks

Remarks: Stuck at 2207'.
Backed off at safety joint on core barrel.
Retrieved in barrel. Ran in with Bowen jars screwed into
top of fish (safety joint) jarred fish loose with 28,000 lbs.
12 Noon. Pulled out of hole.

Mar. 8/67 Depth (8 AM) 2240' Progress: 3' On Bottom: 3/4 hr.
Operation: coring.

Mud Properties

Visc. 43
Wt. 8.5
W.L. 4.2
PH 6.5

Additives

Preservatives 25 lbs.

Remarks:
3 1/2 hrs. conditioning mud
3 1/2 hrs. reaming and conditioning 90° hole
6 hrs. fishing
3/4 hr. rig service
2 circulating and reaming 60° with core barrel.

Mar. 9/67 Depth (8 AM) 2268' Progress: 28' On Bottom: 6 hrs.
Operation: breaking down tool.

Mud Properties

Visc. 72
Wt. 8.2
W.L. 4.3
PH 7.2

Additives

Mixed 2 pails LD 7
defoaming agent.

Remarks:
1 1/4 hr. service rig
1 1/2 hr. condition mud and mix defoaming agent
1 1/4 hr. Handle core
1 3/4 hr. wait orders
2 Make up packer
5 1/2 hrs. testing
1/2 hr. break down tool.

Mar. 10/67 Depth (8 AM) 2332' Progress: 34' On Bottom: 13 1/2 hrs.

Operation: drilling.

Mud Properties

Visc. 61
St. 9.0
W.L. 6.6
PH 8.5

Additives

Plaster 2 sacks
Starch 3 sacks

Remarks:

1 1/2 hrs. handling testing tool
1 service rig and survey
1 room bathole
1 work on pump
1/2 prepared to trip
1 clean 4" file last bit

Mar. 11/67 depth (8 AM) 2405' Progress: 52' On bottom: 15 hrs.

Operation: drilling.

Mud Properties

Visc. 52
Weight 9.1
W.L. 5.6

Additives

Plaster 4 sacks
Salt Gel 4 sacks
Caustic 25 lbs.
Super Col 3 sacks
Starch 10 sacks

Remarks:

2 3/4 hrs. dump tanks
1 1/2 hrs. room under guage hole
3/4 hrs. rig service.

Mar. 12/67 Depth (8 AM) 2412' Progress: 7' On Bottom: 2 3/4 hrs.

Operation: waiting on Schlumberger.

Mud Properties

Visc. 72
St. 9.3
Water loss 5.6
PH 8.0

Additives

Salt Gel 10 sacks
Super Col 10 sacks
Starch 12 sacks
Plaster 4 sacks

Remarks:

1 hr. lay down core barrel
3 hrs. room under guage hole
12 hrs. circulate and wait on log truck
2 1/4 hrs. pump repair.

Mar. 13/67 Depth (8 AM) 2412' Progress: 0

Operation: circulating waiting on log truck.

Additives

Super Col 8 sacks
Starch 2 sacks

Mar. 14/67 Depth (8 AM) 2412' T.D.

Operation: waiting on log truck.

Mud Properties

Visc. 77
St. 9.1
W.L. 5.6
PH 8.0

Additives

Super Col 5 sacks

Remarks:

Waiting on log truck 24 hours.
Log truck drifted in. Snow plow sent from Ft. Providence.
to plow Simpson Trail.

March 15/67 Depth (6 AD) 2412' T.D.

Operations waiting on orders.

Remarks: Log truck (Schlumberger) alerted March 9th ordered
out at 9 A.M. March 11th for logging on arrival.

Truck arrived on lease 9:30 P.M. March 14, 1967.

E. Burger
E. Burger

CORE LABORATORIES - CANADA, LTD.

Petroleum Reservoir Engineering
CALGARY, ALBERTA

Company Central-DeL Rio Oils Limited Formation _____ Page 1 of _____
 Well CDR CROG Mills Lk A-70 Coring Equipment Diamond File CMP-4-3641
 Field _____ Drilling Fluid Water Base Mud Date Report _____
 Province _____ Elevation _____ Analysts _____
 Location _____ Remarks _____

CORE ANALYSIS RESULTS

(Figures in parentheses refer to footnote remarks)

No.	Depth Feet	Ft. Rep.	Permeability Millidarcys			Perm. Ft.	Porosity Per Cent	Porosity Feet	Density		Visual Examination
			K _{mean}	K _{90°}	K _V				Bulk	Grain	
			Core #1			2100 - 2131	(Rec. 31.)	(7 boxes)			
--	2100.0 - 2131.0	31.0									Dense
			Core #2			2237 - 2268	(Rec. 31.)	(7 boxes)			
	2237.0 - 38.0	1.0									Not analyzed at clients request
1	38.0 - 39.0	1.0	0.17	0.18	<0.01	0.110	7.4	1.46	2.58	2.79	1 Sty
--	39.0 - 40.3	1.3									Not analyzed at clients request
2	40.3 - 41.4	1.1	0.37	3.31	<0.01	0.407	10.3	11.53	2.45	2.73	1 Sty APPRECIATED
--	41.4 - 43.3	1.9									Not analyzed at clients request
3	43.3 - 44.5	1.2	0.44	0.42	<0.01	0.528	8.3	7.96	2.51	2.74	1 Sty
--	44.5 - 45.5	1.0									Not analyzed at clients request
4	45.5 - 46.6	1.1	1.0	0.98	<0.01	1.10	9.8	10.78	2.42	2.68	1 Sty
--	46.6 - 47.8	1.2									Not analyzed at clients request
5	47.8 - 48.6	0.8	1.5	1.2	0.17	1.20	9.1	7.56	2.57	2.78	1 A
--	48.6 - 49.8	1.2									Not analyzed at clients request
6	49.8 - 50.8	1.0	3.5	3.3	0.14	3.50	13.7	13.70	2.33	2.70	1
--	50.8 - 52.5	1.7									Not analyzed at clients request
7	52.5 - 53.4	0.9	7.2	7.1	<0.01	6.48	13.7	12.33	2.47	2.80	1
	53.4 - 55.3	1.9									Not analyzed at clients request
8	55.3 - 56.3	1.0	0.04	0.02	<0.01	0.040	2.9	2.40	2.82	2.90	1 A Sty

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories - Canada Ltd. (all errors and omissions excepted); but Core Laboratories - Canada Ltd. and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

CORE ANALYSIS RESULTS

(Figures in parentheses refer to footnote remarks)

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CORE ANALYSIS REPORT
FOR
CENTRAL-DEL RIO OILS LIMITED
CDR CPOG MILLS LK A-70
WILDCAT
NORTHWEST TERRITORIES

CORE LABORATORIES - Canada Ltd.

Petroleum Reservoir Engineering

CALGARY - EDMONTON - REGINA

CORE LABORATORIES-CANADA LTD.
CALGARY ALBERTA

Company - CENTRAL-DEL RIO OILS LIMITED

Well - CDR CPOG MILLS LK A-10

Field - WILDCAT NORTHWEST TERRITORIES

Location - UNIT A, SECTION 70, T10 S 61° 10' N
117° 45' W

Date Report - APRIL 14, 1967

Formation - GRANITE WASH

D. Fluid - WATER BASE MUD

Analysis - FULL DIAMETER

Page - 1 of 2

File - CRP-4-3641

Analysts - MM SS

Core - DIAMOND

SAMPLE NUMBER	DEPTH REPRESENTED FEET	FOOT. REPR.	PERMEABILITY TO AIR HORIZONTAL)		PERM. X FEET	POROSITY		POROSITY X FEET	DENSITY		VISUAL EXAMINATION
			K MAX	K 90°		PER CENT	BULK		GRAIN		
CORE NO. 1 2100' - 2131' (REC. 31') (7 BOXES)											
-	2100.0-2131.0	31.0	-	-	-	-	-	-	-	-	Dense
CORE NO. 2 2237' - 2268' (REC. 31') (7 BOXES)											
-	2237.0-2238.0	1.0	-	-	-	-	-	-	-	-	Not analyzed at client's request.
1	2238.0-2239.0	1.0	0.19	0.18	<0.01	0.190	7.4	7.40	2.59	2.79	1. STY.
-	2239.0-2240.3	1.3	-	-	-	-	-	-	-	-	Not analyzed at client's request.
2	2240.3-2241.4	1.1	0.37	0.31	<0.01	0.407	10.3	11.33	2.45	2.73	1. STY. Brecciated
-	2241.4-2243.3	1.9	-	-	-	-	-	-	-	-	Not analyzed at client's request.
3	2243.3-2244.5	1.2	0.44	0.42	<0.01	0.528	8.3	9.96	2.51	2.74	1. STY.
-	2244.5-2245.5	1.0	-	-	-	-	-	-	-	-	Not analyzed at client's request.
4	2245.5-2246.6	1.1	1.0	0.98	<0.01	1.10	9.8	10.78	2.42	2.68	1. STY.
-	2246.6-2247.8	1.2	-	-	-	-	-	-	-	-	Not analyzed at client's request.
5	2247.8-2248.6	0.8	1.5	1.2	0.17	1.20	9.2	7.36	2.52	2.78	1. A.
-	2248.6-2249.8	1.2	-	-	-	-	-	-	-	-	Not analyzed at client's request.
6	2249.8-2250.8	1.0	3.5	3.3	0.14	3.50	13.7	13.70	2.33	2.70	1.
-	2250.8-2252.5	1.7	-	-	-	-	-	-	-	-	Not analyzed at client's request.

CORE LABORATORIES CANADA LTD.
CALGARY ALBERTA

CENTRAL-DEL RIO OILS LIMITED
COR OFOG MILLS LK A-70

PAGE # 2 of 2
FILE - CR-4-3641

SAMPLE NUMBER	DEPTH REPRESENTED FEET	FOOT, REPR.	PERMEABILITY TO AIR HORIZONTAL		PEPM, X FEET	POROSITY PER CENT	POROSITY X FEET	DENSITY	BULK GRAIN	VISUAL EXAMINATION
			K MAX	K 90						
CORE NO. 2 (Cont'd)										
7	2252.5-2253.4	0.9	7.2	7.1	<0.01	6.48	13.7	12.33	2.42	2.80
-	2253.4-2255.3	1.9	-	-	-	-	-	-	-	Not analyzed at client's request.
8	2255.3-2256.3	1.0	0.04	0.02	<0.01	0.040	2.9	2.90	2.82	2.90
-	2256.3-2257.4	1.1	-	-	-	-	-	-	-	Not analyzed at client's request.
9	2257.4-2258.3	0.9	1.3	1.1	<0.01	1.17	9.5	8.55	2.49	2.76
-	2258.3-2259.0	0.7	-	-	-	-	-	-	-	Not analyzed at client's request.
10	2259.0-2259.7	0.7	5.9	5.7	<0.01	4.13	10.9	7.63	2.47	2.77
-	2259.7-2268.0	8.3	-	-	-	-	-	-	-	Not analyzed at client's request.

I. - Intergranular; STY. - Stylolite; A. - Anhydrite;

W. H. file

Preliminary Copy

CORE LABORATORIES-CANADA LTD.
CALGARY ALBERTA

Water Analysis

File No. CBH-2-1307

Company Central-Oil Rio Oils Limited

Well Name CDR CPOG Chevron Mills Lake A-70

Sample No.

Formation Granite Wash

Depth 2330' - 2410'

61 09' 07. 50"N.L.

Location 117 56' 29. 60"W.L. Field Mills Lake area Province N.W.T.

Date Sampled 16 Mar. 67

Date Analyzed 27 Mar. 67

Analysts VC

Sampled from DST #2 top of rec.

Elevation

Recovery 40' mud

CONSTITUENTS

1. Total Solids 10608 mg/liter 2. PH 6.79 3. Sp. Gr. 1.0097 @ 60°F
4. Resistivity 1.009 ohm-meters @ 74 °F 5. Hydrogen Sulfide absent

MILLIGRAMS PER LITER

Na & K	Ca	Mg	Fe	Ba	Cl	HCO ₃	SO ₄	CO ₃	OH
2576	815	21	pres.	abs.	1299	1097	4800	-	-

MEO PER LITER

112.0	40.7	1.7			36.6	18.0	99.8	-	-
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Remarks:

ORDER NO. 161

CORE LABORATORIES-CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

EDMONTON CALGARY REGINA

WATER ANALYSIS

File CBH-2-1409Company Central-Del Rio Oils LimitedWell Name CDR CPOG Chevron Mills Lake A-70

Sample No. _____

Formation Keg RiverDepth 2230' - 2265'Location 61°09' 07.50" N Field Mills Lake AreaProvince Northwest Territories117°56' 29.50" WDate Sampled Mar 9, 1967Date Analyzed April 18, 1967Analyst W.V.Sampled From DST #1 (Top of Recovery)

By _____

Recovery 615' of Fluid

Elevation _____

Constituents:

1. Total Solids 22,764 mg/liter2. pH 6.833. Sp.Gr. 1.0207

@60°F.

4. Resistivity 0.321 Ohm-meters @ 73 °F5. H₂S absent

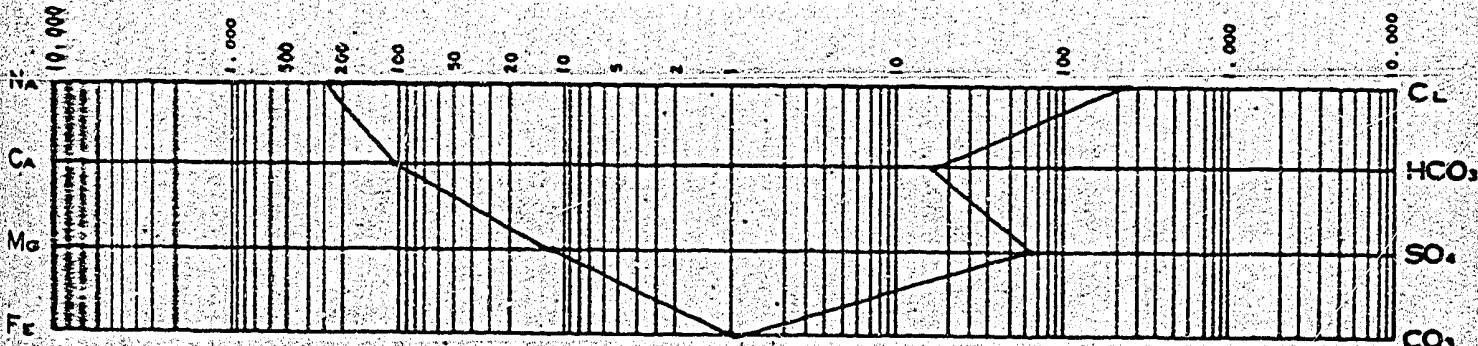
MILLIGRAMS PER LITER

Na & K	Ca	Mg	Fe	Ba		Cl	HCO ₃	SO ₄	CO ₃	OH	
5,918	2,106	149	abs	abs		10,256	1,076	3,259	-	-	

MEQ PER LITER

257.3	105.1	12.2	abs.	abs.		289.2	17.6	67.8	-	-	
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LOGARITHMIC PATTERN MEQ PER LITER



Will file

Preliminary Copy

CORE LABORATORIES-CANADA LTD.
CALGARY ALBERTA

Water Analysis

File No. CBH-2-1307

Company Central-Oil Rio Oils Limited

Well Name CDR CPOG Chevron Mills Lake A-70

Sample No.

Formation Granite Wash

Depth 2330' - 2410'

61 09'07. 50"N.L.

Location 117 55' 29. 60" W.L. Field Mills Lake area Province N.W.T.

Date Sampled 16 Mar. 67

Date Analyzed 27 Mar. 67

Analysts VC

Sampled from DST #2 top of rec.

Elevation

Recovery 40' mud

CONSTITUENTS

1. Total Solids 10608 mg/liter 2. PH 6.79 3. Sp. Gr. 1.0097 @ 60°F
4. Resistivity 1.009 ohm-meters @ 74 °F 5. Hydrogen Sulfide absent

MILLIGRAMS PER LITER

Na & K	Ca	Mg	Fe	Ba	Cl	HCO ₃	SO ₄	CO ₃	OH
2576	815	21	pres.	abs.	1299	1097	4800	-	-

MEQ PER LITER

112.0	40.7	1.7			36.6	18.0	99.8	-	-
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Remarks:

ORDER NO. 12-1



CORE LABORATORIES-CANADA LTD.
HYDROLOGICAL RESERVOIR ENGINEERING
EDMONTON CALGARY REGINA
WATER ANALYSIS



File CBH-2-1409

Company Central-Del Rio Oils Limited

Well Name CDR CPOG Chevron Mills Lake A-70

Sample No. _____

Formation Keg River

Depth 2230' - 2265'

Location 61°-09' 07.50" NL Field Mills Lake Area

Province Northwest Territories

117° 56' 29.50" WL

Date Sampled Mar 9, 1967

Date Analyzed April 18, 1967

Analyst W.V.

Sampled From DST #1 (Top of Recovery)

By _____

Recovery 615' of Fluid

Elevation _____

Constituents:

1. Total Solids 22,764 mg/liter 2. pH 6.83 3. Sp.Gr. 1.0207 @60°F.
4. Resistivity 0.321 Ohm-meters @ 73 °F 5. H₂S absent

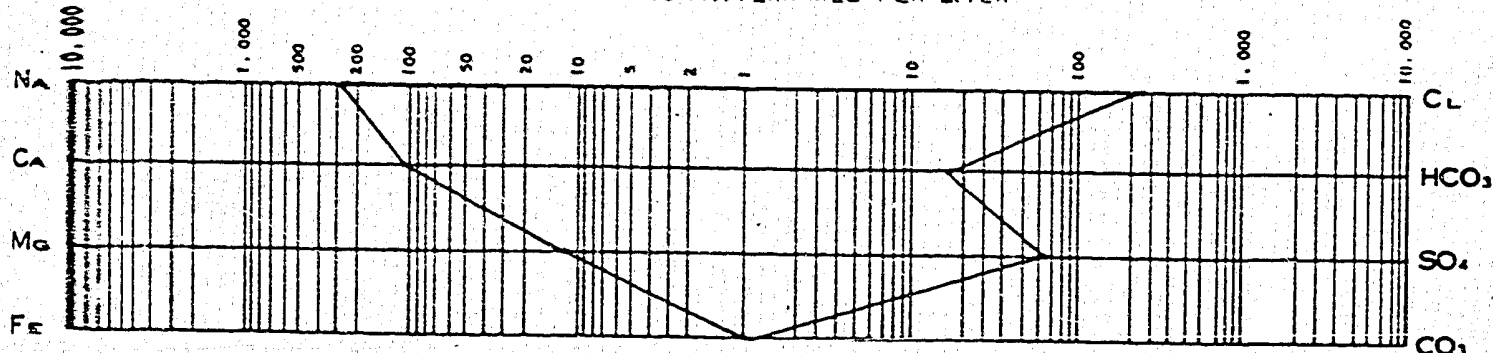
MILLIGRAMS PER LITER

Na & K	Ca	Mg	Fe	Ba	CL	HCO ₃	SO ₄	CO ₃	OH
5,918	2,106	149	abs	abs	10,256	1,076	3,259	-	-

MEQ PER LITER

257.3	105.1	12.2	abs.	abs.	289.2	17.6	67.8	-	-
-------	-------	------	------	------	-------	------	------	---	---

LOGARITHMIC PATTERN MEQ PER LITER





CORE LABORATORIES-CANADA LTD.
PETROLEUM RESERVOIR ENGINEERING
EDMONTON CALGARY REGINA
WATER ANALYSIS



File CBH-2-1409

Company Central-Del Rio Oils Limited

Well Name CDR CPOG Chevron Mills Lake A-70

Sample No. _____

Formation Keg River

Depth 2230' - 2265'

61° 09' 07.50" NL

Location 117° 56' 29.60" WL Field Mills Lake Area

Province Northwest Territories

Date Sampled March 9, 1967

Date Analyzed April 18, 1967

Analyst W.Y.

Sampled From DST #1 (Middle of Recovery)

By _____

Recovery 615% of Fluid

Elevation _____

Constituents:

1. Total Solids 157,573 mg/liter 2. pH 6.90 3. Sp.Gr. 1.1112 @60°F.
4. Resistivity 0.059 Ohm-meters @ 73 °F 5. H₂S Absent

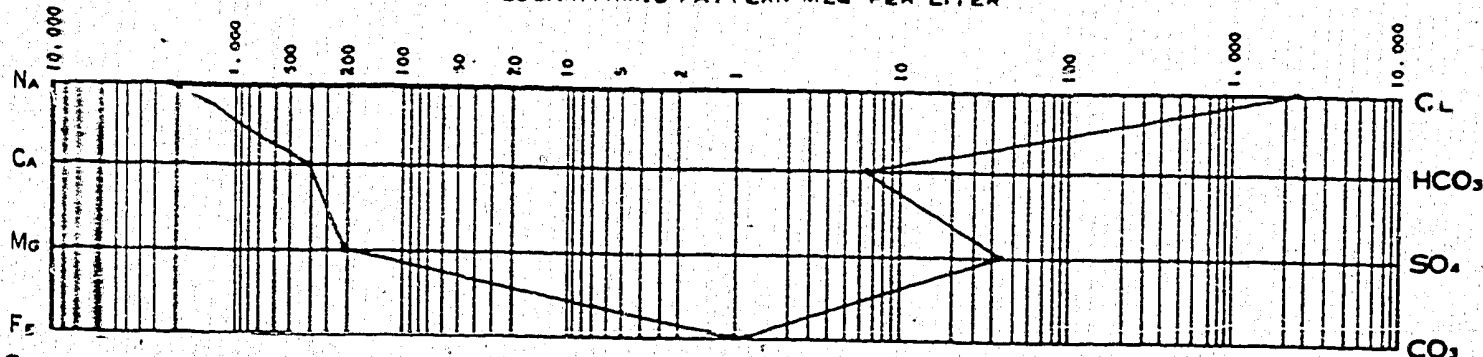
MILLIGRAMS PER LITER

Na & K	Ca	Mg	Fe	BA		CL	HCO ₃	SO ₄	CO ₃	OH	
49,288	8,032	2,446	abs.	abs.		95,376	395	2,136	-	-	

MEQ PER LITER

2,138.6	400.8	201.1	abs.	abs.		2,689.6	6.5	44.4	-	-	
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LOGARITHMIC PATTERN MEQ PER LITER





CORE LABORATORIES-CANADA LTD.
PETROLEUM RESERVUOIR ENGINEERING
EDMONTON CALGARY REGINA
WATER ANALYSIS



File CBH-2-1409

Company Central-Oil Rio Oils Limited

Well Name CDR CPOG Chevron Mills Lake A-70

Sample No. _____

Formation Keg River

Depth 2230' - 2265'

Location 61° 09' 07.50" NL

Field Mills Lake Area

Province Northwest Territories

117° 56' 29.60" WL

Date Sampled Mar 9, 1967

Date Analyzed April 18, 1967

Analyst W.V.

Sampled From DST #1 (Top of Tool)

By _____

Recovery 615' of Fluid

Elevation _____

Constituents:

1. Total Solids 163,248 mg/liter

2. pH 5.98

3. Sp.Gr. 1.1163

@60°F.

4. Resistivity 0.059 Ohm-meters @ 73 °F

5. H₂S absent

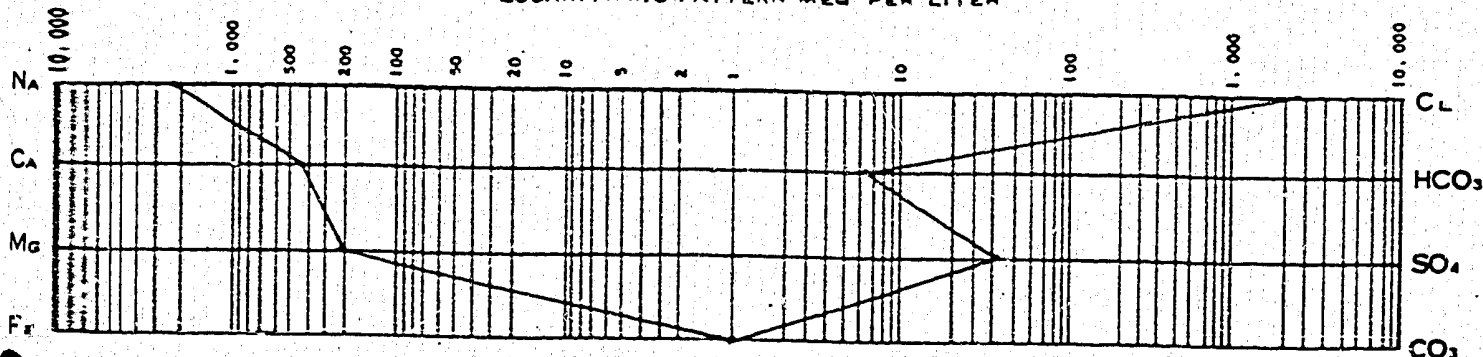
MILLIGRAMS PER LITER

Na & K	Ca	Mg	Fe	Ba	CL	HCO ₃	SO ₄	CO ₃	OH
50,973	8,361	2,511	abs.	abs.	98,966	390	2,047	-	-

MEQ PER LITER

2,216.2	417.2	206.4	abs.	abs.	2,790.8	6.4	42.6	-	-
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LOGARITHMIC PATTERN MEQ PER LITER



Form with multiple sections for drilling logs, including fields for hole number, depth, time, and crew details. The form is divided into three main horizontal sections, each with a vertical label on the left: 'TOUR 1', 'TOUR 2', and 'TOUR 3'. Each section contains a 'MUD' section, a 'PUMP' section, a 'SURVEY' section, and a 'CREW TIME SUMMARY' section. The 'MUD' section includes fields for mud weight, viscosity, and gel. The 'PUMP' section includes fields for pump pressure, depth, and RPM. The 'SURVEY' section includes fields for weather, temperature, and wind velocity. The 'CREW TIME SUMMARY' section includes fields for crew members and their respective times. The form also includes a 'REMARKS' section on the right side of each section, and a 'TOTAL' section at the bottom of each section. The form is filled with handwritten data, including hole numbers, depths, times, and crew names. The 'TOUR 1' section covers the time from 12:00 A.M. to 4:00 A.M. The 'TOUR 2' section covers the time from 8:00 A.M. to 12:00 P.M. The 'TOUR 3' section covers the time from 4:00 P.M. to 8:00 P.M. The form is a detailed record of drilling operations, including equipment used, materials consumed, and crew performance.

TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER i/c _____
TOTAL COMPANY TIME _____ HRS. APPROVED BY _____

TOTAL CONTRACT TIME _____ HRS. TOOL/PUSHER OR DRILLER 1/2 _____

TOTAL COMPANY TIME _____ HRS. APPROVED BY _____

LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER
AF:	AT:										
T O U R											
BIT RECORD											
MUD 12M.N. 2A.M. 4A.M. 6A.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 8A.M. 10A.M. 12 N.H. 2 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 77 77											
W.L. F.C. P.H.											
ADDITIVES: WATER GALS.											
1. 2. 3.											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HELPER											
HELPER											
TOTAL											
INJURIES AND REMARKS:											
T O U R											
BIT RECORD											
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.											
PUMP PUMP SURVEY											
WT. 76 77 77 77											
VISC. 77 77 77 77											
GEL. 77 77 7											

TOUR 1	LT: AF: LF: AT: HOLE NO. FROM TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD ON W. LOST DRILL TIME WAIT ON WATER	STRATIGRAPHIC LOG / PUMP TEST	CLASS	REMARKS	START	STOP	INTERVAL
		FROM / TIME TO / TIME RATE IN 16 PM DESCRIPTION DEPTH TO WATER IN FT.					
BIT RECORD	% LEFT COND. NO. SIZE TYPE SER. NO. WEIGHT RPM FT. DRILLED REAMED HRS. FORM % LEFT COND.						
MUD	12 MN. 2A.M. 4A.M. 6A.M.	PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH					
WT. VISC. GEL. W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. GENERAL		MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER MIDN. 4A.M. DRILL W. TRUCK MOB. PUMP TEMPERATURE: WIND VELOCITY: RAIN, SNOW, FOG, ETC.					
CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS						
DRILLER HELPER HELPER TOTAL							
INJURIES AND REMARKS:							
TOUR 2	LT: AF: LF: AT: HOLE NO. FROM TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD ON W. LOST DRILL TIME WAIT ON WATER						
BIT RECORD	% LEFT COND. NO. SIZE TYPE SER. NO. WEIGHT RPM FT. DRILLED REAMED HRS. FORM % LEFT COND.						
MUD	8A.M. 10A.M. 12N.H. 2P.M.	PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH					
WT. VISC. GEL. W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. GENERAL		MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER 8A.M. NOON DRILL W. TRUCK MOB. PUMP TEMPERATURE: WIND VELOCITY: RAIN, SNOW, FOG, ETC.					
CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS						
DRILLER HELPER HELPER TOTAL							
INJURIES AND REMARKS:							
TOUR 3	LT: AF: LF: AT: HOLE NO. FROM TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD ON W. LOST DRILL TIME WAIT ON WATER						
BIT RECORD	% LEFT COND. NO. SIZE TYPE SER. NO. WEIGHT RPM FT. DRILLED REAMED HRS. FORM % LEFT COND.						
MUD	4P.M. 6P.M. 8P.M. 10P.M.	PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH					
WT. VISC. GEL. W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. GENERAL		MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER 4P.M. 8A.M. DRILL W. TRUCK MOB. PUMP TEMPERATURE: WIND VELOCITY: RAIN, SNOW, FOG, ETC.					
CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS						
DRILLER HELPER HELPER TOTAL							
INJURIES AND REMARKS:							
TOUR 4	LT: AF: LF: AT: HOLE NO. FROM TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD ON W. LOST DRILL TIME WAIT ON WATER						
BIT RECORD	% LEFT COND. NO. SIZE TYPE SER. NO. WEIGHT RPM FT. DRILLED REAMED HRS. FORM % LEFT COND.						
MUD	4P.M. 6P.M. 8P.M. 10P.M.	PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH					
WT. VISC. GEL. W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. GENERAL		MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER 4P.M. 8A.M. DRILL W. TRUCK MOB. PUMP TEMPERATURE: WIND VELOCITY: RAIN, SNOW, FOG, ETC.					
CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS						
DRILLER HELPER HELPER TOTAL							
INJURIES AND REMARKS:							
TOUR 5	LT: AF: LF: AT: HOLE NO. FROM TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD ON W. LOST DRILL TIME WAIT ON WATER						
BIT RECORD	% LEFT COND. NO. SIZE TYPE SER. NO. WEIGHT RPM FT. DRILLED REAMED HRS. FORM % LEFT COND.						
MUD	4P.M. 6P.M. 8P.M. 10P.M.	PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH					
WT. VISC. GEL. W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. GENERAL		MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER 4P.M. 8A.M. DRILL W. TRUCK MOB. PUMP TEMPERATURE: WIND VELOCITY: RAIN, SNOW, FOG, ETC.					
CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS						
DRILLER HELPER HELPER TOTAL							
INJURIES AND REMARKS:							
TOUR 6	LT: AF: LF: AT: HOLE NO. FROM TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD ON W. LOST DRILL TIME WAIT ON WATER						
BIT RECORD	% LEFT COND. NO. SIZE TYPE SER. NO. WEIGHT RPM FT. DRILLED REAMED HRS. FORM % LEFT COND.						
MUD	4P.M. 6P.M. 8P.M. 10P.M.	PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH					
WT. VISC. GEL. W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. GENERAL		MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER 4P.M. 8A.M. DRILL W. TRUCK MOB. PUMP TEMPERATURE: WIND VELOCITY: RAIN, SNOW, FOG, ETC.					
CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS						
DRILLER HELPER HELPER TOTAL							
INJURIES AND REMARKS:							
TOUR 7	LT: AF: LF: AT: HOLE NO. FROM TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD ON W. LOST DRILL TIME WAIT ON WATER						
BIT RECORD	% LEFT COND. NO. SIZE TYPE SER. NO. WEIGHT RPM FT. DRILLED REAMED HRS. FORM % LEFT COND.						
MUD	4P.M. 6P.M. 8P.M. 10P.M.	PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH					
WT. VISC. GEL. W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. GENERAL		MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER 4P.M. 8A.M. DRILL W. TRUCK MOB. PUMP TEMPERATURE: WIND VELOCITY: RAIN, SNOW, FOG, ETC.					
CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS						
DRILLER HELPER HELPER TOTAL							
INJURIES AND REMARKS:							
TOUR 8	LT: AF: LF: AT: HOLE NO. FROM TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD ON W. LOST DRILL TIME WAIT ON WATER						
BIT RECORD	% LEFT COND. NO. SIZE TYPE SER. NO. WEIGHT RPM FT. DRILLED REAMED HRS. FORM % LEFT COND.						
MUD	4P.M. 6P.M. 8P.M. 10P.M.	PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH					
WT. VISC. GEL. W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. GENERAL		MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER 4P.M. 8A.M. DRILL W.					

DATE

TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER I.C. W. J. Kerner
TOTAL COMPANY TIME _____ HRS. APPROVED BY Ed. M. McGinnis

DATE 10A 11/6/7

TOUR 1	MIDN.	BIT RECORD										PUMP										SURVEY									
		MUD										PUMP										SURVEY									
TOUR 2	8 A.M.	BIT RECORD										PUMP										SURVEY									
		MUD										PUMP										SURVEY									
TOUR 3	4 P.M.	BIT RECORD										PUMP										SURVEY									
		MUD										PUMP										SURVEY									
TOUR 4	MIDN.	BIT RECORD										PUMP										SURVEY									
		MUD										PUMP										SURVEY									

RIG. NO. 11 LOCATION Indian well 6-TN 240 DATE Nov 1973 LOCATION Indian well 6-TN 240 DATE Nov 1973

TOUR 1	MIDN.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER		
		AF:	AT:	2	2250	2252				72					
TOUR 2	8 A.M.	% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.
				6	6 1/4	YTL	E764H	14	145	72		8			IN
TOUR 3	4 P.M.	MUD	12MN.	2A.M.	4 A.M.	6 A.M.	220	PUMP	PUMP	SURVEY					
		WT.	84	7.6	8.8	5.5	225	60	2280	225	60	2340	2350	1 1/2	
TOUR 4	MIDN.	VISC.	56	57	58	57	61	25	60	2280	225	60	2340	2350	1 1/2
		GEL													
TOUR 5	8 A.M.	W.L.	6.6	F.C.	232	P.H.	8.5	DRILL							
		ADDITIVES: WATER	6.6	7.7											
TOUR 6	4 P.M.	1.	W. TRUCK												
		2.	MOB. PUMP												
TOUR 7	MIDN.	3.	GENERAL												
		CREW TIME SUMMARY													
TOUR 8	8 A.M.	DRILLER	Win Forsyth												
		HELPER	E.O. BROWN												
TOUR 9	4 P.M.	HELPER	BARRELL STEWART												
		TOTAL	ARNOLD CARROLL												
TOUR 10	MIDN.	INJURIES AND REMARKS:													
TOUR 11	8 A.M.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER		
		AF:	AT:	2	2300	2341				29					
TOUR 12	4 P.M.	% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.
				6	6 1/4	YTL	E764H	14	145	101		12			IN
TOUR 13	MIDN.	MUD	8 A.M.	10 A.M.	12 N.M.	2 P.M.	200	PUMP	PUMP	SURVEY					
		WT.	90	11	12	8.8	200	60	2355						
TOUR 14	8 A.M.	VISC.	56	57	58	57	61	25	60	2280	225	60	2340	2350	1 1/2
		GEL													
TOUR 15	4 P.M.	W.L.	3.5	F.C.	232	P.H.	8.5	DRILL							
		ADDITIVES: WATER	3.5	4.6											
TOUR 16	MIDN.	1.	W. TRUCK												
		2.	MOB. PUMP												
TOUR 17	8 A.M.	3.	GENERAL												
		CREW TIME SUMMARY													
TOUR 18	4 P.M.	DRILLER	Win Forsyth												
		HELPER	E.O. BROWN												
TOUR 19	MIDN.	HELPER	BARRELL STEWART												
		TOTAL	ARNOLD CARROLL												
TOUR 20	8 A.M.	INJURIES AND REMARKS:													
TOUR 21	4 P.M.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER		
		AF:	AT:	2	2301	2388				1					
TOUR 22	MIDN.	% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.
				6	6 1/4	YTL	E764H	14	145	103		156	W35H	8-8-04	IN
TOUR 23	8 A.M.	MUD	4 P.M.	6 P.M.	8 P										

RIG NO. 17 LOCATION MULLASKEWANT 170 CDR DATE MAR 9/67 LOCATION MULLASKEWANT 170 DATE MAR 9/67

T O U R	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER	STRATIGRAPHIC LOG	PUMP TEST	CLASS	REMARKS	TIME			
																	START	STOP	INTERVAL	
1	AF:	AT:	2267														TESTING	12:00	5:10	5:10
																	HOIST JACKED	5:20		
																	WITFLUID AT 611 FT			
																	FROM TESTING TUBE	7:45	2:41	
																	REACHING SURFACE TUBE	7:45	2:41	
2	AF:	AT:	2267																	
3	AF:	AT:	2267																	

INJURIES AND REMARKS: UNLOAD HOIST NEW LEASE # 1700 DUE AT 11:00
HALL TO NEW LEASE # 1700

DRILLER: Wm Forsyth
HELPER: E. G. Hammond
HELPER: G. B. Stewart
TOTAL: 8

COMPANY TIME: _____ CONTR TIME: _____

TOTAL CONTRACT TIME: _____ HRS. TOOLPUSHER OR DRILLER 1/2
TOTAL COMPANY TIME: _____ HRS. APPROVED BY: _____

RIG. NO. 17 LOCATION MILLS ABE A-705 DR. SPE. CHEVRON W.T. DATE MAR 3/67 LOCATION MILLS ABE A-705 DATE MAR 3/67

T O U R	MIDN.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER	STRATIGRAPHIC LOG		PUMP TEST		CLASS	REMARKS	TIME					
														FROM FT.	TO FT.	DEPT. IN 16PM	DESCRIPTION			DEPTH TO WATER IN FT.	START	STOP	INTERVAL		
1	8 A.M.	AF:	AT:	2237	40					3															
		% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.										
		MUD				12MN.	2A.M.	4A.M.	8A.M.	PUMP				PUMP				SURVEY							
		WT.					2.5	PRESS				RPM	DEPTH	PRESS	RPM	DEPTH	AT	DEG.	E LOG TO DEPTH						
		VISC.					63					MOTOR HOURS	FUEL GALS.	NEXT OIL CHANGE AT	WEATHER				MIDN.	4A.M.					
		GEL.						DRILL				TEMPERATURE:				WIND VELOCITY:									
		W. L.	4.2				F.C.	P.H.	W. TRUCK				RAIN, SNOW, FOG, ETC.												
		ADDITIVES: WATER					GALS.	MOB. PUMP																	
		1.						GENERAL:																	
		2.																							
2	8 A.M.	AF:	AT:	2240	2248					26															
		% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.										
		MUD				8A.M.	10A.M.	12N.H.	2P.M.	PUMP				PUMP				SURVEY							
		WT.					8.2	PRESS				RPM	DEPTH	PRESS	RPM	DEPTH	AT	DEG.	E LOG TO DEPTH						
		VISC.					74					MOTOR HOURS	FUEL GALS.	NEXT OIL CHANGE AT	WEATHER				8A.M.	NOON					
		GEL.						DRILL				TEMPERATURE:				WIND VELOCITY:									
		W. L.	4.3				F.C.	P.H.	W. TRUCK				RAIN, SNOW, FOG, ETC.												
		ADDITIVES: WATER					GALS.	MOB. PUMP																	
		1.						GENERAL:																	
		2.																							
3	4 P.M.	AF:	AT:																						
		% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.										
		MUD				4P.M.	6P.M.	8P.M.	10P.M.	PUMP				PUMP				SURVEY							
		WT.						PRESS				RPM	DEPTH	PRESS	RPM	DEPTH	AT	DEG.	E LOG TO DEPTH						
		VISC.										MOTOR HOURS	FUEL GALS.	NEXT OIL CHANGE AT	WEATHER				4P.M.	8A.M.					
		GEL.						DRILL				TEMPERATURE:				WIND VELOCITY:									
		W. L.					F.C.	P.H.	W. TRUCK				RAIN, SNOW, FOG, ETC.												
		ADDITIVES: WATER					GALS.	MOB. PUMP																	
		1.						GENERAL:																	
		2.																							
4	MIDN.	AF:	AT:																						
		% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.										
		MUD				4P.M.	6P.M.	8P.M.	10P.M.	PUMP				PUMP				SURVEY							
		WT.						PRESS				RPM	DEPTH	PRESS	RPM	DEPTH	AT	DEG.	E LOG TO DEPTH						
		VISC.										MOTOR HOURS	FUEL GALS.	NEXT OIL CHANGE AT	WEATHER				4P.M.	8A.M.					
		GEL.						DRILL				TEMPERATURE:				WIND VELOCITY:									
		W. L.					F.C.	P.H.	W. TRUCK				RAIN, SNOW, FOG, ETC.												
		ADDITIVES: WATER					GALS.	MOB. PUMP																	
		1.						GENERAL:																	
		2.																							

RIG NO. 17		LOCATION		DATE 7/16/74		LOCATION		DATE											
1 MIDN. TO 8 A.M.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER	STRATIGRAPHIC LOG / PUMP TEST		CLASS	REMARKS	TIME		
	AF:	AT:												FROM FT. / TIME	TO FT. / RATE IN 16 PM	DESCRIPTION / DEPTH TO WATER IN FT.	START	STOP	INTERVAL
	% LEFT COND		NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT COND.						
	MUD		12MN.	2A.M.	4 A.M.	6 A.M.	PUMP		PUMP		SURVEY								
	WT.						PRESS	RPM	DEPTH	PRESS	RPM	DEPTH	AT	DEG.	LOG TO DEPTH				
	VISC.																		
	GEL.																		
	W.L. 2-1/2 F.C. 7-1/2 P.H. 6-1/2		DRILL		W. TRUCK		WEATHER		MIDN. 4 A.M.										
	ADDITIVES: WATER		GALS.		MOB. PUMP		TEMPERATURE:		WIND VELOCITY:										
	1. 25% WATER						RAIN, SNOW, FOG, ETC.												
2. 10% WATER																			
3. 10% WATER																			
CREW TIME SUMMARY		DRILLING AND OTHER RIG OPER.		PUMPTEST		REPAIRS & MAINTENANCE		RIG UP OR TEAR DOWN		LOST TIME TRAVEL TIME		TOTAL HOURS							
DRILLER J. M. CORRY												8							
HELPER E. D. BROWN												16							
HELPER G. M. BROWN												16							
TOTAL												34							
INJURIES AND REMARKS:																			
2 8 A.M. TO 4 P.M.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER	STRATIGRAPHIC LOG / PUMP TEST		CLASS	REMARKS	TIME		
	AF:	AT:												FROM FT. / TIME	TO FT. / RATE IN 16 PM	DESCRIPTION / DEPTH TO WATER IN FT.	START	STOP	INTERVAL
	% LEFT COND		NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT COND.						
	MUD		8 A.M.	10 A.M.	12 N.	2 P.M.	PUMP		PUMP		SURVEY								
	WT.						PRESS	RPM	DEPTH	PRESS	RPM	DEPTH	AT	DEG.	LOG TO DEPTH				
	VISC.																		
	GEL.																		
	W.L. 2-1/2 F.C. 7-1/2 P.H. 6-1/2		DRILL		W. TRUCK		WEATHER		8 A.M. NOON										
	ADDITIVES: WATER		GALS.		MOB. PUMP		TEMPERATURE:		WIND VELOCITY:										
	1. 25% WATER						RAIN, SNOW, FOG, ETC.												
2. 10% WATER																			
3. 10% WATER																			
CREW TIME SUMMARY		DRILLING AND OTHER RIG OPER.		PUMPTEST		REPAIRS & MAINTENANCE		RIG UP OR TEAR DOWN		LOST TIME TRAVEL TIME		TOTAL HOURS							
DRILLER J. M. CORRY												8							
HELPER E. D. BROWN												16							
HELPER G. M. BROWN												16							
TOTAL												34							
INJURIES AND REMARKS:																			
3 4 P.M. TO MIDN.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER	STRATIGRAPHIC LOG / PUMP TEST		CLASS	REMARKS	TIME		
	AF:	AT:												FROM FT. / TIME	TO FT. / RATE IN 16 PM	DESCRIPTION / DEPTH TO WATER IN FT.	START	STOP	INTERVAL
	% LEFT COND		NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT COND.						
	MUD		4 P.M.	6 P.M.	8 P.M.	10 P.M.	PUMP		PUMP		SURVEY								
	WT.						PRESS	RPM	DEPTH	PRESS	RPM	DEPTH	AT	DEG.	LOG TO DEPTH				
	VISC.																		
	GEL.																		
	W.L. 2-1/2 F.C. 7-1/2 P.H. 6-1/2		DRILL		W. TRUCK		WEATHER		4 P.M. 8 A.M.										
	ADDITIVES: WATER		GALS.		MOB. PUMP		TEMPERATURE:		WIND VELOCITY:										
	1. 25% WATER						RAIN, SNOW, FOG, ETC.												
2. 10% WATER																			
3. 10% WATER																			
CREW TIME SUMMARY		DRILLING AND OTHER RIG OPER.		PUMPTEST		REPAIRS & MAINTENANCE		RIG UP OR TEAR DOWN		LOST TIME TRAVEL TIME		TOTAL HOURS							
DRILLER J. M. CORRY												8							
HELPER E. D. BROWN												16							
HELPER G. M. BROWN												16							
TOTAL												34							
INJURIES AND REMARKS:																			
TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER 1/2																			
TOTAL COMPANY TIME _____ HRS. APPROVED BY _____																			

TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER i/c _____
TOTAL COMPANY TIME _____ HRS. APPROVED BY: John Sullivan

RIG NO. 17

LOCATION MILLIS LAKE #70 N.W.T. C.P.R. SPOKESMAN DATE MAR 5/67

LOCATION MILLIS LAKE #70 DATE MAR 5/67

TOUR	MIDN.	T	O	8 A.M.	4 P.M.	MIDN.	HOLE NO. 2204 2214														STRATIGRAPHIC LOG		PUMP TEST		CLASS	REMARKS	TIME										
							LT.	LF.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER	FROM	TO	RATE IN 16 PM	DEPTH TO WATER IN FT.	START	STOP	INTERVAL													
1		T	O	8 A.M.			MUD 12 MN. 2 A.M. 4 A.M. 6 A.M.														PUMP		PUMP		SURVEY		DRILLER 6' 1/4 HOLE RIG 12' 1/4 HOLE DRILL 6' 1/4 HOLE 3-FT. 1/4 HOLE		12.00	12.15	1/4						
							WT. 9.4 7.5 4.5														PRESS 200 45		DEPTH 2214		AT 4							DEG. 4					
							VISC. 53 52 52														MOTOR HOURS		FUEL GALS.		NEXT OIL CHANGE AT							WEATHER		MIDN. 4 A.M.			
							GEL. 4.4 F.C. 7.2 P.H. 2.3														DRILL				TEMPERATURE: 0												
							W.L. 4.4 F.C. 7.2 P.H. 2.3														W. TRUCK				WIND VELOCITY: 11.6 12.5												
							ADDITIVES: WATER														MOB. PUMP				RAIN, SNOW, FOG, ETC. CLEAR												
							GENERAL:																														
							CREW TIME SUMMARY														DRILLING AND OTHER RIG OPER.		PUMPTST		REPAIRS & MAINTENANCE							RIG UP OR TEAR DOWN		LOST TIME TRAVEL TIME		TOTAL HOURS	
							DRILLER W. F. FURSYTH																											8			
							HELPER E. D. BRUMMOND																											8			
HELPER G. B. STEWART																						8															
TOTAL																						8															
INJURIES AND REMARKS:																																					
2		T	O	8 A.M.			MUD 8 A.M. 10 A.M. 12 N.H. 2 P.M.														PUMP		PUMP		SURVEY		5-DR. IF 11-DR. IF 51-3' ALON 11.6 12.5										
							WT. 7.4 4.5 2.3														PRESS 45		DEPTH 2235		AT 4							DEG. 4					
							VISC. 53 52 52														MOTOR HOURS		FUEL GALS.		NEXT OIL CHANGE AT							WEATHER		8 A.M. NOON			
							GEL. 4.4 F.C. 7.2 P.H. 2.3														DRILL				TEMPERATURE: 12.0												
							W.L. 4.4 F.C. 7.2 P.H. 2.3														W. TRUCK				WIND VELOCITY: 11.6 12.5												
							ADDITIVES: WATER														MOB. PUMP				RAIN, SNOW, FOG, ETC. CLEAR												
							GENERAL:																														
							CREW TIME SUMMARY														DRILLING AND OTHER RIG OPER.		PUMPTST		REPAIRS & MAINTENANCE							RIG UP OR TEAR DOWN		LOST TIME TRAVEL TIME		TOTAL HOURS	
							DRILLER W. F. FURSYTH																											8			
							HELPER E. D. BRUMMOND																											8			
HELPER G. B. STEWART																						8															
TOTAL																						8															
INJURIES AND REMARKS:																																					
3		T	O	4 P.M.			MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M.														PUMP		PUMP		SURVEY		REMAIN 3RD SINGLE 190 FROM BOTTOM RAN 12 NEXT SINGLE WITH 20" REMAIN 6. POT KEY 05 THIRD SINGLE TO LEAN IN. PICKED OUT 05 SLIPS STUCK 8.2 50' OFF BOTTOM REMAIN 6.5 0.2 0.6 LEVEL										
							WT. 9.4 7.5 4.5														PRESS 200 45		DEPTH 2214		AT 4							DEG. 4					
							VISC. 53 52 52														MOTOR HOURS		FUEL GALS.		NEXT OIL CHANGE AT							WEATHER		4 P.M. 8 A.M.			
							GEL. 4.4 F.C. 7.2 P.H. 2.3														DRILL				TEMPERATURE: 0												
							W.L. 4.4 F.C. 7.2 P.H. 2.3														W. TRUCK				WIND VELOCITY: 11.6 12.5												
							ADDITIVES: WATER														MOB. PUMP				RAIN, SNOW, FOG, ETC. CLEAR												
							GENERAL:																														
							CREW TIME SUMMARY														DRILLING AND OTHER RIG OPER.		PUMPTST		REPAIRS & MAINTENANCE							RIG UP OR TEAR DOWN		LOST TIME TRAVEL TIME		TOTAL HOURS	
							DRILLER W. F. FURSYTH																											8			
							HELPER E. D. BRUMMOND																											8			
HELPER G. B. STEWART																						8															
TOTAL																						8															
INJURIES AND REMARKS:																																					

TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER 1/c _____
TOTAL COMPANY TIME _____ HRS. APPROVED BY _____

TOUR 1	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER		
	AF:	AT:	1920	1840				120						
MIDN.	% LEFT	COND.	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.
	3	64	DTG	44250	14	162	121	9						
TOUR 2	MUD	12MN.	2A.M.	4A.M.	6A.M.	PUMP	PUMP	SURVEY						
	WT.	7.1	1	7.7	1.8	280	60	1125	350	60	2010			
8 A.M.	VISC.	4.1	1	7.1	7.2									
	GEL													
TOUR 3	W.L.	5.9	F.C.		P.H.	DRILL								
	ADDITIVES: WATER					W. TRUCK								
8 A.M.	1.					MOB. PUMP								
	2.					GENERAL								
TOUR 4	CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER.	PUMPTST	REPAIRS & MAINTENANCE	RIG UP OR TEAR DOWN	LOST TIME TRAVEL TIME	TOTAL HOURS							
	DRILLER	KEV. BARNARD					8							
8 A.M.	HELPER	ED. PART					2							
	HELPER	CHARLIE HARRIS					1							
TOUR 5	TOTAL						11							
	INJURIES AND REMARKS:													
TOUR 6	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER		
	AF:	AT:	2040	2100				60						
MIDN.	% LEFT	COND.	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.
	2	64	DTG	44250	14	162	241	124						
TOUR 7	MUD	8 A.M.	10A.M.	12 N.H.	2 P.M.	PUMP	PUMP	SURVEY						
	WT.	9.8	9.1	9.4	9.2	3	64	225	47	5070	2100	140		
8 A.M.	VISC.	7.7	5.0	6.7	6.2									
	GEL													
TOUR 8	W.L.	5.8	F.C.	7.2	P.H.	DRILL								
	ADDITIVES: WATER					W. TRUCK								
4 P.M.	1.					MOB. PUMP								
	2.					GENERAL								
TOUR 9	CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER.	PUMPTST	REPAIRS & MAINTENANCE	RIG UP OR TEAR DOWN	LOST TIME TRAVEL TIME	TOTAL HOURS							
	DRILLER	W. FORSYTH					8							
8 A.M.	HELPER	ED. PART					2							
	HELPER	GARRETT STEWART					1							
TOUR 10	TOTAL						11							
	INJURIES AND REMARKS:													
TOUR 11	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER		
	AF:	AT:	2100	2100										
MIDN.	% LEFT	COND.	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM	% LEFT	COND.
	4	64	DTG	44250	14	162	172							
TOUR 12	MUD	4 P.M.	6 P.M.	8 P.M.	10 P.M.	PUMP	PUMP	SURVEY						
	WT.													
8 A.M.	VISC.													
	GEL													
TOUR 13	W.L.		F.C.		P.H.	DRILL								
	ADDITIVES: WATER					W. TRUCK								
4 P.M.	1.					MOB. PUMP								
	2.					GENERAL								
TOUR 14	CREW TIME SUMMARY	DRILLING AND OTHER RIG OPER.	PUMPTST	REPAIRS & MAINTENANCE	RIG UP OR TEAR DOWN	LOST TIME TRAVEL TIME	TOTAL HOURS							

TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER i, c _____
TOTAL COMPANY TIME _____ HRS. APPROVED BY: W. B. Williams

RIG. NO. 17

LOCATION MILLS LAKE #20

DATE MARCH 15/57

LOCATION

DATE 2/20/57

LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF	LOST DRILL TIME WAIT ON WATER
AF:	AT:	1092	1236					144			
% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM
2	6 1/4	DT	38556	12	235	144	2 1/4				
MUD 12MN. 2A.M. 4 A.M. 6 A.M. PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH											
W.T. 7.4 9.5 VISC. 33 32 GEL. 8 MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER MIDN. 4 A.M.											
W.L. F.C. P.H. W. TRUCK MOB. PUMP GENERAL											
ADDITIVES: WATER 2 Leads. GALS. 1. 2. 3.											
CREW TIME SUMMARY DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS											
DRILLER KEN BRENNAN											
HELPER ED PRATT											
HELPER CHARLIE HOSKINS											
TOTAL DAVID GREGG											
INJURIES AND REMARKS:											

LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF	LOST DRILL TIME WAIT ON WATER
AF:	AT:	1236									
% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM
2	6 1/4	DT	38556								
MUD 8 A.M. 10 A.M. 12 N.H. 2 P.M. PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH											
W.T. VISC. GEL. 8 A.M. NOON											
W.L. F.C. P.H. W. TRUCK MOB. PUMP GENERAL											
ADDITIVES: WATER GALS. 1. 2. 3.											
CREW TIME SUMMARY DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS											
DRILLER Wm FORSYTH											
HELPER ED BRIDGEMAN											
HELPER DARRELL STEWART											
TOTAL ARNOLD COCHRANE											
INJURIES AND REMARKS:											

LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF	LOST DRILL TIME WAIT ON WATER
AF:	AT:	1236	1427					191			
% LEFT	COND	NO.	SIZE	TYPE	SER. NO.	WEIGHT	RPM	FT. DRILLED	REAMED	HRS.	FORM
2	6 1/4	DT	38556	14M	170	335					
MUD 4 P.M. 6 P.M. 8 P.M. 10 P.M. PUMP PRESS RPM DEPTH PRESS RPM DEPTH AT DEG. LOG TO DEPTH											
W.T. 100 7.5 9.5 VISC. 33 32 30 32 225 65 1250 205 65 1125 1255 0											
GEL. 22 MOTOR HOURS FUEL GALS. NEXT OIL CHANGE AT WEATHER 4 P.M. 8 P.M.											
W.L. F.C. P.H. W. TRUCK MOB. PUMP GENERAL											
ADDITIVES: WATER GALS. 1. 2. 3.											
CREW TIME SUMMARY DRILLING AND OTHER RIG OPER. PUMPTST REPAIRS & MAINTENANCE RIG UP OR TEAR DOWN LOST TIME TRAVEL TIME TOTAL HOURS											
DRILLER J. J. J. J.											
HELPER J. J. J. J.											
HELPER J. J. J. J.											
TOTAL J. J. J. J.											
INJURIES AND REMARKS:											

STRATIGRAPHIC LOG	PUMP TEST
FROM FT. / TIME	TO FT. / RATE IN 16 P.M.
DESCRIPTION	DEPTH TO WATER IN FT.
Kelly up 21 ft	
500 I.F.	
11 FLEX I.F.	
22 DRILL PIPE	

CLASS	REMARKS	TIME
	500 I.F.	
	11 FLEX I.F.	
	233/1.0 P	
	21 FT upon Kelly	

CLASS	REMARKS	TIME
	500 I.F.	
	11-3/4 I.F.	
	24-33 A.I.O.H	
	20- upon Kelly	

CLASS	REMARKS	TIME
	Twist Off Big To Circ.	12.00
	Kelly Pull Foot 3 1/2 Pipe	12.45
	1-1/2" UP & Dress overshoot	1.00
	RUN IN To Top of Fish	12.00
	@ 130 FT	1.05
	Hook on To Fish & pull up	1.15
	unlatch fish break down overshoot	1.30
	Pull out Pump Mud	2.00
	Tank Service R.G.	3.45
	Run in	4.30
	Drill	4.45
	Twist OFF	6.45
	Pull out	7.15
	Dress overshoot	7.10
	DRILLER Ken Brennan	
	COMPANY TIME	CONTR TIME

CLASS	REMARKS	TIME
	RIG SERVICE	8.00
	MAKEUP OVERSHOT & RUN IN	8.30
	FISHING NO LUCK	9.00
	HOIST PIPE	9.45
	BENDING 1 1/2" pipe & RUN	10.00
	1 1/2" W/ OVERSHOT	10.30
	FISHING NO LUCK	10.30
	HOIST & CHANGE	11.00
	MILL RING & RUN IN	11.45
	FISHING NO LUCK	12.30
	HOIST CHANGE 3/4" PS.	12.30
	UNDERSHOT & RUN IN	13.00
	FISH & CATCH FISH	1.30
	HOIST FISH SHOW 2 RECOVER	1.45
	FISH & REMOVE OVERSHOT	2.45
	BREAK CIRC & CIRC	3.00
	RUN IN HOIST TO DRILL	3.30
	DRILLER CIRC	3.30
	REPLACE HOIST IN US BINT.	3.45
	BY GRATE CLUTCH	4.00
	COMPANY TIME	CONTR TIME

CLASS	REMARKS	TIME
	Service Pipe and repair	4.00
	1 1/2" W/	4.25
	1 1/2" W/ hole	4.30
	Connection and Run in	4.30
	Drill 6 1/2" hole	5.20
	Drill 6 1/2" hole	5.45
	Drill 6 1/2" hole	6.30
	Drill 6 1/2" hole	6.30
	DRILLER J. J. J. J.	
	COMPANY TIME	CONTR TIME

TOTAL CONTRACT TIME HRS.

TOOLPUSHER OR DRILLER I.C.

TOTAL COMPANY TIME HRS.

APPROVED BY

TOUR 1	MIDN.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER
		AF:	AT:	770	340	529				189			
TOUR 2	8 A.M.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER
		AF:	AT:	3	529	936				307			
TOUR 3	4 P.M.	LT:	LF:	HOLE NO.	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER
		AF:	AT:	3	836	1092				256			

DATE _____

TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER E.C. Ray

TOTAL COMPANY TIME _____ HRS. APPROVED BY D. J. [Signature]

TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER /w/

TOTAL COMPANY TIME _____ HRS. APPROVED BY:

DATE 12/10/01

TOTAL CONTRACT TIME _____ HRS. TOOLPUSHER OR DRILLER I. c. W. J. Pinner
TOTAL COMPANY TIME _____ HRS. APPROVED BY Det. V. M. Anderson

RIG. NO. 17 LOCATION OK 106-1 from mile A-10 DATE 9-24-67 LOCATION DATE 9-24-67

TOUR	MIDN.	T	O	A.M.	P.M.	HOLE NO. 37														STRATIGRAPHIC LOG		PUMP TEST	CLASS	REMARKS	TIME						
						LT:	LF:	FROM	TO	T.D. IF FIN.	SIZE CASING	SET TO DEPTH	AMOUNT	SAC CEMENT	AVERAGE TIME PER LOAD OF W.	LOST DRILL TIME WAIT ON WATER	FROM	TO	DATE	DESCRIPTION	DEPTH TO WATER IN FT.				START	STOP	INTERVAL				
1		T	O	8 A.M.		BIT RECORD: 1A 9 3/4 DT RR. 66899 150 25 12 MUD: 12M. 2A.M. 4 A.M. 6 A.M. PUMP: PRESS 75 RPM 65 DEPTH 30 SURVEY: PRESS 75 RPM 65 DEPTH 30 AT 10 DEG. LOG TO DEPTH W.T. 10 30 25 VISC. 10 30 25 GEL. 10 30 25 W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. W. TRUCK MOB. PUMP GENERAL:														1A 9 3/4 DT RR. 66899 150 25 12 1A 9 3/4 DT RR. 66899 150 25 12		Service Rig Connection to bottom hole Drill 9 3/4 hole Pull up to check bit and survey Drill 9 3/4 hole Pull up to check bit and survey	12 30 1 30 1 30 3 45 7 30 7 30 7 30	12 30 1 30 1 30 3 45 7 30 7 30 7 30	1 1 1 1/4 3 3/4 3 3/4 3 3/4						
						CREW TIME SUMMARY DRILLER: Dennis Conn HELPER: E. Conn HELPER: E. Conn TOTAL: 8 INJURIES AND REMARKS:														DRILLER: Dennis Conn COMPANY TIME: CONT'R TIME:											
						LT: LF: HOLE NO. 60 FROM 120 TO T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD OF W. LOST DRILL TIME WAIT ON WATER AF: AT: 60 120 60 BIT RECORD: 1A 9 3/4 DT 66899 8 225 70 50 14 3 1/2 2A 9 3/4 DT 66893 8-4 225 70 50 14 3 1/2 MUD: 8 A.M. 10 A.M. 12 N.H. 2 P.M. PUMP: PRESS 75 RPM 65 DEPTH 30 SURVEY: PRESS 75 RPM 65 DEPTH 30 AT 10 DEG. LOG TO DEPTH W.T. 8 4 2 4 8 5 8 5 VISC. 30 32 38 36 GEL. 30 32 38 36 W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. W. TRUCK MOB. PUMP GENERAL:														Kelly up 10 Drill Survey R. & S. Serv. Co. Change R. & S. @ 70 H. Drill Survey a 100 W.O. pump Dr. H.						8 00 10 15 11 11 20 11 30 12 00 12 00			2 1/4 1 1/2 1/2 1 2		
						CREW TIME SUMMARY DRILLER: Ken Brennan HELPER: Ed Pratt HELPER: Charlie Hoskins HELPER: David Gagan TOTAL: 8 INJURIES AND REMARKS:														DRILLER: Ken Brennan COMPANY TIME: CONT'R TIME:											
						LT: LF: HOLE NO. 3 FROM 120 TO 148 T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD OF W. LOST DRILL TIME WAIT ON WATER AF: AT: 3 120 148 28 BIT RECORD: 2A 9 3/4 DT 66893 8-2 108 78 11 MUD: 4 P.M. 6 P.M. 8 P.M. 10 P.M. PUMP: PRESS 150 RPM 65 DEPTH 120 200 65 135 130 3/4 SURVEY: PRESS 150 RPM 65 DEPTH 120 200 65 135 130 3/4 AT 4 P.M. 8 A.M. W.T. 8 9 8 9 8 9 9 9 VISC. 35 35 35 35 GEL. 35 35 35 35 W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. W. TRUCK MOB. PUMP GENERAL:														Kelly up 12 FT RIG SERVICE DRILL 9 3/4 BOULDERS SURVEY @ 130 FT - 3/4 DRILL 9 3/4 VERY ROUGH LIMESTONE.						4 00 4 15 4 15 6 00 6 15 12 00			1/4 13/4 1/4 1/4 5 3/4		
						CREW TIME SUMMARY DRILLER: Wm Forsyth HELPER: Ed Brummond HELPER: Darrell Stewart HELPER: Arnold Cochrane TOTAL: 8 INJURIES AND REMARKS:														DRILLER: Wm Forsyth COMPANY TIME: CONT'R TIME:											
						LT: LF: HOLE NO. 3 FROM 120 TO 148 T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD OF W. LOST DRILL TIME WAIT ON WATER AF: AT: 3 120 148 28 BIT RECORD: 2A 9 3/4 DT 66893 8-2 108 78 11 MUD: 4 P.M. 6 P.M. 8 P.M. 10 P.M. PUMP: PRESS 150 RPM 65 DEPTH 120 200 65 135 130 3/4 SURVEY: PRESS 150 RPM 65 DEPTH 120 200 65 135 130 3/4 AT 4 P.M. 8 A.M. W.T. 8 9 8 9 8 9 9 9 VISC. 35 35 35 35 GEL. 35 35 35 35 W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. W. TRUCK MOB. PUMP GENERAL:														Kelly up 12 FT RIG SERVICE DRILL 9 3/4 BOULDERS SURVEY @ 130 FT - 3/4 DRILL 9 3/4 VERY ROUGH LIMESTONE.						4 00 4 15 4 15 6 00 6 15 12 00			1/4 13/4 1/4 1/4 5 3/4		
						CREW TIME SUMMARY DRILLER: Wm Forsyth HELPER: Ed Brummond HELPER: Darrell Stewart HELPER: Arnold Cochrane TOTAL: 8 INJURIES AND REMARKS:														DRILLER: Wm Forsyth COMPANY TIME: CONT'R TIME:											
						LT: LF: HOLE NO. 3 FROM 120 TO 148 T.D. IF FIN. SIZE CASING SET TO DEPTH AMOUNT SAC CEMENT AVERAGE TIME PER LOAD OF W. LOST DRILL TIME WAIT ON WATER AF: AT: 3 120 148 28 BIT RECORD: 2A 9 3/4 DT 66893 8-2 108 78 11 MUD: 4 P.M. 6 P.M. 8 P.M. 10 P.M. PUMP: PRESS 150 RPM 65 DEPTH 120 200 65 135 130 3/4 SURVEY: PRESS 150 RPM 65 DEPTH 120 200 65 135 130 3/4 AT 4 P.M. 8 A.M. W.T. 8 9 8 9 8 9 9 9 VISC. 35 35 35 35 GEL. 35 35 35 35 W.L. F.C. P.H. ADDITIVES: WATER 1. 2. 3. W. TRUCK MOB. PUMP GENERAL:														Kelly up 12 FT RIG SERVICE DRILL 9 3/4 BOULDERS SURVEY @ 130 FT - 3/4 DRILL 9 3/4 VERY ROUGH LIMESTONE.						4 00 4 15 4 15 6 00 6 15 12 00			1/4 13/4 1/4 1/4 5 3/4		
						CREW TIME SUMMARY DRILLER: Wm Forsyth HELPER: Ed Brummond HELPER: Darrell Stewart HELPER: Arnold Cochrane TOTAL: 8 INJURIES AND REMARKS:														DRILLER: Wm Forsyth COMPANY TIME: CONT'R TIME:											

TOTAL CONTRACT TIME HRS.

TOOLPUSHER OR DRILLER

TOTAL COMPANY TIME HRS.

APPROVED BY

RIG, NO.	LOCATION	DATE	LOCATION	DATE	TIME
17	MILLS LAKE CUR. CPOB, CHEVRON NATURAL	FEB. 23/61			

RIG NO.		LOCATION		DATE		TIME	
RIG NO.		LOCATION		DATE		TIME	
1		3		4 A.M.		8 A.M.	
2		8 A.M.		12 P.M.		4 P.M.	
3		4 P.M.		8 P.M.		12 P.M.	
4		8 P.M.		12 P.M.		4 P.M.	
5		12 P.M.		4 P.M.		8 P.M.	
6		4 P.M.		8 P.M.		12 P.M.	
7		8 P.M.		12 P.M.		4 P.M.	
8		12 P.M.		4 P.M.		8 P.M.	
9		4 P.M.		8 P.M.		12 P.M.	
10		8 P.M.		12 P.M.		4 P.M.	
11		12 P.M.		4 P.M.		8 P.M.	
12		4 P.M.		8 P.M.		12 P.M.	
13		8 P.M.		12 P.M.		4 P.M.	
14		12 P.M.		4 P.M.		8 P.M.	
15		4 P.M.		8 P.M.		12 P.M.	
16		8 P.M.		12 P.M.		4 P.M.	
17		12 P.M.		4 P.M.		8 P.M.	
18		4 P.M.		8 P.M.		12 P.M.	
19		8 P.M.		12 P.M.		4 P.M.	
20		12 P.M.		4 P.M.		8 P.M.	
21		4 P.M.		8 P.M.		12 P.M.	
22		8 P.M.		12 P.M.		4 P.M.	
23		12 P.M.		4 P.M.		8 P.M.	
24		4 P.M.		8 P.M.		12 P.M.	
25		8 P.M.		12 P.M.		4 P.M.	
26		12 P.M.		4 P.M.		8 P.M.	
27		4 P.M.		8 P.M.		12 P.M.	
28		8 P.M.		12 P.M.		4 P.M.	
29		12 P.M.		4 P.M.		8 P.M.	
30		4 P.M.		8 P.M.		12 P.M.	
31		8 P.M.		12 P.M.		4 P.M.	
32		12 P.M.		4 P.M.		8 P.M.	
33		4 P.M.		8 P.M.		12 P.M.	
34		8 P.M.		12 P.M.		4 P.M.	
35		12 P.M.		4 P.M.		8 P.M.	
36		4 P.M.		8 P.M.		12 P.M.	
37		8 P.M.		12 P.M.		4 P.M.	
38		12 P.M.		4 P.M.		8 P.M.	
39		4 P.M.		8 P.M.		12 P.M.	
40		8 P.M.		12 P.M.		4 P.M.	
41		12 P.M.		4 P.M.		8 P.M.	
42		4 P.M.		8 P.M.		12 P.M.	
43		8 P.M.		12 P.M.		4 P.M.	
44		12 P.M.		4 P.M.		8 P.M.	
45		4 P.M.		8 P.M.		12 P.M.	
46		8 P.M.		12 P.M.		4 P.M.	
47		12 P.M.		4 P.M.		8 P.M.	
48		4 P.M.		8 P.M.		12 P.M.	
49		8 P.M.		12 P.M.		4 P.M.	
50		12 P.M.		4 P.M.		8 P.M.	
51		4 P.M.		8 P.M.		12 P.M.	
52		8 P.M.		12 P.M.		4 P.M.	
53		12 P.M.		4 P.M.		8 P.M.	
54		4 P.M.		8 P.M.		12 P.M.	
55		8 P.M.		12 P.M.		4 P.M.	
56		12 P.M.		4 P.M.		8 P.M.	
57		4 P.M.		8 P.M.		12 P.M.	
58		8 P.M.		12 P.M.		4 P.M.	
59		12 P.M.		4 P.M.		8 P.M.	
60		4 P.M.		8 P.M.		12 P.M.	
61		8 P.M.		12 P.M.		4 P.M.	
62		12 P.M.		4 P.M.		8 P.M.	
63		4 P.M.		8 P.M.		12 P.M.	
64		8 P.M.		12 P.M.		4 P.M.	
65		12 P.M.		4 P.M.		8 P.M.	
66		4 P.M.		8 P.M.		12 P.M.	
67		8 P.M.		12 P.M.		4 P.M.	
68		12 P.M.		4 P.M.		8 P.M.	
69		4 P.M.		8 P.M.		12 P.M.	
70		8 P.M.		12 P.M.		4 P.M.	
71		12 P.M.		4 P.M.		8 P.M.	
72		4 P.M.		8 P.M.		12 P.M.	
73		8 P.M.		12 P.M.		4 P.M.	
74		12 P.M.		4 P.M.		8 P.M.	
75		4 P.M.		8 P.M.		12 P.M.	
76		8 P.M.		12 P.M.		4 P.M.	
77		12 P.M.		4 P.M.		8 P.M.	
78		4 P.M.		8 P.M.		12 P.M.	
79		8 P.M.		12 P.M.		4 P.M.	
80		12 P.M.		4 P.M.		8 P.M.	
81		4 P.M.		8 P.M.		12 P.M.	
82		8 P.M.		12 P.M.		4 P.M.	
83		12 P.M.		4 P.M.		8 P.M.	
84		4 P.M.		8			