

CLINICAL PAV AN TRAINER
L-59

Drilling Authority No. 209.....
Date issued ... December 3, 1965..

WELL NAME Unical Pan Am Trainor L-59
FIELD Area:
LOCATION: Unit L Section 59 Grid 60-30; 120-30.....
Latitude 60-28-33 Longitude 120-40-50.....
From Established Reference Marker

Rig Release Date:
Status
Information Release Date

CHANGE OF NAME:

DATE RECEIVED	INDEX
	Application for a Drilling Authority. Well Completion Data. Well History Report.
	Application to Amend a Drilling Authority.
	Application to change a Well Name.
	Application to Abandon a Well or Suspend Drilling.
	Application to Alter Condition of a Well. Well History Supplement. 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.
	Well Visit.
	Daily Drilling Reports.
	Logs. Large scale Small scale



Drilling Authority No. 209
Date Issued Dec. 3, 1965

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
RESOURCE MANAGEMENT DIVISION

WELL COMPLETION DATA

To be submitted in duplicate within thirty days after the completion, rework, abandonment, recompletion or suspension of every well.

Well name and number, Union Pan Am Trainor L-59

Permit No. 2690 Lease No.

Pan American Petro. Corp. Exploratory Licence No. 1152
(Permit, Licence, Lease)

Union Oil Co. of Canada Ltd. Exploratory Licence No. 720 & 1007
(Operator)

Location: Unit L Section 59 Grid 60°-30' x 120°-30'

Latitude **60°-28'-33"** Longitude **120°-40'-50"**

From Established Reference Marker Seismic Shot Point 869 of Line U-40-25

(by United Geophysical) of Pan American Seismic Survey, Jan. 26, 1961.

	DATE	DEPTH
Spudded	1/22/66	
Suspended		
Resumed		
Finished Drilling		
Dredged		
Complete (gas/oil)		
Abandoned	2/28/66	6505
Rig released	2/28/66	6503

Pool (s)

Interval(s) open to production.....

Elevation: Gr. 1869

K.B. 1886

Drilling Contractor & Rig No. **Arrow Dring. #6**

Contractor's Business Licence No. 24240

CASING RECORD

Casing Size (Inches)	Grade	Weight	Amount	Est at—	Sacks of Cement and Additives
1. 13-3/8	J-55	48	190	207	200 plus 2% CaCl2
2. 9-5/8	J-55	36	1079	1096	450 plus 2% CaCl2
3.					
4.					
5.					
6.					

[illegible]

CEMENTING RECORD (Plug, Squeezes, etc.)				PERFORATING RECORD (Bullet, Jet)				SERVICING RECORD (Acidizing, Fracing, etc.)			
Date	From	To	Remarks	Date	From	To	Remarks	Date	From	To	Remarks
2/27/66	6505	6300	105 sacks								
2/27/66	6000	5600	210 sacks felt @ 5580								
2/28/66	1140	1040	80 sacks felt @ 1030								
2/28/66	Surf.		5 sacks welded on steel plate.								

DRILL STEM TESTS

No.	Date	Formation	From	To	V.O. Min.	I.S.L. Min.	P.S.L. Min.	I.S.L.B.H.P.	P.S.L.B.H.P.	I.F.B.H.P.	P.F.B.H.P.	I.H.P.	P.H.P.	REMARKS
1	2/9/66	Slave Point	5660	5770	60	60	60	2035	1875	120	154	2701	2650	Very weak air blow. Rec. 240' mud.
2	2/13/66	Slave Point	5770	5890	70	60	60	120	84	60	60	2852	2800	Rec. 15' mud.
3	2/25/66	Elk Point	6170	6305	120	120	120	2448	2316	86	173	3202	3202	Weak air blow to dead in 31 min.
4	2/26/66	Slave Point	5640	5780	180	120	120	2247	1611	94	104	2929	2885	Rec. 150' mud, 90' salt water. Weak blow 13 min. to very weak 45 min. Rec. 360' slt. salty mud.

ANALYSIS

Lab. No.	Sample	From	To	Source	Remarks
CNP-4-3188	Core	5770	5890	Core Lab.	Full diameter analysis

PRESENT STATUS OF WELL

Oil	(Interval)
Gas	(Interval)
Dry	6505
Susp.	

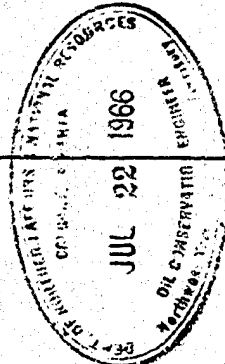
Company Unico Oil Co. of Canada Ltd.

Signed by C. M. Warke

Title Petroleum Engineer

Date July 20, 1966

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





DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
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 Union Pan Am Trainor L59
Location: Unit L Section 33 Grid 60° - 28' x 120° - 44'
Latitude 60° - 28' - 30" Longitude 120° - 40' - 32"
From Established Reference Marker Seismic Shot Point 869 of Line U-40-23 (by United Geophysical) of Pan American Seismic Survey, January 26/1961
Permit No. 2690 Lease No. _____

Pan American Petroleum Corporation
(Permitter, Licensee, Lessee)

Date of commencement of proposed program February 27, 1966

OIL, GAS, AND WATER ENCOUNTERED (Depths)

Oil at _____
Gas at _____
Water at 6170-6305
Total Depth 6505 Date of last operations February 22, 1966
Present condition of well Abandoned

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Set At—	Sack of Cement and Additives	Amount Pulled
1. <u>13-3/8</u>	<u>40</u>	<u>190</u>	<u>207</u>	<u>200 (Plug) + 2 % G.C.I.</u>	
2. <u>9-5/8</u>	<u>36</u>	<u>1079</u>	<u>1096</u>	<u>450 (Plug) + 2 % G.C.I.</u>	
3. _____					
4. _____					
5. _____					

PROPOSED ABANDONMENT PROGRAM

No.	Plug Position	Geological Formation	Number of Sacks of Cement	Remarks
1	<u>6505-6300</u>	<u>Red Beds</u>	<u>105</u>	
2	<u>6000-5600</u>	<u>Slave Point</u>	<u>210</u>	<u>Felt at 5580'</u>
3	<u>1140-1040</u>	<u>Intermediate casing</u>	<u>80</u>	<u>Felt at 1030'</u>
4	<u>Surface</u>		<u>5</u>	<u>Weld on Steel Plate</u>

The following logs have been run Ind.-E. Log, Dual Ind. LL, Gamma-Ray, (BHC) Microlog
Other operations proposed Density Log

Operations to be carried out by Arrow Dring. Rig #6 Contractor Licence No. 24240
Address 309 Seventh Ave. S.W., Calgary, Alta Address _____
Responsible Agent in field Calgary C. E. Smith
Dated at _____ this 25 Day of May 19 66
Signed by [Signature] Company Union Oil Co. of Canada Limited
Title Operations Superintendent Operator's Exploratory Licence No. HS 720 + 1007

Note:—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. E.H.J. Thomas on the 23rd February 1966

Dated 31st May, 19 66

[Signature]
Oil Conservation Engineer

Forms to be submitted in triplicate to Oil Conservation Engineer, Calgary, Alberta



DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
RESOURCE MANAGEMENT DIVISION

Application to Change a Well Name

Application is made hereby to change the name of the well, recorded in the Well-names Register as—

UNICAL PAN AM TRAINOR L-59

(Old name)

to UNION PAN AM TRAINOR L-59

(Proposed new name)

Well Location

Location: Unit L Section 59 Grid 60° - 30' x 120° - 30'

Latitude 60° - 28' - 33" Longitude 120° - 40' - 50" (est.)

From Established Reference Marker On shot point 869 of line U-40-25 (by United Geophysical) of Pan American Corporation Seismic Survey, Jan. 26, 1961.

Reason for Changing Well Name

Union Oil Company of Canada Limited purchased the Canadian assets of Union Oil Company of California, effective December 20, 1965. Union Oil Company of Canada Limited licence number for operating in the Northwest Territories is 720.

Dated at Calgary, Alberta, this 30th day of December 1965

Signed by

Title Joint Interest Superintendent

Company Union Oil Company of Canada Limited

(For Resource Management Division use only)

APPROVED

This application has been examined and approved:

Date 30th December, 1965

Oil Conservation Engineer

Forms to be submitted in triplicate to the Oil Conservation Engineer, Calgary, Alberta.



DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
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 UNICAL PAN AM TRAINOR L59
Location: Unit L Section 59 Grid 60° - 30' x 120° - 30'
Latitude 60° - 28' - 33" Longitude 120° - 40' - 50" (est.)
From Established Reference Marker On shot point 869 of line U-40-25 (by United Geophysical) of Pan American Corporation Seismic Survey, Jan. 26, 1961.
Elevation: Ground 1869' (est.) K.B. 1883' (est.) feet above sea-level.
Well is expected to produce from Slave Point formation at a depth of about 5781 feet.
Area assigned to well

(For Oil Conservation Engineer's use only)

Permit No. 2690 Lease No. Acreage 63,212
Permittee, licensee, or lessee Pan American Petroleum Corporation
Exploratory Licence No. 715
Surface owned by Crown or Crown
(If allocated submit name and address of owner and occupant.)
Petroleum and natural-gas rights owned by Crown

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	Section of Cement
1. <u>13-3/8"</u>	<u>48</u>	<u>H-40</u>	<u>Mann.</u>	<u>New</u>	<u>200'</u>	<u>Circulated</u>
2. <u>9 5/8"</u>	<u>36</u>	<u>J-55</u>	<u>Mann.</u>	<u>New</u>	<u>1000'</u>	<u>Circulated</u>
3. <u>5 1/2"</u>	<u>17</u>	<u>J-55</u>	<u>Mann.</u>	<u>New</u>	<u>T.D.</u>	<u>500</u>
4. ....	....	....	....	....	....	....
5. ....	....	....	....	....	....	....

Expected water, gas, and oil horizons and type of control equipment Surface and intermediate casing to control surface water. Blow-out preventers will be used to control high pressure oil and/or gas.

Well will be drilled with (Rotary) Rig No. 6 by Arrow Drilling Co. Ltd.
(Subcontract) (Drilling Contractor or company)

Responsible agent of applicant:— Contractor's Business Licence No. 24240
At well C.E. Smith At registered office J. T. Duree
Address Ft. Nelson, B.C. Address 1200 Elveden House, Calgary, Alberta
It is understood that if changes become necessary, notice of the change of plan will be submitted.
Dated at Calgary, Alberta, this first day of December, 19 65
Signed by [Signature] Company Union Oil Company of California
Title Division Operations Manager Operator's Licence No. 1007

(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 3rd December, 19 65 Oil Conservation Engineer [Signature]
Forms to be submitted to Oil Conservation Engineer, Calgary, Alberta.

FINAL WELL REPORT
UNION PAN AM TRINOR L-59
120°40'50" W. 60°28'33" N.

UNION PAN AM TRAINOR L - 59

TABLE OF CONTENTS

INTRODUCTION

GENERAL INFORMATION

GEOLOGICAL SUMMARY

ENGINEERING and COMPLETION SUMMARY

FORMATION TEST SUMMARY

DRILLING MUD RECORD

BIT RECORD

DAILY PROGRESS

SAMPLE and CORE RECORD

GENERAL REMARKS



INTRODUCTION

Union Pan Am Trainor L-59 located approximately 150 miles northeast of Fort Nelson, British Columbia, was spudded on January 21, 1966 and reached a final total depth on February 22, 1966 of 6,505 feet. The major prospective zone was the Slave Point Formation which had yielded gas in the previously drilled C-39 well, located 12 miles southeast of L-59.

Three full-hole cores (180 feet recovery) were cut in the Slave Point and three drillstem tests over the Slave Point interval were run. The well was dry and abandoned as of March 1st, 1966. The following pages outline the pertinent information on this wildcat test and are broken down into several sections. A strip log which shows general lithology and other information on the well is included in the rear pocket of this report. Depths shown to formation tops and markers in the Sample and Core Record are those picked from sample examination only.

GENERAL INFORMATION

WELL NAME Unical Pan Am Trainor L-59 CLASS Wildcat

LOCATION Troul Lake Area PROVINCE N.W.T.

CO-ORDINATES 120° 40'-50" W. 60° 28'33" N.

ELEVATION: 1869 Grd. 1886 K.B.

DRILLING AUTHORITY: No. 209 Dated December 3, 1965

TITLE HOLDER Pan American Petroleum Corp. Op. Lic. No. 2699

TYPE & NO. OF TITLE Exploratory License No. 715

OPERATOR: Name Union Oil of California Op. Lic. No. 1007

Address 1200 Elveden House, Calgary

DRILLING CONTRACTOR: Name Arrow Drilling Co. Rig No. 6

Type of Rig EMSCO GA 350 Lic. No. 24240

SERVICE RIG OPERATOR _____ Rig Lic. No. _____

WELL STATUS Dry and Abandoned

DATES: Spudded January 21, 1966 Finished Drilling February 22, 1966

Completed or Abandoned Abandoned Rig Released February 28, 1966 - March 1, 1966

Release of Service Rig or Equipment _____

DEPTHS: T.D. 6505' P.B.T.D. _____

HOLE SIZE 17 1/2" 12 1/4" 8 3/4"
13-3/8" -222'; 9-5/8" 222-1096'; 5-1/2" 1096 - T.D.

Distribution & Storage Dept. Northern Affairs, Calgary

[illegible]

ENGINEERING & COMPLETION SUMMARY

LOG RECORD

Company	Type	Run No.	Date	Interval
Schlumberger	Induction Elect.	1	Feb. 22, 1966	1100 - 6493
Schlumberger	Borehole Compensated Sonic	1	Feb. 22, 1966	1100 - 6493
Schlumberger	Dual Induction			
	Laterolog	1	Feb. 22, 1966	5500 - 6493
Schlumberger	Microlog Caliper	1	Feb. 23, 1966	1100 - 6493
Schlumberger	Formation Density Log	1	Feb. 23, 1966	5492 - 6492

CASING RECORD

Hole Size	Casing Size	Wt.	Grade	Manufacturer	KB Setting Depth	Amount Cement	Cement Additives	Date
13-3/8 17 1/2	13 1/8	48		Mann.	222'	200cu'	2% CaCl ₂	Jan. 25
9-5/8 12 1/4	9 5/8	36lbs	J-55	Mann.	1096'	450cu'	2% CaCl ₂	Jan. 31

CEMENTATION RECORD

Plug No.	Date	Zone	Interval	Amount of Cement Used	Depth Felt
1	2-27-66		6505 - 6300	105 sacks	
2	2-27-66		6000 - 5600	210 sacks	5580
3	2-28-66		1140 - 1040	90 sacks + 3% CaCl ₂	1030
4	2-28-66		surface casing	5 sacks	
				Welded on steel plate	

DEVIATION SURVEYS

Depth	Degrees Inclination	Instrument	Depth	Degrees Inclination	Instrument
425	1°	TOTCO	2577	3/4°	TOTCO
483	2°	"	3085	1°	"
533	1-1/2°	"	3594	1°	"
590	1-1/4°	"	4088	1-1/4°	"
694	1-1/2°	"	4580	1-1/2°	"
784	1°	"	4996	2°	"
1010	1°	"	5203	2-3/4	"
1527	7/8°	"	5290	2-7/8	"
2070	1°	"	5410	3°	"

ENGINEERING & COMPLETION SUMMARY

LOG RECORD

Company	Type	Run No.	Date	Interval

CASING RECORD

Hole Size	Casing Size	Wt.	Grade	Manufacturer	KB Setting Depth	Amount Cement	Cement Additives	Date

CEMENTATION RECORD

Plug No.	Date	Zone	Interval	Amount of Cement Used	Depth Felt

DEVIATION SURVEYS

Depth	Degrees Inclination	Instrument	Depth	Degrees Inclination	Instrument
5530	3°	TOTCO			
5650	3°	"			
6025	3°	"			
6275	2-1/2°	"			
6475	2°	"			

FORMATION TEST SUMMARY

TEST NO. DST #1 TYPE STRADDLE DATE Feb. 9, 1966
INTERVAL: 5660 - 5770 FORMATION: SLAVE POINT
TIMES: ISI 60 MIN. V.O. 60 MIN. FSI 60 MIN.
DESCRIPTION: Fair initial puff, remaining steady for 15 min. Open valve -
no blow, checked and rethawed flare line (20 min.) Very small air
blow. No g.l.s.
RECOVERY: 240' mud
(Field Pressures)
PRESSURES: IHP 2701 ISIP 2033 IFP 120
FHP 2656 FSIP 1875 FFP 154
BHT 200° + F.

TEST NO. DST #2 TYPE STRADDLE DATE Feb. 14, 1966
INTERVAL: 5770' - 5890' FORMATION: SLAVE POINT
TIMES: ISI 60 min. MIN. V.O. 70 min. MIN. FSI 60 min. MIN.
DESCRIPTION: Weak initial puff, dying after 10 min. No blow; no g.t.s.
RECOVERY: 15' mud.
(Field Pressures)
PRESSURES: IHP 2852 ISIP 120 IFP 60
FHP 2800 FSIP 84 FFP 60
BHT 234°

FORMATION TEST SUMMARY

TEST NO. DST #3 TYPE STRADDLE DATE Feb. 25, 1966
INTERVAL: 6170 - 6305 FORMATION: ELK POINT DOLOMITE
TIMES: ISI 120 MIN. V.O. 120 MIN. FSI 120 MIN.
DESCRIPTION: Weak initial pull; weak air blow decreasing to dead in 35
minutes
(Field pressures)
RECOVERY: 150' drilling mud
90' salt water
PRESSURES: IHP 3202 ISIP 2448 IFP 86
FHP 3202 FSIP 2316 FFP 173
BHT _____

TEST NO. DST #4 TYPE STRADDLE DATE Feb. 26, 1966
INTERVAL: 5640 - 5780 FORMATION: SLAVE POINT
TIMES: ISI 120 MIN. V.O. 160 MIN. FSI 120 MIN.
DESCRIPTION: Weak blow for 13 minutes; dying in 45 minutes to very
weak and continuing to end of test.
(Field Pressures)
RECOVERY: 360' slightly salty mud
PRESSURES: IHP 2249 ISIP 2249 IFP 54
FHP 1599 FSIP 1599 FFP 217
BHT _____

Prov. N.W.T.

[illegible]

UNION OIL COMPANY OF CALIFORNIA
 Alcon Division
 CANADA LIMITED
 1200 Breden House
 CALGARY, ALBERTA

BIT RECORD

BIT NO.	BIT MFR.	BIT SIZE	BIT TYPE	SERIAL NO. OF BIT	DEPTH OUT	FOOTAGE	WELLS RUN	WELL DEPTH	WELL PRESSURE	REMARKS FORMATION ETC.
1	HW	12-1/4	osc3	65360	634	412	21			
2	REED	12-1/2	y13a	ED 3124	1096	462	13			
3	HW	8-3/4	osc3	61599	1118	22	3/4			
4	HW	8-3/4	re7x1	65171	5602	4484	83-1/2	10		Air drilling
5	HW	8-3/4	owv	57824	5770	168	23-1/2	35		
6A	Christenson Diamond	8-11/16		EC8504	5950	180	52	12		Cores # 1, 2 and 3
7	HW	8-3/4	owv	67962	-	-	2			Circulate to test
7	HW	8-3/4	owv	62962	6025	75	15-1/2	45		Bit re-run
8	HW	8-3/4	owc	38220	6150	125	18	45		
9	HW	8-3/4	owc	48245	6275	125	21-3/4	45		
10	HW	8-3/4	owc	76979	6342	67	14	45		
11	HW	8-3/4	w7	15364	6437	95	21-3/4	45		
12	HW	8-3/4	w7	39542	6505	68	14-1/4	45		
A	HW	9-7/8	osc3	GW086	222	222	9-1/2			Surface
B	REED	17-1/2	reamer		100	100	7			Reamer
C	REED	17-1/2	reamer		222	122	34-1/2			Reamer
						-1				

DAILY PROGRESS

DATE	PREVIOUS TD	PRESENT TD	FOOTAGE	OPERATIONS
Jan. 25	222	222	222	Running surface casing
Jan. 26			-	W.O.C.
Jan. 27			-	Drill out plug
Jan. 28	222	370	148	Drilling
Jan. 29	370	630	260	Drilling
Jan. 30	630	1096	466	Running Casing
Jan. 31	1096	1096	-	W.O.C.
Feb. 1	1096	1096	-	Rigging for air drill out
Feb. 2	-	--	-	Hydril Break Drill out 7:00 pm.
Feb. 3	1096	2000	904'	Drilling with air
Feb. 4	2000	3068	1068	Drilling with air
Feb. 5	3068	4274	1206'	Drilling with air
Feb. 6	4274	5470	1196'	Drilling with air
Feb. 7	5470	5602	132'	Complete Air Drilling - mud up
Feb. 8	5602	5770	168'	Test
Feb. 9	5770	5770	-	Pull DST #1
Feb. 10	-	--	-	Condition hole for coring
Feb. 11	5770	5830	60'	Cut Core #1 Rec. 50'
Feb. 12	5830	5890	60'	Cut Core #2 Rec. 60'
Feb. 13	-	-	-	Wait on tester
Feb. 14	-	-	-	Run DST #2
Feb. 15	5890	5950	60'	Cut Core #3
Feb. 16	5950	5950	-	Rec. Core #3 -Drill ahead
Feb. 17	5950	6025	75	Drilling
Feb. 18	6025	6150	125	Drilling with bit #9
Feb. 19	6150	6275	125	Tripping for bit #10
Feb. 20	6275	6346	71	Tripping for bit #11

UNION OIL COMPANY OF CANADA LIMITED
ALBERTA DIVISION
CALGARY, ALBERTA
1200 Elveden House

CANADA LIMITED
~~CONFIDENTIAL~~

DAILY PROGRESS

[illegible]

SAMPLE & CORE RECORD

WELL NAME Unical Pan Am Trainor L-59

INTERVAL		DESCRIPTION
FROM	TO	
230 - 260		Shale, green grey, splintery interbedded with sandstone, quartzitic varicolored (rose, yellow clear)
260 - 320		Sandstone coarse grained, pink, clear and white, sub-rounded to sub-angular. Occasional well rounded grain. Scattered biotite in white angular quartzitic sandstone. Pyrite crystals common.
320 - 350		Sandstone, varicolored, coarse grained as above with minor amount of dark grey green micromicaceous shale.
350 - 460		Sandstone as above interbedded with dark grey green micromicaceous shale and minor amount of dark green slightly calcareous siltstone. Scattered well rounded chert pebbles. Pyrite crystals scattered.
460 - 500		Sandstone coarse grained, varicolored, as above with minor amount of grey green siltstone and light brown fine crystalline limestone.
500 - 510		Sandstone as above interbedded with shale, dark grey green, fissile in part, micromicaceous, noncalcareous.
510 - 620		Shale dark grey green, micromicaceous, noncalcareous, fissile in part. Scattered pyrite crystals.

SAMPLE & CORE RECORD

WELL NAME Unical Pan Am Trainor L-59

INTERVAL		DESCRIPTION
FROM	TO	
620 - 650		Shale dark green grey, micromicaceous, with minor amount of sandstone, coarse grained pink, rose, clear and white having generally subrounded grains. Scattered pyrite crystals.
650 - 710		Shale as above Interbedded with sandstone, fine grained-medium grained, pink and white, calcareous in part sub-angular to sub-rounded. Minor amount of varicolored calcareous siltstone. Scattered chert and pyrite crystals.
710 - 720		No sample.
720 - 760		Shale as above with minor amount of varicolored light sandstone and siltstone. Pyrite crystals.
760 - 790		Shale dark grey green noncalcareous micromicaceous with minor grey green micromicaceous siltstone.
790 - 820		Shale as above with some dark green siltstone and minor amount of light grey noncalcareous porous glauconitic fine grained sandstone.
820 - 860		Shale dark grey green micromicaceous fissile In part, Interbedded with sandstone, light grey, fine-grained, porous glauconitic In part. Calcareous In part, rounded - sub-rounded grains.

SAMPLE & CORE RECORD

WELL NAME Unical Pan Am Trainor L-59

INTERVAL		DESCRIPTION
FROM	TO	
860	920	Sandstone fine-grained, light brown - dark brown, calcareous in part. Rounded - sub-rounded grains, porous part, interbedded with dark grey and green shale.
920	940	Shale dark grey green, noncalcareous, micromicaceous interbedded with green grey micromicaceous siltstone, calcareous in part. Much sandstone cavings.
950	1010	Sandstone fine grained, light brown to dark brown, calcareous in part, light; grades to siltstone in places, micromicaceous. Sandstone has slightly calcareous cement in places.
1010	1030	Siltstone fine grained to medium grained light grey green and light brown, micromicaceous, light, noncalcareous. Inoceramus (?) fragments. Interbedded with dark green-grey shale. Fissile in part.
1030	1050	Siltstone green-grey noncalcareous, micromicaceous interbedded with minor light grey glauconitic light sandstone. Some dark green grey shale.
1050	1090	Shale dark green grey, micromicaceous some minor siltstone as above.

SAMPLE & CORE RECORD

WELL NAME Unical Pan Am Trainer L-59

INTERVAL		DESCRIPTION
FROM	TO	
1090 - 1110		No Sample
1110 - 1120		Shale dark grey, micromicaceous, noncalcareous, with minor green grey micromicaceous siltstone.
		Air Drilling 1122
1120 - 1450		Shale dark grey, noncalcareous, micromicaceous.
1450 - 1460		Shale as above with minor limestone.
1460 - 1500		Shale dark grey green as above noncalcareous.
1500 - 1510		Shale as above calcareous.
1510 - 1580		Shale medium grey green slightly calcareous.
1580 - 1730		Shale as above very calcareous.
1730 - 1760		Shale medium grey green slightly calcareous.
1760 - 1960		Shale medium grey green noncalcareous.
1960 - 2180		Shale as above, slightly calcareous.
		KOTCHO 2180' (-294')
2180 - 2360		Limestone light grey brown, interbedded with 20-30% dark grey shale.

SAMPLE & CORE RECORD

WELL NAME Unical Pan Am Trainor L-59

INTERVAL		DESCRIPTION
FROM	TO	
2360	2390	Limestone as above with no shale.
2390	2450	Limestone as above 50%; shale dark grey 50%.
2450	2800	Shale grey green calcareous in part; minor limestone scattered throughout.
2800	3200	Limestone light brown to tan, cryptocrystalline (?) Occasional minor interbedded dark grey-black shale.
3200	3370	Limestone as above with minor dark grey shale.
3370	3410	Shale dark grey with some limestone as above.
3410	3550	Limestone light tan with minor interbedded shale.
3550	3620	Shale dark grey green slightly calcareous.
3620	3650	Shale as above with minor light brown limestone.
3650	3690	Shale dark grey.
3690	3770	Shale as above interbedded with 40% tan limestone.
3770	3780	Limestone medium-dark brown interbedded with shale as above.

SAMPLE & CORE RECORD

WELL NAME Pan Am Trainer L-59

INTERVAL		DESCRIPTION
FROM	TO	
3780 - 3793		Shale dark grey green. UTAHN 3793' (-1907)
3793 - 3840		Limestone medium brown, fine crystalline (?) SIMPSON 3841' (-1955)
3840 - 4070		Shale dark green grey slightly calcareous in part. (3950-3960 calcareous) (4070-4080 calcareous)
4070 - 4360		Shale dark green grey calcareous in part.
4360 - 4370		Sandstone (?) medium brown, calcareous.
4370 - 4570		Shale dark grey green calcareous in part.
4570 - 4590		Sandstone fine grained dark brown noncalcareous.
4590 - 4670		Shale medium green grey noncalcareous.
4670 - 4700		Sandstone dark brown, fine grained (?) noncalcareous.
4700 - 4710		Sandstone (?) medium brown noncalcareous.
4710 - 4880		Shale dark green slightly calcareous in part.
4880 - 4900		Sandstone fine-grained, dark brown and slightly calcareous.
4900 - 5130		Shale dark green grey slightly calcareous.

SAMPLE & CORE RECORD

WELL NAME: Dan Am Trainor L-59

INTERVAL FROM TO	DESCRIPTION
3780 - 3793	Shale dark grey green.
	UTAHN 3793' (-1907)
3793 - 3840	Limestone medium brown, fine crystalline (?) .
	SIMPSON 3841' (-1955)
3840 - 4070	Shale dark green grey slightly calcareous in part.
	(3950-3960 calcareous) (4070-4080 calcareous)
4070 - 4360	Shale dark green grey calcareous in part.
4360 - 4370	Sandstone (?) medium brown, calcareous.
4370 - 4570	Shale dark grey green calcareous in part.
4570 - 4590	Sandstone fine grained dark brown noncalcareous.
4590 - 4670	Shale medium green grey noncalcareous.
4670 - 4700	Sandstone dark brown, fine grained (?) noncalcareous.
4700 - 4710	Sandstone (?) medium brown noncalcareous.
4710 - 4880	Shale dark green slightly calcareous in part.
4880 - 4900	Sandstone fine-grained, dark brown and slightly calcareous.
4900 - 5130	Shale dark green grey slightly calcareous.

SAMPLE & CORE RECORD

WELL NAME Unical Pan Am Trainor L-59

INTERVAL		DESCRIPTION
FROM	TO	
5130	5140	Sandstone fine-grained dark brown calcareous.
5140	5555	Shale medium grey green slightly calcareous MUSKWA 5555 (-3679)
5565	5600	Shale noncalcareous dark grey-black End Air Drilling 5602 12:45 pm Feb. 6.
5600	5650	Shale dark grey green and black. Noncalcareous. Micromicaceous in part and splintery. Well Indurated. Siliceous and slightly bituminous in part.
5650	5660	Shale black siliceous well Indurated as above with minor tan grey cryptocrystalline limestone. Scattered pyrite crystals SLAVE POINT 5660 (-3774)
5660	5700	Limestone tan grey and mottled. Cryptocrystalline to fine crystalline having calcite inclusions. Relic fossil remains. Scattered very poor pin point porosity.
5700	5720	Limestone light cream and light brown. Some mottled (argillaceous) fine crystalline limestone with minor crypto- crystalline limestone. Traces scattered intercrystalline porosity. Calcite crystal inclusions. Scattered relic fossil remains. Stromatoporoid (?) debris. Rare light cream earthy (chalky) limestone.

SAMPLE & CORE

RD

WELL NAME

Pan Am Trainor L-59

INTERVAL

FROM

TO

DESCRIPTION

5720 - 5770

Limestone, tan, cryptocrystalline to fine crystalline. Tight throughout except for very poor scattered intercrystalline porosity. Argillaceous in part. Scattered fossil remains interbedded with light grey argillaceous fine crystalline limestone and minor amount light grey chalky limestone. Occasional scattered calcite crystal inclusions. Scattered very poor pin point porosity.

TOP

CORE #1 5770 - 5830' REC 60'

962 min. coring .(av = 16 min/ft.)

3.0'

Limestone medium brown, fine crystalline. Pellet-like debris scattered throughout. Calcite crystals and as inclusions. No visible porosity.

19.0'

Limestone dark grey brown cryptocrystalline. Scattered calcite crystals and pyrite crystals. Argillaceous. Shale partings up to 1" common. Partings are calcareous. Stylolitic partings present. Limestone is cryptocrystalline in places and tight throughout.

10.0'

Limestone dark brown generally fine crystalline with some dark grey shale partings and inclusions which give a mottled and banded appearance. Pyrite crystals. Some included calcite crystals. Generally cryptocrystalline to fine crystalline and tight throughout.

SAMPLE & CORE RECORD

WELL NAME Unical Pan Am Trainer L-59

INTERVAL		DESCRIPTION
FROM	TO	
2.5'		Limestone medium-dark brown crypto-microcrystalline. Scattered calcite crystals and calcite paste throughout. Tight.
2.5'		Limestone medium brown. Pellet-like debris makes up matrix. Calcite crystal and veinlets. No visible porosity.
7.0'		Limestone medium-dark brown. Generally fine crystalline Shale blebs and partings. No visible porosity. Calcite crystals and veinlets and calcite paste scattered in partings. Relic stromatoporoids (?), scattered throughout.
1.0'		Limestone medium brown, <u>Amphipora</u> (?) scattered throughout. Scattered vugs but no apparent intercrystalline porosity or permeability. Some calcite crystals and veining Infill vugs.
15.0'		Limestone medium brown generally fine crystalline with some cryptocrystalline dark brown interbeds. Scattered shale partings and stringers. Calcite crystals and veinlets throughout. Relic fossils infilled in places with calcite paste. Scattered vugs with no apparent permeability. Vugs generally infilled with calcite or dark green shale. Scattered pyrite crystals. Vugs, generally infilled, scattered throughout lower 16' of core.
BOTTOM		

SAMPLE & CORE RECORD

WELL NAME MINICAL PAN AM TRINOR 1

INTERV/ FROM	DESCRIPTION
	CORE #2 5830 - 5890 REC 60'
TOP	685 min coring (av = 11-3/4 min/ft.)
3.0'	Limestone dark grey brown, generally fine crystalline. No visible porosity. Few scattered vugs. Calcite veinlets and crystals infill vugs.
3.0'	Limestone medium brown with black shale included as stringers. Very fossiliferous (Amphipora?). Fossils imbedded in shale give mottled appearance. Tight and infilled
13.0'	Limestone light grey brown, fine crystalline, calcite crystals included. No visible porosity. Scattered fossils and fossil outlines throughout. (small brachiopods (?) and corals) Colonial corals. Few scattered vugs with no apparent permeability. Quite fossiliferous with some pellet- like debris and very minor scattered intra-organic porosity.
8.0'	Limestone medium brown generally fine crystalline. Vuggy throughout. Calcite crystals infill vugs in most parts. Argillaceous and black shale partings and infillings. Numerous fossils and fossil imprints scattered throughout, (corals mostly with some brachiopods). Mostly infilled with calcite and black shale.

SAMPLE & CORE RECORD

WELL NAME

Well Pan Am Trainor L-59

INTERVAL

DESCRIP

FROM TO

6.0'

Limestone medium brown, fine crystalline. Scattered corals (horn corals) and fossils thru. Few scattered vugs. Black shale included and as partings and beds up to 4" thick. Core fractured obliquely along shale planes. Shale and calcite crystals infill vugs. No apparent porosity. Scattered pyrite crystals.

11.0'

Limestone medium grey brown with some brown grey, generally fine crystalline. Scattered fossil remains (brachiopods and corals) throughout. No apparent porosity. Scattered pyrite and calcite crystals. Occasional black shale partings. Quite fossiliferous throughout with corals (horn corals) brachiopods and stromatoporoids. Appears tight generally with some very poor scattered intra-organic porosity. Scattered Amphipora. Few scattered vugs, generally infilled.

10.0'

Limestone generally fine crystalline, dark brown grey. Very fossiliferous throughout. Few scattered vugs throughout. Black shale partings and calcite and black inclusions scattered thru. Fossils include Amphipora, stromatoporoids, brachiopods, horn corals, branching (?) corals. No apparent porosity.

BOTTOM

SAMPLE & CORE RECORD

WELL NAME: Central Pan Am Trainer L-59DATE: 11/11/63FROM: DESIGN: NO:

CORE #3 5890 - 5950

REC 60'

1272 min. coring (av. 21.2 min/ft.) (2 motors working)

TOP

35.0

Limestone brown gray, fine crystalline to cryptocrystalline
 Fossiliferous (stromatoporoids, Amphipora) Calcite
 Inclusions. No visible porosity. Occasional scattered vug
 on surface of core. Argillaceous in part with scattered
 shale partings. Occasional brachiopods and numerous poorly
 preserved and infilled corals. Scattered pyrite crystals. No
 visible porosity.

25.0

Limestone black with brownish tinge, generally fine
 crystalline, slightly argillaceous. No visible porosity. Minor
 interbeds up to 10" thick of dark brown fine crystalline
 limestone. Black limestone has numerous Amphipora and
 stromatoporoids throughout as well as corals. Infilled and
 light everywhere. The interbeds (up to 10") of dark brown
 fine crystalline limestone are not as fossiliferous as the
 black limestone and have calcite crystals included. Limestone
 is silty to fine sandy in part. Argillaceous and bituminous (
 in part.

BOTTOM

239

CALGARY, ALBERTA

47-50 Eberden House

WORD

1941 Pan Am Trainer L-59

1944

035

FROM

ELK POINT 5950' (-4064)

5250-5990

Limestone dark brown grey generally fine crystalline
argillaceous and bituminous in part. Fossiliferous. Minor
light grey brown fine crystalline limestone, and black
noncalcareous splintery shale.

5990-6009

Shale black and dark grey green, splintery, well indurated.
Minor light grey brown fine crystalline limestone as above
and dark brown grey limestone.

6000-6020

Limestone medium brown, fine crystalline. No visible
porosity. Interbedded with light grey fine crystalline limestone
argillaceous. Minor splintery dark grey green shale.

6020-6030

Shale dark grey green, splintery and blocky in part,
noncalcareous.

6030-6060

Limestone medium brown and dark brown. Generally fine crystalline. No visible porosity. Fossil fragments scattered throughout. Argillaceous in part. Minor black shale. Dark brown limestone is bituminous in part.

6060-6080

Limestone interbedded as above with minor shale and dark grey green well indurated shale.

SAMPLE & CORE RECORD

WELL NAME: Unical Pan Am Trainor L-59

INTERVAL	DESCRIPTION
FROM TO	
6080-6170	Limestone medium brown generally fine crystalline with fossil fragments scattered throughout. Argillaceous in part. No visible porosity. Minor dark grey to black splintery shale and light grey earthy (in part) mottled tight limestone. Minor scattered free quartz grains.
6170-6180	Limestone medium brown and dark brown mottled. Generally fine crystalline with no visible porosity. Argillaceous and silty in part. Fossil fragments scattered throughout. Becomes dolomitic in part. Minor scattered varicolored quartz grains.
	ELK POINT DOLOMITE 6180' (-4294)
6180-6220	Dolomite medium brown-dark brown, mottled in places. Slightly argillaceous. No visible porosity. Generally fine crystalline. Minor light brown grey limestone, argillaceous light. Minor scattered varicolored (red, clear, white) quartz pebbles, angular.
6220-6280	Dolomite medium brown fine crystalline. Anhydritic in part. Scattered white and light brown anhydrite. Very poor scattered intercrystalline porosity in dolomite.
6280-6335	Dolomite light grey brown and medium brown. Generally fine crystalline. No visible porosity. Argillaceous in part and silty. Interbedded with white, light grey, and light brown anhydrite. Minor scattered varicolored quartz grains sub-

SAMPLE & CORE RECORD

WELL NAME		Interval Pan Am Trainor L-59	
INTERVAL		DESCRIPTION	
FROM	TO		
		angular and sub-rounded and dark grey green micro-micaceous shale.	
		REDBEDS 63351 (-4449)	
6335-6350		Sandstone light grey and grey green, quartzitic, glauconitic in part and tight. Sub-angular to sub-rounded grains, in homogeneous slightly calcareous matrix. Interbedded with dolomite, light brown, fine crystalline, argillaceous in part, and minor maroon shale and white anhydrite. Occasional scattered free well rounded frosted quartz grain. Minor light grey green waxy shale.	
6350-6360		Dolomite medium brown, fine crystalline with interbeds of white and light grey anhydrite. Anhydrite is earthy in part. Minor light green and grey sandstone and green shale.	
6360-6370		Dolomite medium and light brown. Fine crystalline, no visible porosity. Anhydritic in part. Minor sandstone generally light grey and light grey green sub-angular sub-rounded, tight. Minor amount light green and maroon slightly calcareous shale.	
6370-6380		Sandstone, clear, white, varicolored. Occasional free frosted quartz grain. Minor light brown and medium brown dolomite and anhydrite.	

SAMPLE & CORE NO. 22

WELL NAME

Don Am Trainor L-59

INTERVAL

DESCRIPTION

FROM TO

6380-6390

Dolomite medium brown grading to red brown. Generally fine crystalline. Minor light grey and light brown dolomite and dark grey green shale.

6390-6420

Dolomite brown red, cryptocrystalline, very argillaceous grading to brown red shale. Minor free quartz and medium green shale. Scattered minor light grey cryptocrystalline dolomite.

6420-6450

Dolomite maroon red and brown red, generally cryptocrystalline very argillaceous becomes shaly in part. Minor light grey dolomite.

6450-6460

Shale maroon red and light grey green silty and slightly calcareous in part. Minor light grey and grey brown dolomite. Scattered quartz grains.

6460-6479

Dolomite light grey and light grey brown, fine crystalline tight. Interbedded with light green shale and maroon shale and dolomite.

PRECAMBRIAN 6479' (-4593)

6479-6505

Quartz diorite (?) Albite (?) grey and grey green some grey red. Biotite flakes common and encrusted on quartz. Cleavage on crystals apparent.

FINAL TOTAL DEPTH 6505'

GENERAL REMARKS

The Unical Pan Am Trainor L-59 exploratory well was drilled to evaluate the potential of the Slave Point Formation near its anticipated facies or reef front. The nature and composition of the carbonates of the facies front provide information on the extent of reef development in proximity to the front. It is believed that the L-59 well is situated in the back-reef facies environment. A field examination of the core recovered from the Slave Point Formation and other factors reveal the following evidence for this observation.

1. The top of the formation was encountered high to prognosis which, although not conclusive, adds support to the thesis that the well is situated in a back-reef position.
2. The formation consists entirely of limestone and no dolomitization was observed. Dolomitization of limestones at many places occurs in a narrow zone bordering the reef front. The majority of Slave Point gas production in northern British Columbia is from this zone.

3. Faunal assemblages observed in the core suggest a normal back-reef environment (an abundance of Amphipora, with scattered stromatoporoids and a very few brachiopods and pelecypods). The rock type itself, a calcarenite with scattered skeletal remains (reef detritus?), suggests a back-reef environment.
4. Calcite paste observed at several places in the core may be derived from the organic reef and represent crushed skeletal material deposited in the back-reef environment.
5. The presence of dark colored shales as individual beds, as laminae, and lining stylolitic partings and vugs is indicative of a terrigenous material carried into the back-reef and deposited in quiet restricted water.

The underlying Elk Point Group, which consists mainly of interbedded dolomites and anhydrite with some limestones, is representative of a fluctuating depositional environment. The lower part of the stratigraphic succession was probably deposited in a relatively stable euxinic

environment. The dark colored limestone present at the top of the formation represents more complete submergence and a greater influx of marine water. The L-59 well is situated northwest of the Presquille barrier reef and the relatively thin section of Elk Point encountered in the well may be a result of the presence of the Tathlina uplift which was a positive element during Elk Point deposition in this area. The pre-Elk Point beds also expressed this thinning, as the top of the Precambrian was encountered high.

Respectfully submitted

V. Zay Smith Associates Ltd.

F. Kent Wallace

F. Kent Wallace, Senior Geologist

100

1. The first part of the paper discusses the importance of the research and the objectives of the study.

2. The second part of the paper discusses the methodology used in the study.

3. The third part of the paper discusses the results of the study.

4. The fourth part of the paper discusses the conclusions of the study.

5. The fifth part of the paper discusses the implications of the study.

6. The sixth part of the paper discusses the limitations of the study.

7. The seventh part of the paper discusses the future research.

8. The eighth part of the paper discusses the acknowledgments.

9. The ninth part of the paper discusses the references.

10. The tenth part of the paper discusses the appendices.

1

100

SAMPLE NUMBER	DEPTH REPRESENTED FEET	FOOTAGE REPRESENTED	PERMEABILITY TO AIR		PERM. X FEET	POROSITY PER CENT	POROSITY FLUID X	DENSITY	VISUAL EXAMINATION
			HORIZONTAL) K MAX	VERTICAL K 90°)					
CORE NO. 2 5830' - 5890' (Rec. 60.0') (13 boxes)									
-	5830.0-5836.4	6.4	-	-	-	-	-	-	Dense
11	5836.4-5839.2	2.8	0.27	0.21	0.756	0.3	0.11	2.68	Scattered PPV, Sty F.
12	5839.2-5841.7	2.5	0.18	0.08	0.450	1.1	2.7	2.66	Few SV, Stylol.
13	5841.7-5843.9	2.2	0.06	0.06	0.132	1.1	2.1	2.65	I. Stylolite
14	5843.9-5845.9	2.0	0.06	0.06	0.120	1.5	3.1	2.64	I. few PPV, Stylolite
15	5845.9-5847.8	1.9	0.22	0.13	0.418	0.8	1.5	2.67	Few PPV, Stylol. Pyrite
16	5847.8-5849.5	1.7	0.06	0.03	0.102	0.4	0.11	2.69	Dense, F.
17	5849.5-5851.7	2.2	0.22	0.14	0.484	0.6	1.5	2.68	Few PPV, Stylol.
18	5851.7-5854.2	2.5	0.07	0.07	0.175	1.6	4.1	2.64	I.
19	5854.2-5855.1	0.9	0.12	0.09	0.108	1.7	1.5	2.64	SV. PPV.
20	5855.1-5856.9	1.8	0.86	0.86	1.548	2.6	4.11	2.62	SV. PPV.
21	5856.9-5858.9	2.0	0.19	0.16	0.380	3.0	6.11	2.59	I. few PPV.
22	5858.9-5860.6	1.7	0.32	0.08	0.544	2.3	3.91	2.61	I. few PPV, Calcite
23	5860.6-5862.3	1.7	0.09	0.03	0.153	0.8	1.51	2.67	Few PPV, Stylolite
24	5862.3-5863.5	1.2	0.11	0.08	0.132	0.3	0.51	2.69	Few PPV.
-	5863.5-5890.0	26.5	-	-	-	-	-	-	Dense

PPV - Pinpoint vugs

Stylol. - Stylolite

SV - Small vugs

F - Fracture

A - Anhydrite

I - Intergranular

Core with Permeability 0.00 to less than 0.10 Md.

Total footage of core with permeability 0.00 to less than 0.10 millidarcys-----	32.5'	
Weighted average porosity of core with permeability 0.00 to less than 0.10 millidarcys-----	0.7%	(23.73)
Per cent of analyzed core having permeability 0.00 to less than 0.10 millidarcys-----	59.2%	
Weighted average horizontal permeability of core with permeability 0.0 to less than 0.10 md.-----	0.05 md.	(1.754)

Core with Permeability 0.10 to 0.99 Millidarcys

Total footage of core with 0.10 to 0.99 millidarcys permeability-----	22.4'	
Weighted average porosity of core with 0.10 to 0.99 millidarcys permeability-----	1.4%	(30.62)
Per cent of analyzed core having 0.10 to 0.99 millidarcys permeability-----	40.8%	
Weighted average horizontal permeability of core with 0.10 to 0.99 millidarcys-----	0.32 md.	(7.142)

Core with Permeability 1.0 to 9.9 Millidarcys - Nil

Core with Permeability 10 Millidarcys and Greater - Nil

Cored Interval-----	5770' - 5890'	
Total footage-----	120.0'	
Footage analyzed-----	54.9'	
Footage not analyzed-----	65.1'	
Weighted average porosity of core analyzed-----	1.0%	(54.35)
Weighted average horizontal permeability of core analyzed-----	0.16 md.	(8.896)

Note: Figures in parentheses indicate porosity feet and permeability feet

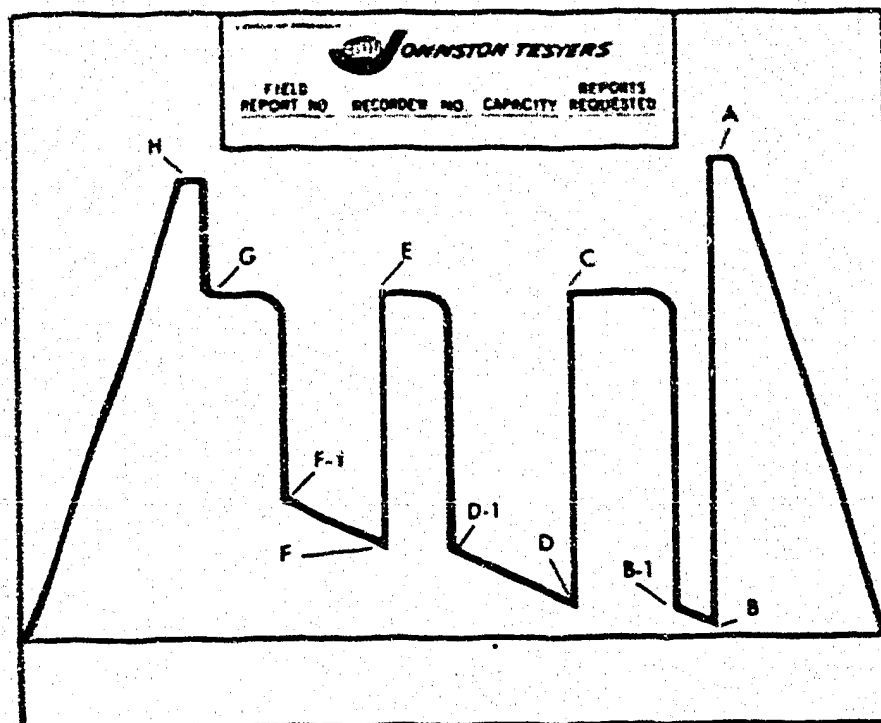
JOHNSTON TESTERS

TEST DATA								
Formation	Slave Point		Zone Thickness	Fr	Elevation	Not Reported		
Interval	5660	In	5770	ID	5770	Bottom Hole Choke Size		
Type of Test	Open Hole, Bottom Hole					Fluid Cushion Type		
Time Started in Hole	0600	Hrs	Tool Open	Hrs	Amount			
First Flow	15	Min	Shut in	60	Min	TOOL SEQUENCE		
Second Flow	60	Min	Final Shut in	60	Min	Tool	Length	OD
Pulled Loose (ft)		Hrs	Out of Hole	Hrs		D.P. Sub.	.76	5 1/2"
Wt. Set on Packer	60,000	#	Pulled Loose Wt.	50,000	#	P.O. Sub.	.83	4 7/8"
Remarks	Tool was Chased 30 Feet During Test Period.					Shut in Tool	6.05	4 3/4"
						Hyd. Tool	7.71	4 3/4"
						Jars	4.10	4 3/4"
Description of Blow During Test	Weak Blow Increasing Slightly Throughout Test.					Safety Jt.	1.77	4 1/2"
						T.C. & Pkr.	6.75	4 3/4"
						T.C. & Pkr.	5.50	4 3/4"
						Total	33.47	
						Stub	1.20	
GAS BLOW MEASUREMENTS						Perf.	10.00	4 3/4"
Measured with	ID, Riser or Est. ☐					Recorder	5.55	4 3/4"
Type of Instrument						Recorder	5.90	4 3/4"
						Sub.	.78	6"
Time	Size Choke	Reading Inches	Cubic Feet Day			D.C.	85.50	
						Sub.	.80	6"
						B.N.	.94	4 3/4"
						Total Interval	111.67	
FLUID RECOVERY								
Was Test Reverse Circulated Yes ☐ No ☒								
Fluid Recovered Total 240' mud						Total Length 145.14		
Description of Fluid Recovered						MUD AND HOLE DATA		
						Mud Type Gel and Chem W.L.		
						Filter Cake 2/32 Visc. 70 Wt. 9.0		
						Time Taken February 8, 1966 @ 2200 hrs.		
						Contractor Arrow Drilling		
Remarks Test Satisfactory.						Rig No.		
						Drill Pipe Size		
						Drill Collar Size 2 7/8 ID Length 520.69'		
						Main Hole Size 8 3/4"		
						Rat Hole Size		
Co. Rep.	C. Warke					Date February 9/66		
Tester	R. Miller					Address 709 - 8th Avenue S. W., Calgary, Alberta		
District	Fort St. John					Ticket No. C 6491		
Company	Union Oil Company of Canada					Test No. 1		
Well Name	Union Pan Am Trainor Lk. L-59					J.T.L. Test No. 1		
Number	60°-28'-33"N-120°-40'-50"W					Field Trainor Lake		
Formation	Slave Point DST#1					Province N.W.T.		
and Interval	5660-5770					Consultant		
Distribution of Reports						5 - Calgary, 1 - Data Center		

PRESSURE DATA					TIME DATA	
INSTRUMENT No.		AK1-2565	AK1-1936		FIELD REPORT No. C 6491	
CAPACITY (gals)		4500	7450			
INSTRUMENT DEPTH		5672	5677			
INSTRUMENT OPENING		Outside	Outside			
PRESSURE GRADIENT (psi/ft)						
WELL TEMP. °F						
INITIAL HYDROSTATIC	A	2676#	2680#		TIME GIVEN	TIME COMPUTED
FIRST FLOW	B	217#	231#		MIN.	MIN.
INITIAL SHUT-IN	C	2021#	2022#		MIN.	MIN.
SECOND FLOW	D	212#	221#		MIN.	MIN.
D-1		139#	139#			
SECOND SHUT-IN	E				MIN.	MIN.
THIRD FLOW	F				MIN.	MIN.
FINAL SHUT-IN	G	1419#	1420#		MIN.	MIN.
FINAL HYDROSTATIC	H	2620#	2627#		CLOCK TRAVEL	IN/MIN.

[illegible]

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.

Ticket Number

C 6491

Recorder Number

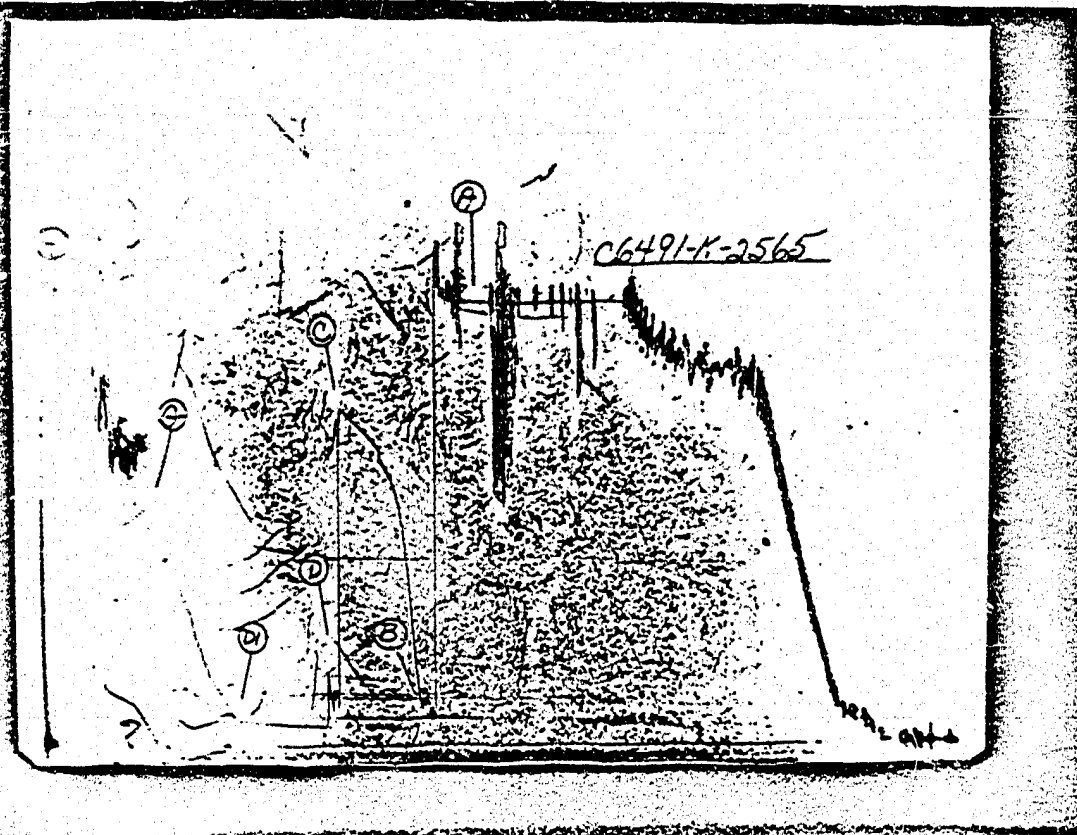
AK1-2565

Capacity

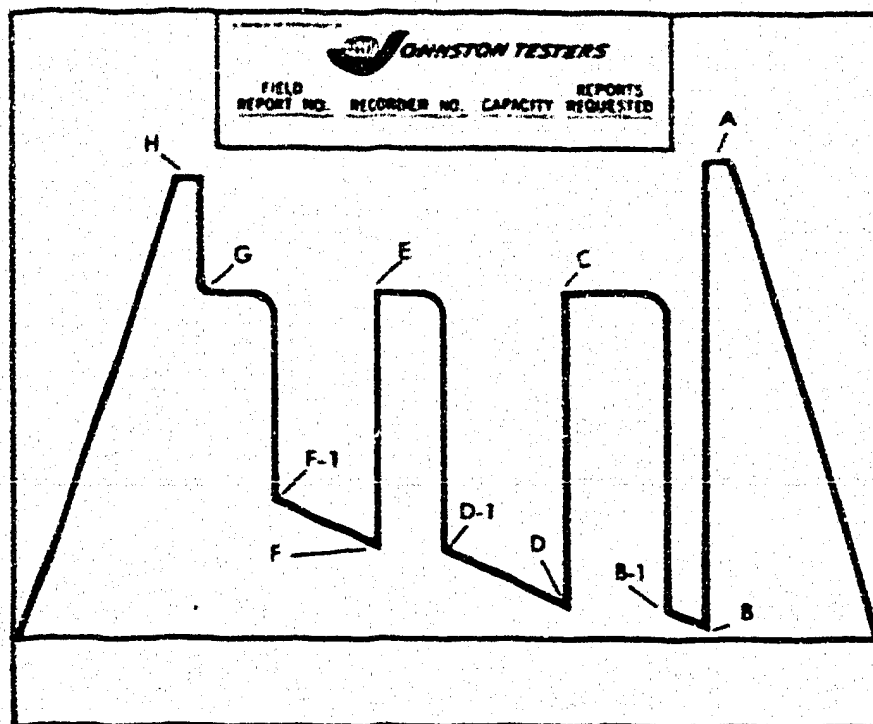
4500

Reports Requested

6



GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2. Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z—Special pressure points such as pumping pressures recorded for formation breakdown.

Ticket Number

C 6491

Recorder Number

AK1-1936

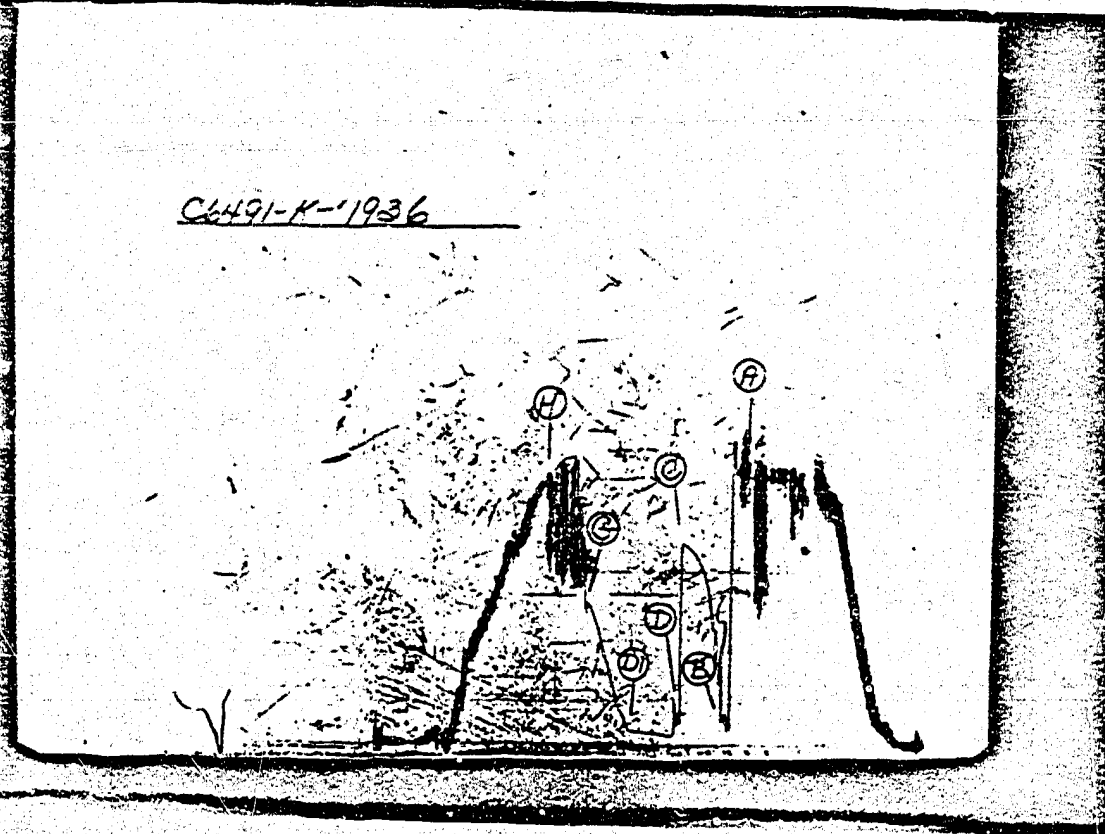
Capacity

7450

Reports Requested

6

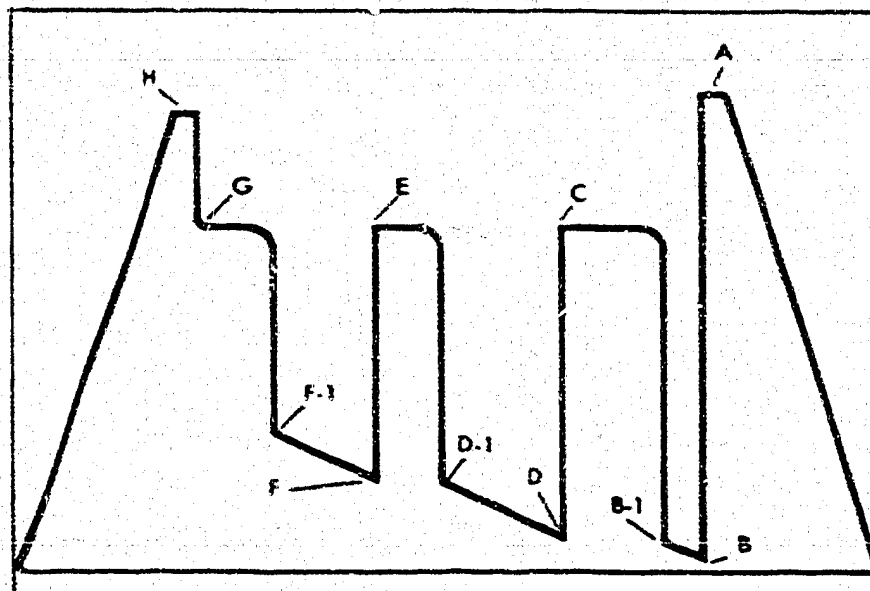
C6491-K-1936



JOHNSTON TESTERS

TEST DATA				Description	
Slave Point	52770	Thickness	30 - 40	Bottom Hole Choke Size	NOT REPORTED
Open Hole, Bottom Hole	52890	ID	52890	Fluid Circulation Type	1/2"
Time	0820	Hrs	Tool Open	1730	Hrs
Min	10	Min	Tool Shut In	60	Min
Min	70	Min	Out of Hole	1830	Hrs
Min	1550	Min	Rated Loss Wt	10,000	#
Min	50,000	Min			
Description of Blow During Test				WEAK BLOW, DEAD IN 10 MINUTES.	
GAS BLOW MEASUREMENTS				TOOL SEQUENCE	
Measurements with				Tool	
Type of Instrument				Length	
ID, Riser or Est. ☐				OD	
Time	Size, Choke	Reading, Inches	Cubic Feet, Day	D.P. Sub.	.76
				P.O. Sub.	.83
				SHUT IN TOOL	6.05
				HYD. TOOL	7.71
				JARS	6.20
				SAFETY JT.	1.77
				T.C. & P.R.	6.75
				T.C. & P.R.	6.04
				TOTAL	36.11
				STUB	1.20
				PERF.	10.00
				RECORDER	5.55
				RECORDER	5.90
				PERF.	5.00
				SUB.	.80
				D.C.	88.00
				SUB.	.80
				B.N.	.94
				TOTAL INTERVAL	118.19
FLUID RECOVERY				MUD AND HOLE DATA	
When Test Reverse Circulation Yes ☐ No ☒				Mud Type	
Fluid Recovered - Total				GEL & CHEM	
10'				WL	
Description of Fluid Recovered				Filter Cake	
10' DRILLING FLUID.				2/32 Visc. 150	
				Wt 9.5	
				Time Taken	
				FEBRUARY 13, 1966 @ 2400 HRS.	
				Contractor	
				ARROW DRILLING	
Remarks				Fig No.	
TEST SATISFACTORY.				6	
				Drill Pipe Size	
				4 1/2 XH	
				Drill Collar Size	
				2 7/8 ID Length	
				Main Hole Size	
				8 3/4"	
				Rat Hole Size	
Co. Rep.	C. WARK	Ticket No.	C-6493	Date	FEBRUARY 14/66
Tester	R. MILLER	Address	709 - 8TH AVENUE S.W.	City	CALGARY, ALBERTA
Company	UNION OIL COMPANY OF CANADA	Test No.	2	J.T.L. Test No.	2
Well Name	UNION PAN AM TRAINOR LK. L 59	Field	TRAINOR LK.	Province	N.W.T.
Number	#60°-28'-33"N-120°-40'-50"-W	Consultant			
Formation	SLAVE POINT				
and Interval	2770-2890				
Distribution of Report:				5 - CALGARY	
				1 - DATA CENTER (ENCLOSED)	

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.

FIELD
REPORT NO

RECORDER NO

CAPACITY

REPORTS
REQUESTED

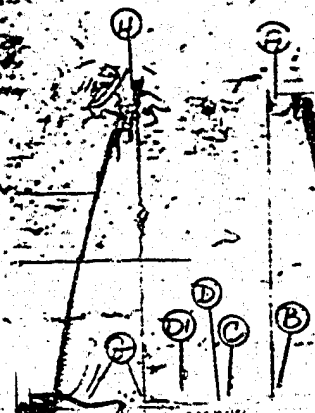
C 6493

AKI 1936

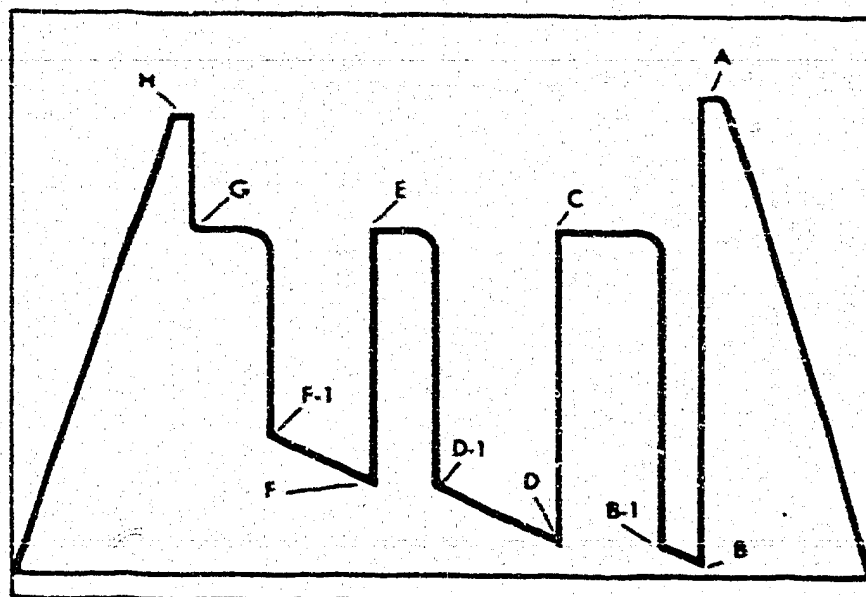
7450

6

C6493-K-7980



GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1. Initial Flow Pressures
- C. Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E. Second Shut-In
- F, F-1, F-2. Third Flow Pressures
- G. Final Shut-In
- H. Final Hyd. Pressures
- Z—Special pressure points such as pumping pressures recorded for formation breakdown.

FIELD
REPORT NO.

RECORDER NO.

CAPACITY

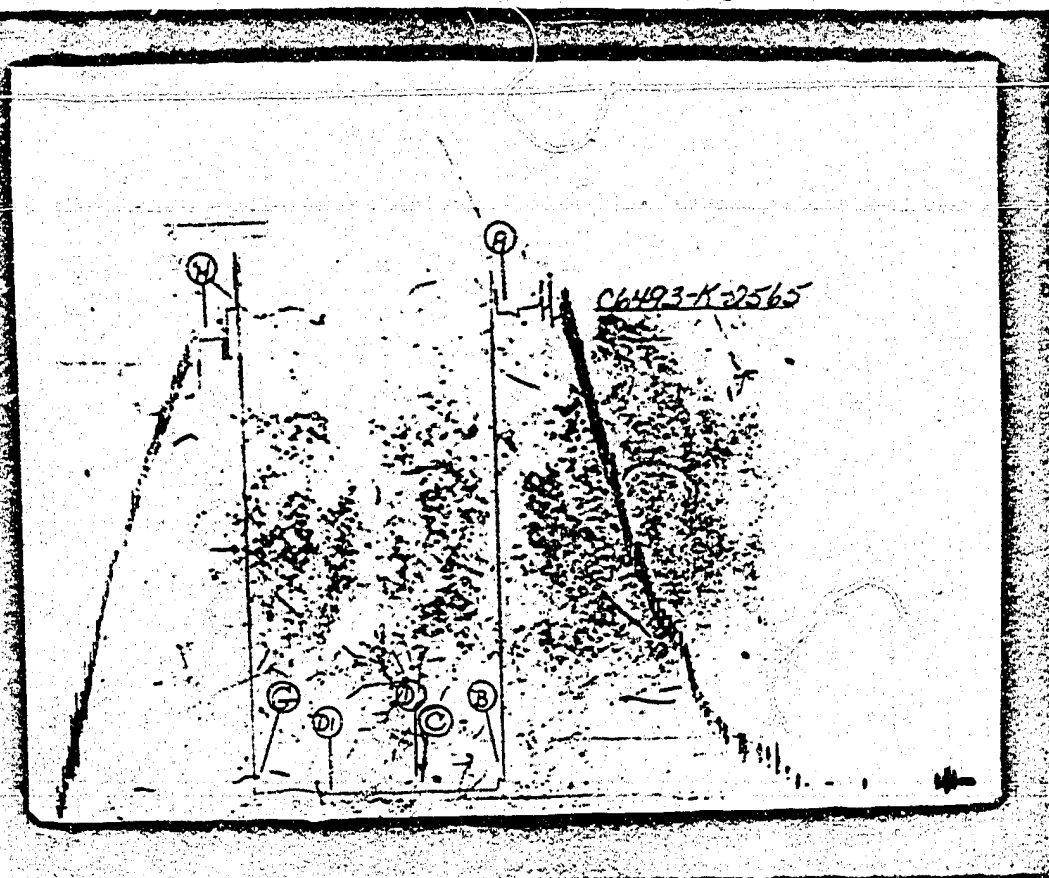
REPORTS
REQUESTED

C-6493

AK1 2565

4500

6



Formation Test
TECHNICAL REPORT

3

UNION OIL COMPANY
UNION PAN AM TRINOR LK L-591
#60°-28'-33"N-120°-40'-50"-W F
6170-6305



Formation Test TECHNICAL REPORT

This **Technical Report** supplies complete field data on type and amount of formation fluid recovered, pressure recordings and description of all tools run. Obtaining this information with an open hole test provides the only dynamic evaluation of a formation before completing the well.

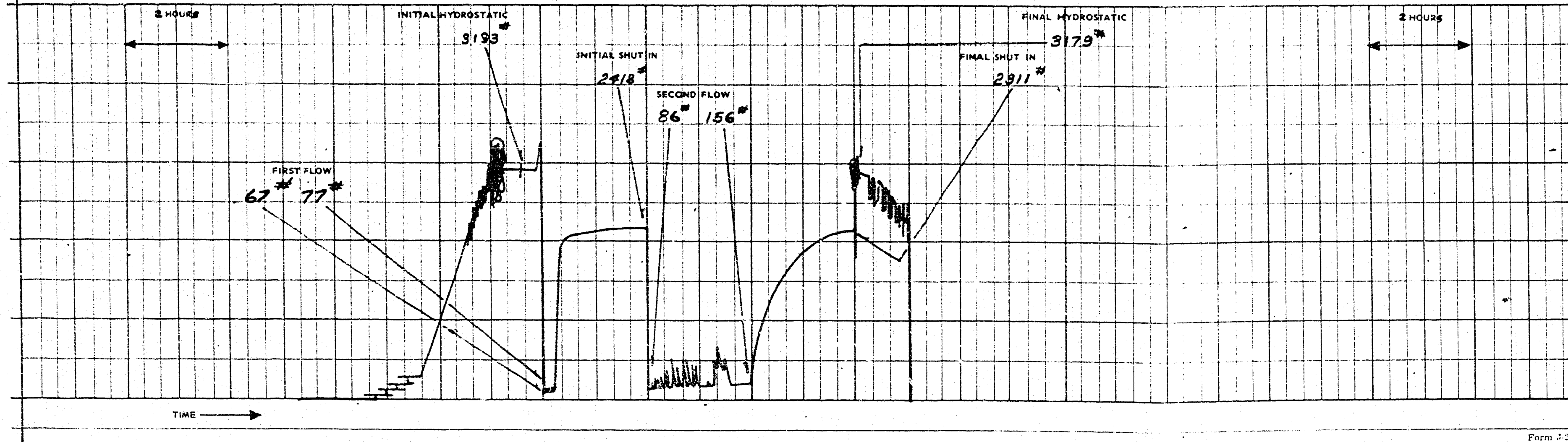
Johnston's **Special Data Analysis** provides valuable calculated data on reservoir pressure, flow capacity, effective permeability, well bore damage, radius of investigation, and potentiometric surface. Included also is a valuable written analysis of these data that can provide important help in planning your completion.

JOHNSTON TESTERS

Pressure Log*

Field Report No. C-6925
 Instrument Number AH1-2085
 Capacity 99.00 p.s.i.
 Depth 6200 ft.

* a continuous tracing of the original chart



[illegible]

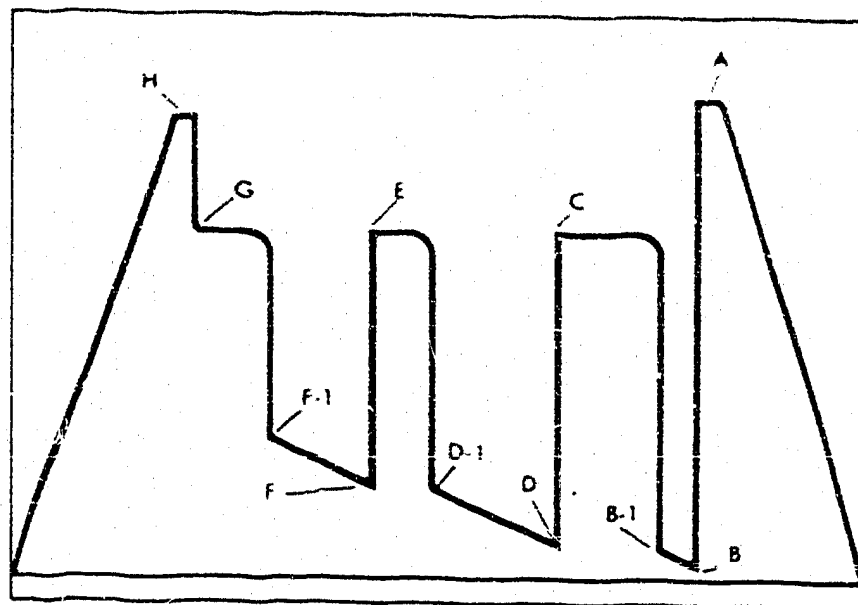
PRESSURE DATA

INSTRUMENT NO.		AKI-2085	T-402	FIELD REPORT NO. C-6425	
CAPACITY DWS		4400	7000		
INSTRUMENT DEPTH		5200	5206		
INSTRUMENT OPENING		OUTSIDE	OUTSIDE		
PRESSURE GRADIENT WIRE				TIME DATA	
WELL TEMP. °F		248°	248°		
INITIAL HYDROSTATIC	A	3193#	3199#	TIME GIVEN	TIME COMPUTED
FIRST FLOW	B	67#	100#	MINS	MINS
B-1		77#	105#		
INITIAL SHUTIN	C	2418#	2399#	MINS	MINS
SECOND FLOW	D	86#	119#	MINS	MINS
D-1		156#	182#		
SECOND SHUTIN	E			MINS	MINS
THIRD FLOW	F			MINS	MINS
FINAL SHUTIN	G	2311#	2300#	MINS	MINS
FINAL HYDROSTATIC	H	3179#	3199#	CLOCK TRAVEL	IN/MIN

PRESSURE INCREMENTS

[illegible]

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2. Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.

 **JOHNSTON TESTERS LTD.**

FIELD
REPORT NO.

C-6425

RECORDER NO.

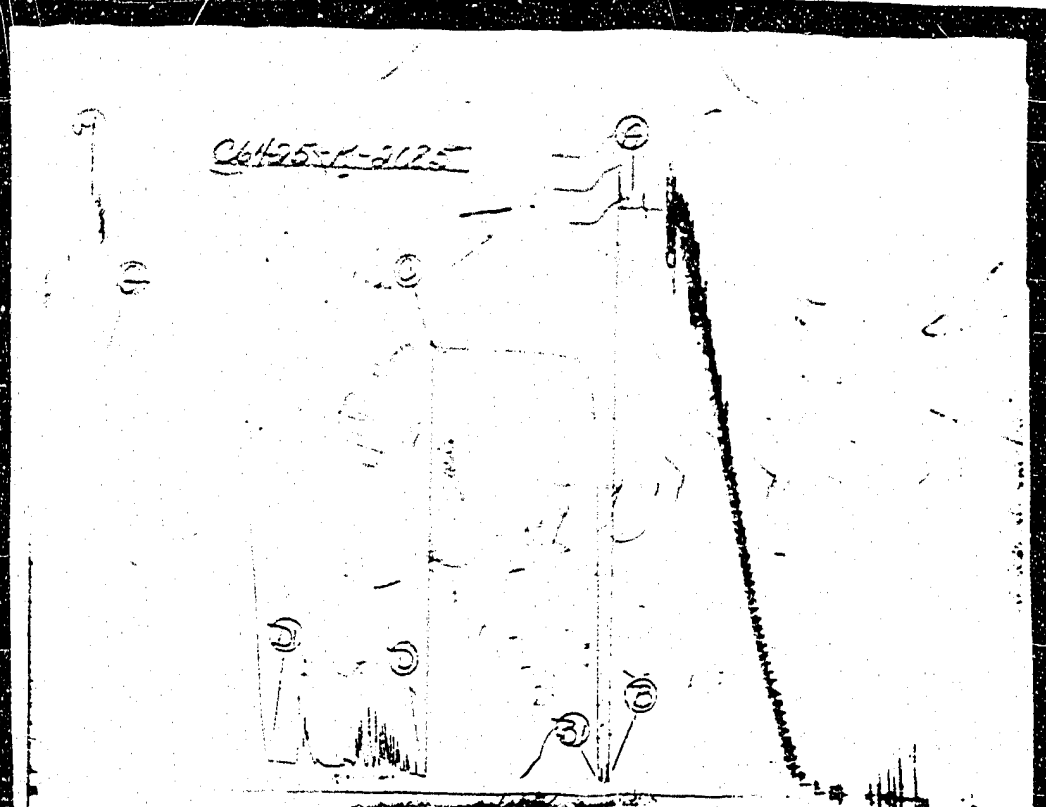
AK1-2085

CAPACITY

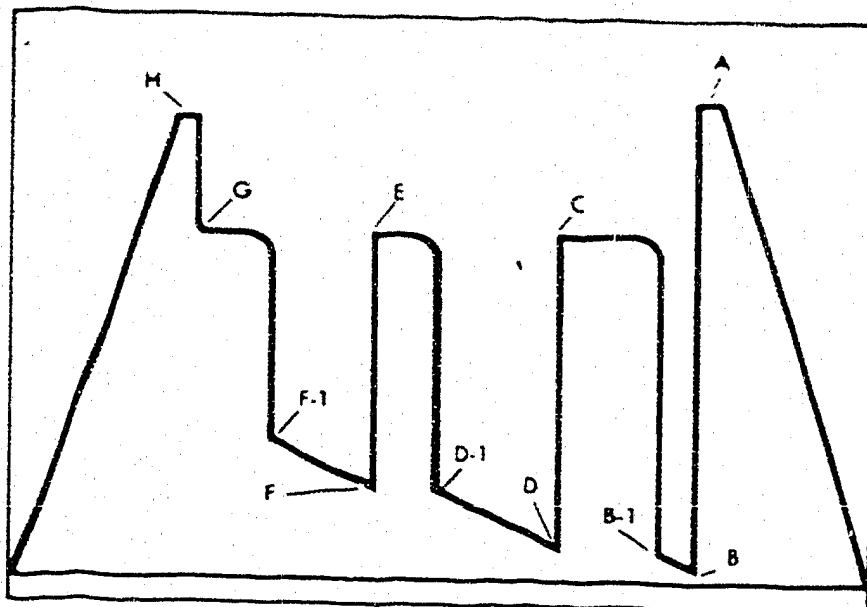
4400

REPORTS
REQUESTED

6



GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.

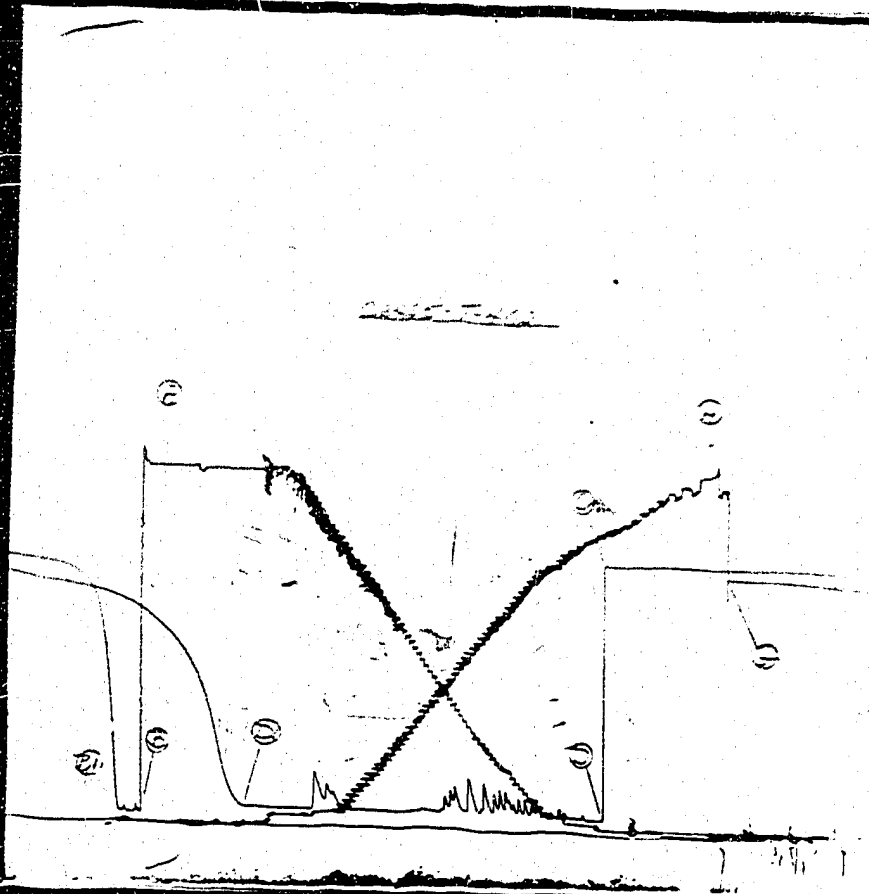
JOHNSTON TESTERS LTD.

FIELD
REPORT NO.
C-6425

RECORDER NO.
T-402

CAPACITY
7000

REPORTS
REQUESTED
6



Formation Test
TECHNICAL REPORT

4

NIOM OIL COMPANY OF CANADA	A
NIOMAL PAN AM TRAINER LK. L-59	Ti
60°-28'-33"N-120°-40'-50"-W	Fi
5640-5780	



Formation Test TECHNICAL REPORT

This Technical Report supplies complete field data on type and amount of formation, the recovery, pressure recovery, and description of all tools run. Combining this information with a permeability test provides the only detailed evaluation of a formation before completing the well.

Johnston's Special Data Analysis provides valuable calculated data on reservoir pressure, flow capacity, effective permeability, well bore damage, radius of investigation, and potentiometric surface. Included also is a valuable written analysis of these data that can provide important help in planning your completion.

Nester	S. JANZ		
District	FORT ST. JOHN	Ticket No.	C-7176
Company	UNION OIL COMPANY OF CANADA	Address	709 - 8TH AVENUE S.W., CALGARY, ALBERTA
Well Name	UNION PAN AM TRINOR LK. L-59	Test No.	4
Number	#60°-28'-33"N-120°-40'-50"-W	Field	WILDCAT
Formation	5640-5780	Province	N.W.T.
and Interval		Consultant	
Distribution of Reports	5 - CALGARY		
	1 - DATA CENTER (ENCLOSED)		

JOHNSTON TESTERS

[illegible]



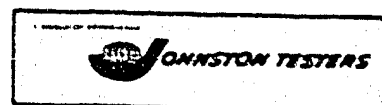
PRESSURE DATA

INSTRUMENT NO.		AKI-2085	T-402	FIELD REPORT NO. C 7176	
CAPACITY		4400	7000		
INSTRUMENT DEPTH		5676	5682		
INSTRUMENT OPENING		OUTSIDE	OUTSIDE		
PRESSURE GRADIENT				TIME DATA	
WELL TEMP.		248°	248°		
INITIAL HYDROSTATIC	A	2929#	2927#	TIME GIVEN	TIME COMPUTED
FIRST FLOW	B	94#	136#		
B-1		104#	144#	MIN.	MIN.
INITIAL SHUT IN	C	2247#	2260#		
SECOND FLOW	D	129#	184#	MIN.	MIN.
D-1		222#	240#		
SECOND SHUT IN	E			MIN.	MIN.
THIRD FLOW	F			MIN.	MIN.
FINAL SHUT IN	G	1611#	1630#		
FINAL HYDROSTATIC	H	2885#	2911#	MIN.	MIN.
				CLOCK TRAVEL	IN/MIN

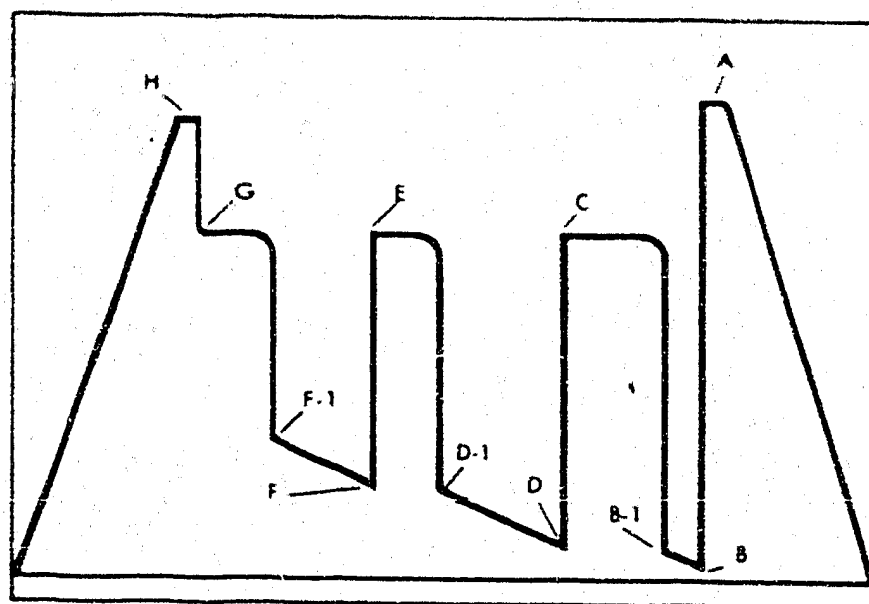
T-402 CALLED IN FOR RECALIBRATION

PRESSURE INCREMENTS

[illegible]



GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.



FIELD
REPORT NO.

C-7176

RECORDER NO.

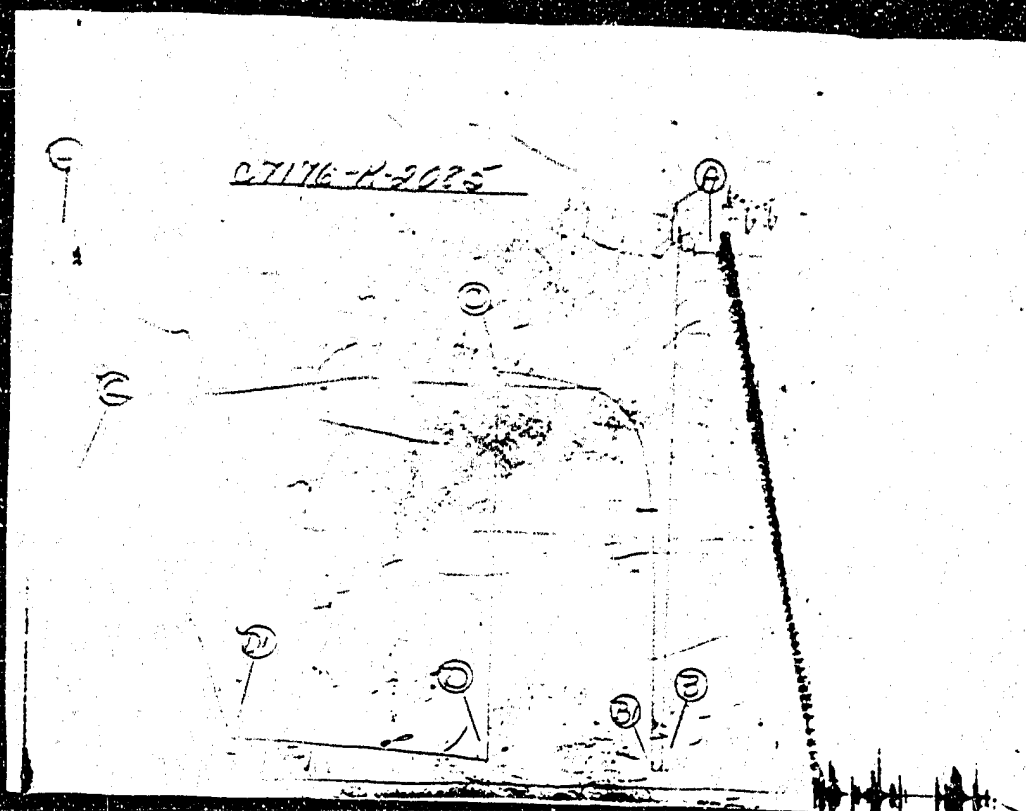
AK1-2085

CAPACITY

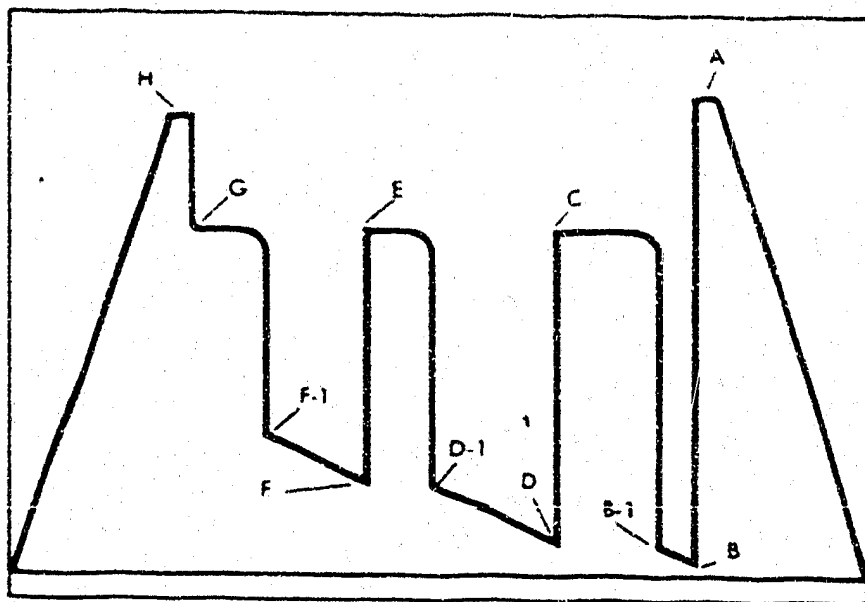
4400

REPORTS
REQUESTED

6



GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.

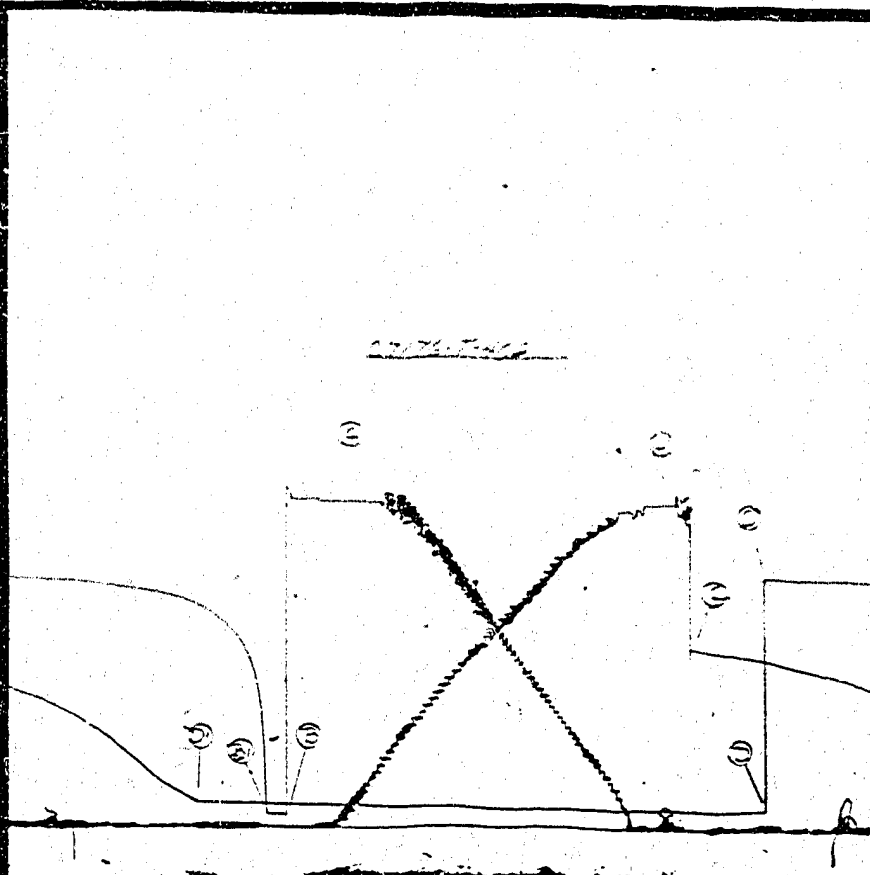
 **JOHNSTON TESTERS LTD.**

FIELD
REPORT NO.
C-7176

RECORDER NO.
T-402

CAPACITY
7000

REPORTS
REQUESTED
6



JOB NO. 629

OPERATOR LUNDA		LEASE LUNDA		WELL NO. L-59		FIELD OR DIST. W/C		COUNTY N.W.T.		STATE				
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. 6	DRILL PIPE STRING NO. SIZE 9 7/8	TOOL JOINT TYPE THD.	PUMPS			CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER		NO. MANUFACTURER TYPE STROKE LENGTH										
				1.										
				2.										
				3.										

[illegible]

JOB NO. 629

1

STANDARD DAILY DRILLING REPORT FORM

JOB NO.

OPERATOR		LEASE		WELL NO.	FIELD OR DIST.	COUNTY	STATE						
ARROW DRILLING COMPANY, LTD.		RIG NO.	DRILL PIPE STRING NO. SIZE	TOOL JOINT OD	PUMPS		CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER		TYPE THD.	NO.	MANUFACTURER	TYPE	STROKE LENGTH					
					1.								
					2.								
					3.								

[illegible]

JOB NO. 679

PLAY TOILET

100

STANDARD DAILY DRILLING REPORT FORM

629

STANDARD DAILY DRILLING REPORT FORM

JOB NO. 120

STANDARD DAILY DRILLING REPORT FORM

OPERATOR Union Oil Co		LEASE UNICAL PGM AM TANNER		WELL NO. L-59		FIELD OR DIST. W/C		COUNTY		STATE ALUT							
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. 6	DRILL PIPE STRING NO. SIZE 4 1/2	TOOL JOINT NO. 5 1/4 TYPE THD. YH	PUMPS			CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET		PERFORATIONS		CEMENT USED	OTHER	
					NO.	MANUFACTURER	TYPE		STROKE LENGTH			FROM	TO	FROM	TO		
					1.	EMCO	375		14			0	272			20024	2 1/2 CGL
					2.							0	1096			45054	2 1/2 CGL
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER R. DEGEN.			3.	GD	FXZ	12									

[illegible]

JOB NO. 40

STANDARD DAILY DRILLING REPORT FORM

JOB NO. 629

STANDARD DAILY DRILLING REPORT FORM

JOB NO. 499

STANDARD DAILY DRILLING REPORT FORM

JOB NO. 6074

OPERATOR Vernon Petroleum		LEASE Vernon Petroleum		WELL NO. L-54		FIELD OR DIST. Wingate		COUNTY N. W. T.		STATE							
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. 6	DRILL PIPE NO. SIZE 1 1/2	TOOL JOINT 5 TYPE THD. X 1 1/2	PUMPS			CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET		PERFORATIONS		CEMENT USED	OTHER	
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER					NO.		MANUFACTURER	TYPE	STROKE LENGTH	FROM	TO	FROM	TO		
							1.		1 1/2	1 1/2	11						
							2.		1 1/2	1 1/2	12						
							3.	1 1/2	1 1/2	12							

[illegible]

JOB NO. 629

STANDARD DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 24 DATE Feb 16/66

JOB NO. 629

OPERATOR UNION PAW AM	LEASE UNION PAW AM	WELL NO. 1-59	FIELD OR DIST. D. L. Cat	COUNTY D. OT	STATE
CONTRACTOR ARROW DRILLING COMPANY, LTD.	RIG NO. 6	DRILL PIPE STRING NO. SIZE LIE	TOOL JOINT 5 1/2 OD	PUMPS NO. MANUFACTURER TYPE STROKE LENGTH 1. 10-375 14 2. 2x2 12 3.	CASING & LINER RECORD SIZE WT. & GR. DEPTH SET FROM TO PERFORATIONS FROM TO CEMENT USED OTHER 13 3/4 0 272 2.058 2 1/2 C&C 9 7/8 0 1096 4.508 2 1/2 C&C
OPERATOR'S REPRESENTATIVE	CONTRACTOR'S TOOL PUSHER R. W. Green				

NO.	DRILLING ASSEMBLY	BIT RECORD	HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	TIME DISTRIBUTION - HOURS					MUD RECORD				
														MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	1:00	3:00	6:00
STANDS DP	FT.	RUN NO. 7												RIG UP/DOWN						WEIGHT			
SNGLS. DP	FT.	SIZE 8 3/4												DRILLING - ACTUAL						VISC.			
D.C. ID	FT.	MFG. HW												REAMING						W.L.C.C.			
RMR BODY OD	FT.	TYPE DWID												RUN CSG.						FLTR. CK.			
STB BODY OD	FT.	NOZ. NO. 2												W.C.C.						PH			
SUBS OD	FT.	SIZE 1 1/4												TRIP OUT						SD. CONT.			
BIT OR C.B.	FT.	SER. NO. 67962												TRIP IN									
	FT.	DEPTH OUT 1200												DEVIATION SURVEY									
	FT.	CUMULATIVE HOURS RUN 1.00												CHECK R.O.P.									
KELLY DOWN	FT.	COND. OF BIT 2.00												EQUIP. REPAIR									
TOTAL	FT.	REAMER CUTTER NO. 3.00												LOST. CIRC.									
WT. OF STRING	LBS.	TYPE												FISH									
FOOTAGE DRILLED 6.00														RIG SERVICE 24					MUD RECORD				
DRILLER John Anderson														TIME 9:00 12:00 3:00					WEIGHT 9.5 9.5				
STANDS DP	FT.	RUN NO. 7												CIRCULATE						VISC.			
SNGLS. DP	FT.	SIZE 7 1/4												REASON CORE						W.L.C.C.			
D.C. ID	FT.	MFG. HW												LOG						FLTR. CK.			
RMR BODY OD	FT.	TYPE DWID												TRIPS (DAY-WORK)						PH			
STB BODY OD	FT.	NOZ. NO. 2												(A) DRILL IN						SD. CONT.			
SUBS OD	FT.	SER. NO. 17962												(B) PERFORATING									
BIT OR C.B.	FT.	DEPTH OUT 7												(C) RUNNING TUBING									
	FT.	CUMULATIVE HOURS RUN 7.00												(D) SWABBING									
KELLY DOWN	FT.	COND. OF BIT 7.00												(E) TESTING WIRE									
TOTAL	FT.	REAMER CUTTER NO. 7.00												(F) ACIDIZING									
WT. OF STRING	LBS.	TYPE												(G) FRACTURING									
FOOTAGE DRILLED 7.00														TOTALS 8.8					TIME 5:00 9:00 11:00				
DRILLER John Anderson														TOTAL HRS.					WEIGHT 11 11 11				
STANDS DP	FT.	RUN NO. 7												NO. LINES						VISC.			
SNGLS. DP	FT.	SIZE 7 1/4												SIZE						W.L.C.C.			
D.C. ID	FT.	MFG. HW												SLIPPED @						FLTR. CK.			
RMR BODY OD	FT.	TYPE DWID												CUT @						PH			
STB BODY OD	FT.	NOZ. NO. 2												TOTAL TRIPS						SD. CONT.			
SUBS OD	FT.	SER. NO. 17962												TON MI. SINCE LAST CUT									
BIT OR C.B.	FT.	DEPTH OUT 7												LINE ON SPOOL									
	FT.	CUMULATIVE HOURS RUN 7.00																					
KELLY DOWN	FT.	COND. OF BIT 7.00																					
TOTAL	FT.	REAMER CUTTER NO. 7.00																					
WT. OF STRING	LBS.	TYPE																					
FOOTAGE DRILLED 7.00														TO BE COMPLETED BY TOOLPUSHER:					MUD & CHEMICALS ADDED				
DRILLER John Anderson														NO. OF DAYS FROM SPUD 26					TYPE AMT. TYPE AMT.				
														CUMULATIVE ROTATING HRS. 23 1/2									
														DAYWORK HOURS TODAY:									
														W.D.P. W.O.D.P. SIGNED: R. W. Green									
														TOOLPUSHER									

JOB NO.

[illegible]

JOB NO. 625

[illegible]

NO.	DRILLING ASSEMBLY			BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHCD PUMPS RUN			
	STANDS	DP	FT.	RUN NO.										LINER SIZE	S.P.M.	LINER SIZE	S.P.M.				
	STANDS	DP	FT.	RUN NO.																	
	SNGLS.	DP	FT.	SIZE																	
	D.C.	ID		MFG.																	
		OD	FT.	TYPE																	
	RMR BODY	OD	FT.	N.O.Z.	NO.	DEVIATION RECORD:		DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION					
	STB BODY	OD	FT.		SIZE																
	SUBS	OD	FT.	SER. NO.		HOURS FROM TO		IN SPACE BELOW REPORT ALL ACTIVITIES: ACCIDENTS, DRILLING, TESTING, DEFECTS TO MACHINERY, ETC.						HOURS FROM TO		IN SPACE BELOW REPORT ALL ACTIVITIES: ACCIDENTS, DRILLING, TESTING, DEFECTS TO MACHINERY, ETC.					
	BITOR C.B.		FT.	DEPTH OUT		12.00	9.00	Hoist To Test.													
			FT.	CUMULATIVE HOURS RUN		4.00	6.00	Make up Packer													
	KELLY DOWN		FT.	COND. OF BIT		6.00	8.00	Running in w/ Packer.													
	TOTAL		FT.	REAMER CUTTER NO.				(Run in slow)													
	WT. OF STRING		LBS.	TYPE																	
				FOOTAGE DRILLED																	
	DRILLER																				

[illegible][illegible]

JOB NO. 629

DAILY DRILLING REPORT		REPORT NO. 31		DATE FEB 13 1966		WELL NO. L-59		FIELD OR DIST. WINDCAT		COUNTY N.W.T.		STATE	
OPERATOR Union Pac. Am.		LEASE Union-Pac. Am. - TRAINOR		RIG NO. 6		DRILL PIPE STRING NO. SIZE 4 1/2		TOOL JOINT 5 3/4 OD		TYPE THD. XH.			
CONTRACTOR ARROW DRILLING COMPANY, LTD.		CONTRACTOR'S TOOL PUSHER B. GREEN		PUMPS		CASING & LINER RECORD		SIZE 15 1/8		WT. & GR. 932		DEPTH SET FROM TO 0 222	
				NO. 1		MANUFACTURER Emeco		TYPE 375		STROKE LENGTH 14		PERFORATIONS FROM TO	
				NO. 2		G.D.		EX2		12		CEMENT USED 200 SKS	
				NO. 3								OTHER 270 Cal	
THE DISTRIBUTION UNITS													

[illegible]

JCB NO. 629

OPERATOR UNION PAN-AM		LEASE UNION-PAN-AM-TRAINOR L-59		WELL NO. WILDCAT		FIELD OR DIST. NWT		COUNTY		STATE				
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. 6	DRILL PIPE STRING NO. SIZE H5	TOOL JOINT 5 3/4 OD	PUMPS		CASING & LINER RECORD	SIZE 1 3/8	WT. & GR.	DEPTH SET FROM TO 0 222	PERFORATIONS FROM TO	CEMENT USED 200 Sacs	OTHER	
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER R. W. B. R.			NO.	MANUFACTURER		TYPE	STROKE LENGTH					
					1.	EMSCO		D-375	14					
					2.	GD		FAB	12					
					3.									

[illegible][illegible]

NO.	DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	
	STANDS/ DP	FT.	RUN NO.	SIZE									LINER SIZE	S.P.M.	LINER SIZE	S.P.M.		
57	STANDS/ DP	5268.39 FT.	RUN NO.	6														
	SNGLS. DP	FT.	SIZE	8 1/16	6	2	5859	5890	31	94	12	1200	6	60	6	-	-	
18	ID		MFG.	CHRIS														
	D.C.	6 1/2 OD	520.69 FT.	TYPE														
	RMR BODY OD	FT.	NOZ.	NO.														
	STB BODY OD	FT.	SIZE															
1	SUBS OD	350 FT.	SER. NO.	E08504														
	OR C.B.	73.05 FT.	DEPTH OUT															
		FT.	CUMULATIVE HOURS RUN	12 1/2														
	KELLY DOWN	25.00 FT.	COND. OF BIT															
	TOTAL	5890 FT.	REAMER CUTTER NO.															
	WT. OF STRING	133.00 LBS.	TYPE															
		FOOTAGE DRILLED	60															
	DRILLER	D. J. McNamee																

EVENING TOUR

HOURS		IN SPACE BELOW REPORT ALL ACTIVITIES: ACCIDENTS, DRILLING, TESTING, DEFECTS TO MACHINERY, ETC.
FROM	TO	
4	10 ⁰⁰	CUTTING CORE #2
10 ⁰⁰	12 ⁰⁰	TRIP OUT

HOURS		IN SPACE BELOW REPORT ALL ACTIVITIES: ACCIDENTS, DRILLING, TESTING, DEFECTS TO MACHINERY, ETC.
FROM	TO	

2 1/2 HRS

TO BE COMPLETED BY TOOLPUSHER:

NO. OF DAYS FROM SPUD 82 Days

CUMULATIVE ROTATING HRS 20 3/4

DAYWORK HOURS TODAY

W.D.P. _____ W.O.D.P. _____ STANDBY _____

SIGNED: R. W. DEAN

TOOLPUSHER

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
OIL	200	CELEX	100

MUD RECORD

TIME	5:00	8:00	11:00
WEIGHT	9.2		
VISC.	105		
W.L.C.C.	6.2		
FLTR. CK.			
PH	10.2		
SD. CONT.			

JOB NO. 629

[illegible]

JOB NO. 479

OPERATOR Union PAN - AM		LEASE UNICAL PAN - AM - TRAINER		WELL NO. L-59		FIELD OR DIST. WINDCAT		COUNTY N.W.T		STATE					
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. 6	DRILL PIPE STRING NO. SIZE 4 1/2	TOOL JOINT 5 3/4 OD	PUMPS			CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET TO	PERFORATIONS FROM TO	CEMENT USED	OTHER	
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER			NO.	MANUFACTURER	TYPE		STROKE LENGTH	13 3/4		0	222	200	Sms
					1.	Kmsco	D-375		14						
					2.					4 3/8		0	1096	456	Sms
					3.	GD	FXZ	12						2 1/2 C	

[illegible]

JOB NO. 629

NO. DRILLING ASSEMBLY						BIT RECORD						HRS.	CORE	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT.ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	
56	STANDS	DP	5208.70	FT.	RUN NO.	5																	
1	SNGLS.	DP		FT.	SIZE	8 3/4																	
	ID				MFG.	HW																	
13	D.C.	OD	520.9 FT.		TYPE	BWV																	
	RMR BODY	OD		FT.	NO.																		
	STB BODY	OD		FT.	NOZ.																		
	SUBS	OD	3.50	FT.	SER. NO.	57824																	
	BIT OR C.B.			FT.	DEPTH OUT																		
				FT.	CUMULATIVE HOURS RUN	23 1/2																	
	KELLY DOWN	88'		FT.	COND. OF BIT																		
	TOTAL	5770		FT.	REAMER CUTTER NO.																		
	WT. OF STRING	LBS.			TYPE																		
					FOOTAGE DRILLED	168																	
	DRILLER	9) M. L. ...																					

MUD RECORD			
TIME	5:00	8:00	11:00
WEIGHT	9.0	9.0	
VISC.	73	75	
W.L.-C.C.	5.6	5.6	
FLTR. CK.	3/32	3/32	
PH	11	11	
SD. CONT.			

MUD & CHEMICALS ADDED	
TYPE	AMT.
Gel	

JOB NO. 629

OPERATOR <i>Union PAN-AM</i>		LEASE <i>Union PAN-AM - TRINIDAD</i>		WELL NO. <i>L-59</i>		FIELD OR DIST. <i>W. LOCAT</i>		COUNTY <i>N.W.T.</i>		STATE				
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. <i>6</i>	DRILL PIPE STRING NO. SIZE <i>4 1/2</i>	TOOL JOINT <i>5 3/4 OD</i>	PUMPS		CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER	
				TYPE THD. <i>XH</i>	NO.	MANUFACTURER		TYPE	STROKE LENGTH	<i>13 7/8</i>	<i>0</i>	<i>222</i>	<i>200 SXS</i>	<i>270 Gal.</i>
					1.	<i>EMSCO</i>		<i>D-375</i>	<i>14</i>	<i>9 5/8</i>	<i>0</i>	<i>1036</i>	<i>4570 SXS</i>	
					2.	<i>G D</i>		<i>EXZ</i>	<i>12</i>					
OPERATOR'S REPRESENTATIVE <i>[Signature]</i>		CONTRACTOR'S TOOL PUSHER <i>[Signature]</i>			3.									

NO. DRILLING ASSEMBLY BIT RECORD HRS. CORE FROM TO FORMATION ROTA- WT.ON PUMP PUMP NO. 1 PUMP NO. 2 METHOD TIME DISTRIBUTION - HOURS MUD RECORD

54 STANDS DP 5053.6 FT. RUN NO. 5 SIZE 8 3/4 D.C. ID 520.69 FT. MFG. H.W. TYPE C.W.V. RMR BODY OD 520.69 FT. NOZ. NO. NOZ. SIZE DEVIATION RECORD: DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION

18 6 1/2 OD 520.69 FT. TYPE C.W.V. RMR BODY OD 520.69 FT. NOZ. NO. NOZ. SIZE DEVIATION RECORD: DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION

1 SUBS OD 350 FT. SER. NO. 57824 DEPTH OUT 12:00 12:30 BROWN HALF CUMULATIVE HOURS RUN 12:30 2:30 DISPLACE HOLE W/ MUD COND. OF BIT 2:30 3:00 PULL 9 STDS. REAMER CUTTER NO. 3:00 6:00 MUD MUD + DISPLACE WT. OF STRING 13400 LBS. TYPE 1:00 6:45 PULL 15 STDS. 1:45 8:00 MIX MUD + DISPLACE

DRILLER J. H. HARRISON

NO. DRILLING ASSEMBLY BIT RECORD HRS. CORE FROM TO FORMATION ROTA- WT.ON PUMP PUMP NO. 1 PUMP NO. 2 METHOD TIME DISTRIBUTION - HOURS MUD RECORD

54 STANDS DP 5053.6 FT. RUN NO. 5 SIZE 8 3/4 D.C. ID 520.69 FT. MFG. H.W. TYPE C.W.V. RMR BODY OD 520.69 FT. NOZ. NO. NOZ. SIZE DEVIATION RECORD: DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION

18 6 1/2 OD 520.69 FT. TYPE C.W.V. RMR BODY OD 520.69 FT. NOZ. NO. NOZ. SIZE DEVIATION RECORD: DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION

1 SUBS OD 350 FT. SER. NO. 57824 DEPTH OUT 8:00 8:15 RIG SER CUMULATIVE HOURS RUN 8:15 8:45 PULL 10 STDS COND. OF BIT 8:45 9:30 CIRC. REAMER CUTTER NO. 9:30 10:15 RUN IN 10 STDS 10:15 11:15 CIRC. WT. OF STRING 13400 LBS. TYPE 11:15 11:45 RUN IN 11 STDS 11:45 1:00 CIRC

DRILLER J. H. HARRISON

NO. DRILLING ASSEMBLY BIT RECORD HRS. CORE FROM TO FORMATION ROTA- WT.ON PUMP PUMP NO. 1 PUMP NO. 2 METHOD TIME DISTRIBUTION - HOURS MUD RECORD

55 STANDS DP 5095.7 FT. RUN NO. 5 SIZE 8 3/4 D.C. ID 520.69 FT. MFG. H.W. TYPE C.W.V. RMR BODY OD 520.69 FT. NOZ. NO. NOZ. SIZE DEVIATION RECORD: DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION

18 6 1/2 OD 520.69 FT. TYPE C.W.V. RMR BODY OD 520.69 FT. NOZ. NO. NOZ. SIZE DEVIATION RECORD: DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION

1 SUBS OD 350 FT. SER. NO. 57824 DEPTH OUT 4:00 4:45 CIRC. CORROSION MUD CUMULATIVE HOURS RUN 4:45 12:00 DRAG 8 3/4 HOLE COND. OF BIT RUN REAMER CUTTER NO. WT. OF STRING 5640 LBS. TYPE

DRILLER J. H. HARRISON

NO. DRILLING ASSEMBLY BIT RECORD HRS. CORE FROM TO FORMATION ROTA- WT.ON PUMP PUMP NO. 1 PUMP NO. 2 METHOD TIME DISTRIBUTION - HOURS MUD RECORD

54 STANDS DP 5053.6 FT. RUN NO. 5 SIZE 8 3/4 D.C. ID 520.69 FT. MFG. H.W. TYPE C.W.V. RMR BODY OD 520.69 FT. NOZ. NO. NOZ. SIZE DEVIATION RECORD: DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION

18 6 1/2 OD 520.69 FT. TYPE C.W.V. RMR BODY OD 520.69 FT. NOZ. NO. NOZ. SIZE DEVIATION RECORD: DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION DEPTH DEV. DIRECTION

1 SUBS OD 350 FT. SER. NO. 57824 DEPTH OUT 4:00 4:45 CIRC. CORROSION MUD CUMULATIVE HOURS RUN 4:45 12:00 DRAG 8 3/4 HOLE COND. OF BIT RUN REAMER CUTTER NO. WT. OF STRING 5640 LBS. TYPE

DRILLER J. H. HARRISON

JOB NO. 629

DAILY DRILLING REPORT										REPORT NO. 24		DATE FEB 6 1966		WELL NO. 6-59		FIELD OR DIST. Windcat		COUNTY N.W.T.		STATE					
OPERATOR Union Pan-Am					LEASE UNICAL Pan-Am-TRAINER																				
CONTRACTOR ARROW DRILLING COMPANY, LTD.					RIG NO. 6		DRILL PIPE STRING NO. SIZE 4 1/2		TOOL JOINT 5 1/2 OD		PUMPS		CASING & LINER RECORD		SIZE WT. & GR. 13 3/4 9 7/8		DEPTH SET FROM TO 0 222 0 1096		PERFORATIONS FROM TO		CEMENT USED 200 SXS 450 SXS		OTHER 270 Cal 270 Cal		
							TYPE THD. XH																		
OPERATOR'S REPRESENTATIVE L. M. G.					CONTRACTOR'S TOOL PUSHER R. ROBER					NO.		MANUFACTURER		TYPE		STROKE LENGTH									
										1.		PMSCO		D-375		14									
										2.		G D		FXZ		12									
										3.															
										TIME DISTRIBUTION — HOURS															

[illegible]

JOB NO. 629

[illegible]

NO.	DRILLING ASSEMBLY		BIT RECORD		HRS. DRLO.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN
	STANDS DP	FT.	RUN NO.										LINER SIZE	S.P.M.	LINER SIZE	S.P.M.	
41	STANDS DP	FT.	RUN NO.	4													
	SNGLS. DP	FT.	SIZE	3 3/4	7 1/4		3903	4274	471	64		110	6		6		
	D.C. ID	MFG.		HW													
18	6 1/2 OD	520.69 FT.	TYPE	RG 75J													
	RMR BODY OD	FT.	NO.														
	STB BODY OD	16.45 FT.	SIZE														
	SUBS OD	FT.	SER. NO.	65171													
	BIT OR C.B.	FT.	DEPTH OUT		12	2:45											
		FT.	CUMULATIVE HOURS RUN	58 1/2	4:45	5:00											
	KELLY DOWN	41.00 FT.	COND. OF BIT		5:00	5:00											
	TOTAL	4274 FT.	REAMER CUTTER NO.														
	WT. OF STRING	13500 LBS.	TYPE														
		FOOTAGE DRILLED	3162														
	DRILLER	Nic Makowski															

MORNING TOUR

TIME DISTRIBUTION — HOURS

	WORN	DAY	EVE	W/D.P.	W/O D.P.	STAND BY
R/G UP/DOWN						
DRILLING — ACTUAL	7 1/4	7				
REAMING						
RUN CSG.						
W.O.C.						
TRIP OUT						
TRIP IN						
DEVIATION SURVEY	1/4	1/4	1			
CHECK B.O.P.						
EQUIP. REPAIR						
LOST CIRC.						
FISH						
RIG SERVICE	1/4					

MUD RECORD

TIME	1:00	3:00	6:00
WEIGHT			
VISC.	45	55	60
W.L. C.C.			
FLTR. CK.			
PH			
SD. CONT.			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	245X		
QBAZIN	75X		
CELLEX	25X		

NO.	DRILLING ASSEMBLY			BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	FOOTAGE HRS.	MUD RECORD				
	STANDS	DP	FT.	RUN NO.	SIZE									SIZE	S.P.M.	S.P.M.	TIME			9:00	12:00	3:00		
46	1	DP	4192.88	4	8 7/8	72		4274	4471	497	6420	180	6	6										
18	D.C.	6 1/2	520.69	400	RETXS																			
	RMR BODY	OD	FT.	NO.		DEVIATION RECORD:	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	(A) DRILL IN	(B) PERFORATING	(C) RUNNING TUBING	(D) SWABBING	(E) TESTING WELL	(F) ACIDIZING	(G) FRACTURING	(H) DST.	(I) COMPLETION
	STB BODY	OD	FT.	NO.																				
	SUBS	OD	FT.	SER. NO.	65121	HOURS		IN SPACE BELOW REPORT ALL ACTIVITIES: ACCIDENTS, DRILLING, TESTING, DEFECTS TO MACHINERY, ETC.		HOURS		IN SPACE BELOW REPORT ALL ACTIVITIES: ACCIDENTS, DRILLING, TESTING, DEFECTS TO MACHINERY, ETC.												
	BIT OR C.B.		FT.	DEPTH OUT		FROM	TO			FROM	TO													
			FT.	CUMULATIVE HOURS RUN	66	2:00	8:15	BIG SER. B.D.P																
	KELLY DOWN	41.00	FT.	COND. OF BIT		8:15	12:15	DRILL																
	TOTAL	4271	FT.	REAMER CUTTER NO.		12:15	12:30	SURVEY @ 4580																
	WT. OF STRING	140	LBS.	TYPE		12:30	4:00	DRILL																
FOOTAGE DRILLED				3659																				
DRILLER				J. L. Johnson																				

NO.	DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT.ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	FOOTAGE HRS.		
	STANDS DP	FT.	RUN NO.	SIZE									LINE SIZE	S.P.M.	LINE SIZE	S.P.M.		DAYWORK HRS.	TOTALS	
51	STANDS DP	4625.49	RUN NO.	4																
	SNGLS. DP	FT.	SIZE	8 3/4	7		4771	5203	432	64	1020	115	6							
	ID		MFG.	HW																
18	D.C.	6 3/4 OD	520.69	TYPE	RG72S															
	RMR BODY OD	FT.	NO.																	
	STB BODY OD	16.45	FT.	SIZE																
	SUBS OD	FT.	SER. NO.	65171																
	BIT OR C.B.	FT.	DEPTH OUT																	
		FT.	CUMULATIVE HOURS RUN	73																
	KELLY DOWN	41	FT.	COND. OF BIT																
	TOTAL	5203	FT.	REAMER CUTTER NO.																
	WT. OF STRING	12200	LBS.	TYPE																
				FOOTAGE DRILLED	1091															
	DRILLER																			

JOB NO. 629

627	COUNTY	N W T
-----	--------	-------

STATE

OPERATOR <i>Union Pan Am</i>		LEASE <i>TRAINOR</i>		<i>L-59</i>		<i>WILLOCAT</i>		<i>NW 1</i>							
CONTRACTOR <i>ARROW DRILLING COMPANY, LTD.</i>		RIG NO. <i>6</i>	DRILL PIPE STRING NO. SIZE <i>H/2</i>	TOOL JOINT <i>5 1/2 OD</i> TYPE THD. <i>XH</i>	PUMPS			CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER	
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER <i>R. Weber</i>			NO.	MANUFACTURER	TYPE	STROKE LENGTH	<i>1 3/8</i>		<i>0</i>	<i>222</i>		<i>200SX</i>	<i>2% CAL</i>
					1.	<i>EMSCO</i>	<i>D-375</i>	<i>14</i>	<i>9 7/8</i>		<i>0</i>	<i>1096</i>		<i>450SX</i>	<i>2% CAL</i>
					2.	<i>G-D</i>	<i>FYE</i>	<i>12</i>							
					3.										
								TIME DISTRIBUTION - HOURS				MUD RECORD			

MORNING TOUR	NO. DRILLING ASSEMBLY										BIT RECORD										FORMATION (SHOW CORE RECOVERY)										PUMP NO. 1										PUMP NO. 2										METHOD PUMPS RUN										TIME DISTRIBUTION - HOURS										MUD RECORD																			
	STANDS DP										FT. RUN NO. 4										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										RIG UP/DOWN										WEIGHT									
	SNGLS. DP										FT. SIZE 8 3/4										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										DRILLING - ACTUAL 8 7 1/2 7 3/4										VISC.									
	D.C. ID										MFG. HW										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										REAMING										W.L. C.C.									
	18 D.C. OD										520.69 FT. TYPE R674										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										RUN CSG.										FLTR. CK.									
	RMR BODY OD										FT. NO. NO.										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										W.O.C.										PH									
	STB BODY OD										16.45 FT. NO. NO.										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										TRIP OUT										SD. CONT.									
	SUBS OD										FT. SER. NO. 65171										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										TRIP IN																			
	BIT OR C.B.										FT. DEPTH OUT										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										DEVIATION SURVEY										4 4									
	KELLY DOWN										4100 FT. COND. OF BIT										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										CHECK B.O.P.										GEL 655X									
TOTAL										3068 FT. REAMER CUTTER NO.										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										EQUIP. REPAIR										CELLEX 55L										
WT. OF STRING										110.000 LBS. TYPE										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6										LOST CIRC.										Q-BROXIN 105L										
FOOTAGE DRILLED										1950										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6																														
DRILLER										Vic Mackay										HRS. DRLD. CORE NO. 8										FROM 2830 TO 3068										238										64 20 110 6 6										64 20 110 6 6																														
DAY TOUR	NO. DRILLING ASSEMBLY										BIT RECORD										FORMATION (SHOW CORE RECOVERY)										PUMP NO. 1										PUMP NO. 2										METHOD PUMPS RUN										TIME DISTRIBUTION - HOURS										MUD RECORD																			
	STANDS DP										FT. RUN NO. 4										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										CIRCULATE										WEIGHT									
	SNGLS. DP										FT. SIZE 8 3/4										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										CORE										VISC.									
	D.C. ID										MFG. HW										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										LOG										W.L. C.C.									
	18 D.C. OD										520.69 FT. TYPE R674										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										TRIPS (DAY-WORK)										FLTR. CK.									
	RMR BODY OD										FT. NO. NO.										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										(A) DRILL IN										PH									
	STB BODY OD										16.45 FT. NO. NO.										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										(B) PERFORATING										SD. CONT.									
	SUBS OD										FT. SER. NO. 65171										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										(C) RUNNING TUBING																			
	BIT OR C.B.										FT. DEPTH OUT										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										(D) SWABBING																			
	KELLY DOWN										41.00 FT. COND. OF BIT										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										(E) TESTING WELL																			
TOTAL										41.00 FT. REAMER CUTTER NO.										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										(F) ACIDIZING																				
WT. OF STRING										LBS. TYPE										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										(G) FRACTURING																				
FOOTAGE DRILLED										2229										HRS. DRLD. CORE NO. 8										FROM 3068 TO 3347										279										63 20 110										63 20 110										(H) D.S.T.																				
DRILLER										Neil J. Johnson										HRS. DRLD. CORE NO. 8</																																																																						

JOB NO. 429

[illegible]

MORNING TOUR

NO.		DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE	S.P.M.	PUMP NO. 2 LINER SIZE	S.P.M.	METHOD PUMPS RUN
16	STANDS	DP	139356	FT.	RUN NO.	4												
1	SNGLS.	DP		FT.	SIZE	8 3/4		1372	1972	- 600	64	15-20	100	-	-	-	-	-
		ID			MFG.	HW												
18	D.C.	OD	520.69	FT.	TYPE	RC 7 1/2												
	RMR BODY	OD		FT.	NO.													
	STB BODY	OD	16.45	FT.	SIZE			1527	7/8"									
	SUBS	OD		FT.	SER. NO.	65171												
	BIT OR C.B.			FT.	DEPTH OUT			12	230	DRLE								
				FT.	CUMULATIVE HOURS RUN	12 3/4		230	245	SURVEY @ 1527-7/8"								
	KELLY DOWN		2300	FT.	COND. OF BIT	running		245	8"	DRLE								
	TOTAL		1972	FT.	REAMER CUTTER NO.													
	WT. OF STRING		95.60	LBS.	TYPE													
	FOOTAGE DRILLED					854												
	DRILLER					11 - M. Williams												

TIME DISTRIBUTION - HOURS

	MORN	DAY	EVE	W. D.P.	W.O D.P.	STAND BY
RIG UP/DOWN						
DRILLING - ACTUAL	7 1/4	7	7 1/4			
REAMING						
RUN CSG						
W.O.C.						
TRIP OUT						
TRIP IN						
DEVIATION SURVEY	1/4	3/4	1/4			
CHECK B.O.P.						
EQUIP. REPAIR						
LOST CIRC.						
FISH						
RIG SERVICE						

MUD RECORD

TIME	1:00	3:00	6:00
WEIGHT			
VISC.			
W.L. C.C.			
FLTR. CK.			
PH			
SD. CONT.			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

NO.		DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.		CORE NO.		FROM		TO		FORMATION (SHOW CORE RECOVERY)		ROTA- RY R.P.M.		WT. ON BIT 1000 #		PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN		FOOTAGE HRS.		MUD RECORD						
STANDS DP		FT.		RUN NO.																						TIME		9:00		12:00		3:00		
1	SNGLS. DP	1783.00	FT.	SIZE	8 3/4		7			1972		2361		389		64	20	110																
18	D.C. ID		FT.	MFG.	HW																													
	OD	520.67	FT.	TYPE	367X																													
	RMR BODY OD		FT.	NO.																														
	STB BODY OD	16.45	FT.	SIZE						2040		M.S. RUN		2070		10																		
	SUBS OD		FT.	SER. NO.	65171																													
	BIT OR C.B.		FT.	DEPTH OUT			8:00	8:15		R.C. SER & V		MOTOR SHUT OFF																						
			FT.	CUMULATIVE HOURS RUN	19 3/4		8:15	9:16		DRUG																								
	KELLY DOWN	41	FT.	COND. OF BIT			9:15	10:00		SURVEY @ 2040 & @ 2070																								
	TOTAL	2361	FT.	REAMER CUTTER NO.			10:00	4:00		DRUG																								
	WT. OF STRING	166.00	LBS.	TYPE																														
				FOOTAGE DRILLED	1243																													
	DRILLER	J. L. Anderson																																

NO.	DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT.ON BIT 1000#	PRESS. P.S.I.	PUMP NO. 1	PUMP NO. 2	METHOD
	STANDS DP	FT.	RUN NO.	ID									OD	S.P.M.	S.P.M.	PUMPS RUN
25	D.C.	DP	2276	80 FT.	4										
26	SNGLS.	DP		FT.	SIZE	8 3/4	7 3/4	2361	2830	469	64	20	110		
18	RMR BODY	OD	520.6	4 FT.	TYPE	H.W.									
	STB BODY	OD	16.45	FT.	NOZ.	NO.									
	SUBS	OD		FT.	SER. NO.	15171									
	BITS OR C.B.			FT.	DEPTH OUT	4.00	7.30								
	KELLY DOWN	17	FT.	CUMULATIVE HOURS RUN	COND. OF BIT	27 3/4	7.30	7.45							
	TOTAL	2830	4 FT.	REAMER CUTTER NO.		7.45	12.00								
	WT. OF STRING	108	LBS.	TYPE											
				FOOTAGE DRILLED	1712										
	DRILLER	John J. Anderson													

MUD RECORD			
TIME	5:00	8:00	11:00
WEIGHT			
VISC.			
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT.			
MUD & CHEMICALS ADDED			
TYPE	AMT.	TYPE	AMT.

TOTALS		8 8 2	
TOTAL HRS.			
NO. LINES		SIZE	
SLIPPED @		CUT @	
TOTAL TRIPS		TRIPS SINCE LAST CUT	
TON MI. SINCE LAST CUT		LINE ON SPOOL	
TOTAL TON M'			
TO BE COMPLETED BY TOOLPUSHER:			
NO. OF DAYS FROM SPUD		13 Days	
CUMULATIVE ROTATING HRS		94 1/2	
DAYWORK HOURS TODAY			
W.D.P.		V.O.D.P.	
SIGNATURE		R. W. Fisher	

[illegible]

JOB NO. 629

[illegible][illegible]

JOB NO. 629

[illegible][illegible]

JOB NO. 629

[illegible]

NO.		DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN
		STANDS	DP	FT.	RUN NO.									LINER SIZE	S.P.M.	LINER SIZE	S.P.M.	
7		STANDS	DP	638.09	FT.	RUN NO.	2											
		SNGLS.	DP		FT.	SIZE		12 1/4		1/2		1090	1096	6'				
		D.C.	3D			MFG.		REED										
15		6 1/2	OD	436.65	FT.	TYPE		YT3A										
		R.M.P. BODY	OD		FT.	NO.												
		STB BODY	OD		FT.	NO.												
2		SUBS	OD	5.23	FT.	SER. NO.	ED3124											
		BIT OR C.B.			FT.	DEPTH	OUT											
					FT.	CUMULATIVE HOURS RUN	13.											
		KELLY DOWN		11.00	FT.	COND. OF BIT												
		TOTAL		1096	FT.	REAMER CUTTER NO.												
		WT. OF STRING		62,000	LBS.	TYPE												
				FOOTAGE DRILLED		450												
DRILLER 13 in. in diameter																		

NO. DRILLING ASSEMBLY			BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)		ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE	S.P.M.	PUMP NO. 2 LINER SIZE	S.P.M.	METHOD PUMPS RUN	MUD RECORD				
STANDS	DP	ST.	RUN NO.																FOOTAGE HRS.	TIME	9:00	12:00	3:00
SNGLS.	DP	FT.	SIZE																CIRCULATE	WEIGHT			
	ID		MFG.																CORE	VISC.			
D.C.	OD	FT.	TYPE																LOG	W.L.C.C.			
RMR BODY	OD	FT.	NO. NO.																TRIPS (DAY-WORK)	FLTR. CK.			
STB BODY	OD	FT.	SIZE																(A) DRILL IN	PH			
SUBS	OD	FT.	SER. NO.																(B) PERFORATING	SD. CONT.			
BIT OR C.B.		FT.	DEPTH OUT																(C) RUNNING TUBING				
		FT.	CUMULATIVE HOURS RUN																(D) SWABBING				
KELLY DOWN		FT.	COND. OF BIT																(E) TESTING WELL				
TOTAL		FT.	REAMER-CUTTER NO.																(F) ACIDIZING				
WT. OF STRING		LBS.	TYPE																(G) FRACTURING				
FOOTAGE DRILLED																			(H) D.S.T.				
DRILLER																			(I) COMPLETION				

NO.	DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	FOOTAGE HRS.		MUD RECORD					
	STANDS DP	FT.	RUN NO.										DAYWORK HRS.							TIME	5:00	8:00	11:00		
	SNGLS. DP	FT.	SIZE																						
	ID		MFG.																						
	D.C. OD	FT.	TYPE																						
	RMR BODY OD	FT.	NO. NO.		DEVIATION RECORD:	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	SLIPPED @	CUT @	TOTAL TRIPS	TRIPS SINCE LAST CUT	NO. LINES	SIZE	FLTR. CK.	PH	SD. CONT.		
	STS BODY OD	FT.	SIZE																						
	SUBS OD	FT.	SER. NO.		HOURS FROM TO		IN SPACE BELOW REPORT ALL ACTIVITIES: ACCIDENTS, DRILLING, TESTING, DEFECTS TO MACHINERY, ETC.				HOURS FROM TO		IN SPACE BELOW REPORT ALL ACTIVITIES: ACCIDENTS, DRILLING, TESTING, DEFECTS TO MACHINERY, ETC.				TOTAL TON MI.		TO BE COMPLETED BY TOOLPUSHER:		MUD & CHEMICALS ADDED				
	BIT OR C.B.	FT.	DEPTH OUT		2:00 / 2:00		RUNNING CSG.						8 WIP						NO. OF DAYS FROM SPUD 8		TYPE AMT. TYPE AMT.				
		FT.	CUMULATIVE HOURS RUN																CUMULATIVE ROTATING HRS 68		6 1/2 1500				
	REEL DOWN	FT.	COND. OF BIT																DAYWORK HOURS TODAY						
	TOTAL	FT.	REAMER CUTTER NO.																W.D.P. W.O.D.P.						
	WT. OF STRING	LBS.	TYPE																SIGNED: R. W. Water						
FOOTAGE DRILLED																									
DRILLER				J. D. Anderson																					

JOB NO. 629

OPERATOR Union - Perm. - Am.		LEASE TRAINOR		WELL NO. 2-59		FIELD NO. WINDCAT		N. W. T.	
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. 6	DRILL PIPE STRING NO. & SIZE 4 1/2"	TOOL JOINT TYPE THD.	PUMPS NO. MANUFACTURER TYPE STROKE & LENGTH			CASING & LINER RECORD	SIZE WT. & GR. DEPTH SET FROM TO PERFORATIONS FROM TO CEMENT USED OTHER
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER R. Weber		1. Emco 375 14 2. G. D. FXZ 12 3.				1 1/2 48 0 222 200 sho. 2 To Seal	
TIME DISTRIBUTION - HOURS								MUD RECORD	

MORNING TOUR

HOW TO ORDER

Figure 1 is a line graph showing the percentage of total energy expenditure (TEE) for various activities over a 24-hour period. The Y-axis is 'Percentage of TEE' (0-100) and the X-axis is 'Time of Day' (0-24). The activities and their approximate percentages are:

Time of Day	Sleeping	Resting	Sitting	Standing	Walking	Running
0	80	10	5	2	1	0
4	80	10	5	2	1	0
8	70	15	10	3	1	0
12	60	20	15	4	1	0
16	50	25	20	5	1	0
20	40	30	25	6	1	0
24	80	10	5	2	1	0

[illegible]

2629

MORNING TOUR	NO. DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT.ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	TIME DISTRIBUTION - HOURS							MUD RECORD									
	STANDS DP	FT.	RUN NO.	1									SIZE	12 1/4	MFG.	HW		TYPE	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	RIG UP/DOWN	MORN	DAY	EVE	W/ D.P.	W/O C.P.	STAND BY	TIME	1:00	3:00	6:00
	SNGLS. DP	FT.	SIZE	12 1/4	MFG.	HW	TYPE	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DRILLING - ACTUAL	1 1/2	7 1/4	7 1/2				WEIGHT			84			
	D.C. ID	FT.	MFG.	HW	TYPE	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	REAMING	1 1/4						VISC.		33	45					
	RMR BODY OD	FT.	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	RUN CSG.							W.L.C.C.									
	STB BODY OD	FT.	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	W.O.C.							FLTR. CK.									
	SUBS OD	FT.	SER. NO.	65360	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	TRIP OUT							PH							
	BIT OR C.B.	FT.	DEPTH OUT	13 1/2	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	TRIP IN							SD. CONT.							
	KELLY DOWN	FT.	COND. OF BIT	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEVIATION SURVEY	1/2	5												
	TOTAL	FT.	REAMER CUTTER NO.	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	CHECK B.O.P.	1/4													
WT. OF STRING		LBS.	TYPE	FOOTAGE DRILLED		117																												
DRILLER		John Anderson																																

DAY TOUR	NO. DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT.ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	TIME DISTRIBUTION - HOURS							MUD RECORD							
	STANDS DP	FT.	RUN NO.	1									SIZE	12 1/4	MFG.	HW		TYPE	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	RIG UP/DOWN	MORN	DAY	EVE	W/ D.P.	W/O C.P.	STAND BY	TIME	9:00	12:00	3:00
	SNGLS. DP	FT.	SIZE	12 1/4	MFG.	HW	TYPE	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DRILLING - ACTUAL	1 1/2	7 1/4	7 1/2				WEIGHT	9.0	9.1	9.1	
	D.C. ID	FT.	MFG.	HW	TYPE	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	REAMING	1 1/4						VISC.	40	55	45			
	RMR BODY OD	FT.	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	RUN CSG.							W.L.C.C.							
	STB BODY OD	FT.	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	W.O.C.							FLTR. CK.							
	SUBS OD	FT.	SER. NO.	65360	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	TRIP OUT							PH					
	BIT OR C.B.	FT.	DEPTH OUT	13 1/2	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	TRIP IN							SD. CONT.					
	KELLY DOWN	FT.	COND. OF BIT	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEVIATION SURVEY	1/2	5										
	TOTAL	FT.	REAMER CUTTER NO.	OSC-3	NOZ.	NO.	SIZE	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	CHECK B.O.P.	1/4											
WT. OF STRING		LBS.	TYPE																													

JOB NO. 629

[illegible][illegible]

DAILY DRILLING REPORT

REPORT NO. 13

DATE

JAN. 26 1966

JOB NO. 629

OPERATOR Union Pan Am.		LEASE TRINOR LAKE		WELL NO. L-59		FIELD OR DIST. WINDCAT		COUNTY N.		STATE				
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. 6	DRILL PIPE NO. SIZE 4 1/2	TOOL JOINT 4 1/2	OD	PUMPS		CASING & LINER RECORD	SIZE 13 3/4	WT. & GR.	DEPTH SET FROM TO 0 222	PERFORATIONS FROM TO	CEMENT USED 200 SPS	OTHER 2% GALL.
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER R. W. BERN		TYPE THD. XH		NO.		MANUFACTURER	TYPE	STROKE LENGTH				
						1.		EMSCO	375	14				
						2.		G.D.	EX2	12				
						3.								

MORNING TOUR

DAY TOUR

EVENING TOUR

NO.	DRILLING ASSEMBLY	BIT RECORD	HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE	S.P.M.	PUMP NO. 2 LINER SIZE	S.P.M.	METHOD PUMPS RUN
STANDS	DP	FT. RUN NO.													
SNGLS.	DP	FT. SIZE													
D.C.	ID	MFG.													
	OD	FT. TYPE													
RMR	BODY	OD	FT. NO.	NO.											
STB	BODY	OD	FT. SIZE												
SUBS	OD	FT. SER. NO.													
BIT OR C.B.	FT. DEPTH OUT														
	FT. CUMULATIVE HOURS RUN														
KELLY DOWN	FT. COND. OF BIT														
TOTAL	FT. REAMER CUTTER NO.														
WT. OF STRING	LBS. TYPE														

FOOTAGE DRILLED

DRILLER **John L. Johnson**

NO.	DRILLING ASSEMBLY	BIT RECORD	HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE	S.P.M.	PUMP NO. 2 LINER SIZE	S.P.M.	METHOD PUMPS RUN
STANDS	DP	FT. RUN NO.													
SNGLS.	DP	FT. SIZE													
D.C.	ID	MFG.													
	OD	FT. TYPE													
RMR	BODY	OD	FT. NO.	NO.											
STB	BODY	OD	FT. SIZE												
SUBS	OD	FT. SER. NO.													
BIT OR C.B.	FT. DEPTH OUT														
	FT. CUMULATIVE HOURS RUN														
KELLY DOWN	FT. COND. OF BIT														
TOTAL	FT. REAMER CUTTER NO.														
WT. OF STRING	LBS. TYPE														

FOOTAGE DRILLED

DRILLER **Vic Maksymic**

NO.	DRILLING ASSEMBLY	BIT RECORD	HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE	S.P.M.	PUMP NO. 2 LINER SIZE	S.P.M.	METHOD PUMPS RUN
STANDS	DP	FT. RUN NO.													
SNGLS.	DP	FT. SIZE													
D.C.	ID	MFG.													
	OD	FT. TYPE													
RMR	BODY	OD	FT. NO.	NO.											
STB	BODY	OD	FT. SIZE												
SUBS	OD	FT. SER. NO.													
BIT OR C.B.	FT. DEPTH OUT														
	FT. CUMULATIVE HOURS RUN														
KELLY DOWN	FT. COND. OF BIT														
TOTAL	FT. REAMER CUTTER NO.														
WT. OF STRING	LBS. TYPE														

FOOTAGE DRILLED

DRILLER **Paul Johnson**

TIME DISTRIBUTION - HOURS

	MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY
RIG UP/DOWN						
DRILLING - ACTUAL						
REAMING						
RUN CSG.						
WATER ON W.O.C. 5						
TRIP OUT						
TRIP IN						
DEVIATION SURVEY						
CHECK B.O.P.						
EQUIP. REPAIR						
LOST CIRC.						
FISH 7 7/8						
RIG SERVICE						

	FOOTAGE HRS.
CIRCULATE	
LOG	
TRIPS (DAY-WORK)	
(A) DRILL IN	
(B) PERFORATING	
(C) RUNNING TUBING	
(D) SWABBING	
(E) TESTING WELL	
(F) ACIDIZING	
(G) FRACTURING	
(H) D.S.T.	
(I) COMPLETION	

	FOOTAGE HRS.
DAYWORK HRS.	
TOTALS	8 8 8
TOTAL HRS.	
NO. LINES	SIZE
SLIPPED @	CUT @
TOTAL TRIPS	TRIPS SINCE LAST CUT
TON MI. SINCE LAST CUT	LINE ON SPOOL
TOTAL TON MI.	
TO BE COMPLETED BY TOOLPUSHER:	
NO. OF C.Y. FROM SPUD	5
CUMULATIVE ROTATING HRS	34 5
DAYWORK HOURS TODAY	
W.D.P.	W.O.D.P.
SIGNED	12 W. BERN

MUD RECORD

TIME	1:00	3:00	6:00
WEIGHT			
VISC.			
W.L.C.C.			
FLTR. CK.			
PH			
SD. CONT.			

MUD & CHEMICALS ADDED			
TYPE	AMT.	TYPE	AMT.

MUD RECORD			
TIME	5:00	8:00	11:00
WEIGHT			
VISC.			
W.L.C.C.			
FLTR. CK.			
PH			
SD. CONT.			

DAILY DRILLING REPORT

REPORT NO. 12

DATE JAN 25 66

JOB NO. 629

OPERATOR <i>Union Pac Am</i>		LEASE <i>TRINOR LAKE</i>		WELL NO. <i>454</i>		FIELD OR DIST. <i>WINDCAT</i>		COUNTY <i>N.W.T.</i>		STATE			
CONTRACTOR <i>ARROW DRILLING COMPANY, LTD.</i>		RIG NO. <i>6</i>	DRILL PIPE STRING NO. SIZE <i>4 1/2</i>	TOOL JOINT <i>TYPE THD.</i>	PUMPS		CASING & LINER RECORD	SIZE <i>13 1/4</i>	WT. & GR.	DEPTH SET FROM TO <i>0 222</i>	PERFORATIONS FROM TO	CEMENT USED <i>200# 2 1/2 Cals</i>	OTHER
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER <i>R. D. JEN</i>		1. <i>EMSCO 375 14</i>		2. <i>G.D. EX2 12</i>							

NO.	DRILLING ASSEMBLY	BIT RECORD	HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT.ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	TIME DISTRIBUTION—HOURS					MUD RECORD								
														WORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	1:00	3:00	6:00				
MORNING TOUR																			RIG UP/DOWN					WEIGHT			
SNGLS. DP FT. SIZE																			DRILLING—ACTUAL					VISC.			
D.C. ID FT. MFG.																			REAMING					W.L.C.C.			
RMR BODY OD FT. NOZ. NO.																			W.O.C. <i>Run 13 1/2</i>					FLTR. CK.			
STB BODY OD FT. SIZE																			TRIP OUT <i>13 1/2</i>					PH			
SUBS OD FT. SER. NO.																			TRIP IN <i>12 1/2</i>					SD. CONT.			
BIT OR C.B. FT. DEPTH OUT																			DEVIATION SURVEY								
CUMULATIVE HOURS RUN																			CHECK B.O.P. <i>Prepares To 8</i>					MUD & CHEMICALS ADDED			
COND. OF BIT																			EQUIP. REPAIR <i>Head up</i>					TYPE AMT. TYPE AMT.			
REAMER CUTTER NO.																			LOST CIRC.								
WT. OF STRING LBS. TYPE																			FISH <i>Cement 1/4</i>								
FOOTAGE DRILLED																			RIG SERVICE								
DRILLER <i>John J. Johnson</i>																			FOOTAGE HRS.								
NO. DRILLING ASSEMBLY																			CIRCULATE <i>1 1/2 3 1/2</i>					TIME 9:00 12:00 3:00			
STANDS DP FT. RUN NO.																			W.O.C. <i>Run 13 1/2</i>					WEIGHT			
SNGLS. DP FT. SIZE																			LOG					VISC.			
D.C. ID FT. MFG.																			TRIPS (DAY-WORK) <i>Prepares To 3 1/2</i>					W.L.C.C.			
RMR BODY OD FT. NOZ. NO.																			(A) DRILL IN <i>Head up</i>					FLTR. CK.			
STB BODY OD FT. SIZE																			(B) PERFORMING					PH			
SUBS OD FT. SER. NO.																			(C) RUNNING TUBING					SD. CONT.			
BIT OR C.B. FT. DEPTH OUT																			(D) SWABBING								
CUMULATIVE HOURS RUN																			(E) TESTING WELL					MUD & CHEMICALS ADDED			
COND. OF BIT																			(F) ACIDIZING					TYPE AMT. TYPE AMT.			
REAMER CUTTER NO.																			(G) FRACTURING								
WT. OF STRING LBS. TYPE																			(H) D.S.T.								
FOOTAGE DRILLED																			W.O.C. <i>Run 13 1/2</i>								
DRILLER <i>V. J. Makyma</i>																			FOOTAGE HRS.								
NO. DRILLING ASSEMBLY																			DAYWORK HRS.					TIME 5:00 8:00 11:00			
STANDS DP FT. RUN NO.																			TOTALS <i>8 8 8</i>					WEIGHT			
SNGLS. DP FT. SIZE																			TOTAL HRS.					VISC.			
D.C. ID FT. MFG.																			NO. LINES SIZE					W.L.C.C.			
RMR BODY OD FT. NOZ. NO.																			SLIPPED @ CUT @					FLTR. CK.			
STB BODY OD FT. SIZE																			TOTAL TRIPS					PH			
SUBS OD FT. SER. NO.																			TON MI. SINCE LAST CUT					SD. CONT.			
BIT OR C.B. FT. DEPTH OUT																			TOTAL TON MI.								
CUMULATIVE HOURS RUN																			TO BE COMPLETED BY TOOLPUSHER:					MUD & CHEMICALS ADDED			
COND. OF BIT																			NO. OF DAYS FROM SPUD <i>4</i>					TYPE AMT. TYPE AMT.			
REAMER CUTTER NO.																			CUMULATIVE ROTATING HRS. <i>34 1/2</i>								
WT. OF STRING LBS. TYPE																			DAYWORK HOURS TODAY								
FOOTAGE DRILLED																			W.D.P. W.O.D.P. <i>R. D. JEN</i>								
DRILLER <i>Neil Godderson</i>																			SIGNED: <i>R. D. JEN</i>								

JOB NO. 629

[illegible][illegible]

639

MORNING TOUR	NO. DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTARY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	TIME DISTRIBUTION - HOURS					MUD RECORD								
	STANDS DP	FT.	RUN NO.														RIG UP/DOWN	MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	1:00	3:00	6:00		
	SNGLS. DP	FT.	SIZE														DRILLING - ACTUAL							WEIGHT					
	D.C. ID	FT.	MFG.														REAMING							VISC.					
	OD	FT.	TYPE														RUN CSG							W.L.C.C.					
	RMR BODY OD	FT.	NOZ. NO.														W.O.C.							FLTR. CK.					
	STB BODY OD	FT.	SIZE														TRIP OUT							PH					
	SUSS OD	FT.	SER. NO.														TRIP IN							SD. CONT.					
	BIT OR C.B.	FT.	DEPTH OUT														DEVIATION SURVEY												
		FT.	CUMULATIVE HOURS RUN														CHECK B.O.P.												
KELLY DOWN	FT.	COND. OF BIT														EQUIP. REPAIR													
TOTAL	FT.	REAMER CUTTER NO.														LOST CIRC.													
WT. OF STRING		LBS.	TYPE													FISH													
FOOTAGE DRILLED		100													RIG SERVICE														
DRILLER		Neil Hallerson																											

DAY TOUR	NO. DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTARY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	TIME DISTRIBUTION - HOURS					MUD RECORD								
	STANDS DP	FT.	RUN NO.														RIG UP/DOWN	MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	9:00	12:00	3:00		
	SNGLS. DP	FT.	SIZE														DRILLING - ACTUAL							WEIGHT					
	D.C. ID	FT.	MFG.														REAMING							VISC.					
	OD	FT.	TYPE														RUN CSG							W.L.C.C.					
	RMR BODY OD	FT.	NOZ. NO.														W.O.C.							FLTR. CK.					
	STB BODY OD	FT.	SIZE														TRIP OUT							PH					
	SUSS OD	FT.	SER. NO.														TRIP IN							SD. CONT.					
	BIT OR C.B.	FT.	DEPTH OUT														DEVIATION SURVEY												
		FT.	CUMULATIVE HOURS RUN														CHECK B.O.P.												
KELLY DOWN	FT.	COND. OF BIT														EQUIP. REPAIR													
TOTAL	FT.	REAMER CUTTER NO.														LOST CIRC.													
WT. OF STRING		LBS.	TYPE													FISH													
FOOTAGE DRILLED															RIG SERVICE														
DRILLER		John Hallerson																											

EVENING TOUR	NO. DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTARY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	TIME DISTRIBUTION - HOURS					MUD RECORD						
	STANDS DP	FT.	RUN NO.														RIG UP/DOWN	MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	5:00	8:00	11:00
	SNGLS. DP	FT.	SIZE					</																			

JOB NO. 179

OPERATOR <i>Union PAN Am</i>		LEASE <i>5122183</i>		WELL NO.		FIELD OR DIST.		COUNTY <i>NWT</i>		STATE								
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. <i>6</i>	DRILL PIPE STRING NO. SIZE <i>4 1/2</i>	TOOL JOINT TYPE THD. <i>XH</i>	OD	PUMPS			CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET		PERFORATIONS		CEMENT USED	OTHER	
						NO.	MANUFACTURER	TYPE				STROKE LENGTH	FROM	TO	FROM			TO
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER <i>R. DeBier</i>				1.	<i>Emsco</i>	<i>D375</i>				<i>14</i>						
						2.	<i>GD</i>	<i>FXZ</i>				<i>12</i>						
						3.												

MORNING TOUR	NO. DRILLING ASSEMBLY			BIT RECORD			HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	TIME DISTRIBUTION — HOURS							MUD RECORD								
	STANDS DP	FT.	RUN NO.	SIZE	MFG.	NO.									NO.	NOZ.	NO.	DEPTH		DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	RIG UP/DOWN	MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	1:00	3:00	6:00
	SNGLS. DP	FT.	SIZE	MFG.	NO.	NO.	NOZ.	NO.	NOZ.	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DRILLING — ACTUAL							WEIGHT									
	D.C. ID	FT.	TYPE																REAMING							VISC.									
	RMR BODY OD	FT.	NO.	NO.	NO.	NO.	NOZ.	NO.	NOZ.	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	RUN CSG.							W.L. C.C.									
	STB BODY OD	FT.	SIZE																W.O.C.							FLTR. CK.									
	SUBS OD	FT.	SER. NO.																TRIP OUT							PH									
	BIT OR C.B.	FT.	DEPTH OUT																TRIP IN							SD. CONT.									
		FT.	CUMULATIVE HOURS RUN																DEVIATION SURVEY																
	KELLY DOWN	FT.	COND. OF BIT																CHECK E.O.P.																
TOTAL	FT.	REAMER CUTTER NO.																EQUIP. REPAIR																	
WT. OF STRING	LBS.	TYPE																FOOTAGE DRILLED																	
DRILLER			Niel Godderson																																

DAY TOUR	NO. DRILLING ASSEMBLY			BIT RECORD			HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	TIME DISTRIBUTION — HOURS							MUD RECORD								
	STANDS DP	FT.	RUN NO.	SIZE	MFG.	NO.									NO.	NOZ.	NO.	DEPTH		DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	RIG UP/DOWN	MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	9:00	12:00	3:00
	SNGLS. DP	FT.	SIZE	MFG.	NO.	NO.	NOZ.	NO.	NOZ.	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DRILLING — ACTUAL							WEIGHT									
	D.C. ID	FT.	TYPE																REAMING							VISC.									
	RMR BODY OD	FT.	NO.	NO.	NO.	NO.	NOZ.	NO.	NOZ.	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	RUN CSG.							W.L. C.C.									
	STB BODY OD	FT.	SIZE																W.O.C.							FLTR. CK.									
	SUBS OD	FT.	SER. NO.																TRIP OUT							PH									
	BIT OR C.B.	FT.	DEPTH OUT																TRIP IN							SD. CONT.									
		FT.	CUMULATIVE HOURS RUN																DEVIATION SURVEY																
	KELLY DOWN	FT.	COND. OF BIT																CHECK E.O.P.																
TOTAL	FT.	REAMER CUTTER NO.																EQUIP. REPAIR																	
WT. OF STRING	LBS.	TYPE																FOOTAGE DRILLED																	
DRILLER			John Godderson																																

EVENING TOUR	NO. DRILLING ASSEMBLY			BIT RECORD			HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1	
--------------	-----------------------	--	--	------------	--	--	------------	----------	------	----	-----------------------------------	-----------------------	------------------------	----------------	------------	--

DAILY DRILLING REPORT

REPORT NO. 7

DATE JAN 20/66

JOB NO. 427

OPERATOR <i>Wm. R. Anderson</i>		LEASE <i>Tennor</i>		WELL NO. <i>1-59</i>		FIELD OR DIST.		COUNTY <i>W.D.T.</i>		STATE				
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. <i>6</i>	DRILL PIPE STRING NO. SIZE	TOOL JOINT	OD	PUMPS		CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER <i>R. Baker</i>		TYPE THD.		NO. MANUFACTURER TYPE STROKE LENGTH								
						1.								
						2.								
						3.								

NO.	DRILLING ASSEMBLY	BIT RECORD	HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	TIME DISTRIBUTION - HOURS					MUD RECORD						
														MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	1:00	3:00	6:00		
														RIG UP/DOWN						WEIGHT					
														DRILLING - ACTUAL							VISC.				
														REAMING							W.L.C.C.				
														RUN CSG.							FLTR. CK.				
														W.O.C.							PH				
														TRIP OUT							SD. CONT.				
														TRIP IN											
														DEVIATION SURVEY											
														CHECK B.O.P.							MUD & CHEMICALS ADDED				
														EQUIP. REPAIR							TYPE	AMT.	TYPE	AMT.	
														LOST CIRC.											
														FISH											
														RIG SERVICE											
														FOOTAGE HRS.							MUD RECORD				
														CIRCULATE							TIME	9:00	12:00	3:00	
														CORE							WEIGHT				
														LOG							VISC.				
														TRIPS (DAY-WORK)							W.L.C.C.				
														(A) DRILL IN							FLTR. CK.				
														(B) PERFORATING							PH				
														(C) RUNNING TUBING							SD. CONT.				
														(D) SWABBING											
														(E) TESTING WELL							MUD & CHEMICALS ADDED				
														(F) ACIDIZING							TYPE	AMT.	TYPE	AMT.	
														(G) FRACTURING											
														(H) D.S.T.											
														(I) COMPLETION											
														FOOTAGE HRS.							MUD RECORD				
														DAYWORK HRS.							TIME	5:00	8:00	11:00	
														TOTALS							WEIGHT				
														TOTAL HRS.							VISC.				
														NO. LINES							W.L.C.C.				
														CUT @							FLTR. CK.				
														TOTAL TRIPS							PH				
														TON MI. SINCE LAST CUT							SD. CONT.				
														LINE ON SPOOL											
														TOTAL TON MI.											
														TO BE COMPLETED BY TOOLPUSHER:				MUD & CHEMICALS ADDED							
														NO. OF DAYS FROM SPUD				TYPE	AMT.	TYPE	AMT.				
														CUMULATIVE ROTATING HRS											
														DAYWORK HOURS TODAY											
														W.D.P. W.O.D.P. STANDBY											
														SIGNED				TOOLPUSHER							

STANDARD DAILY DRILLING REPORT FORM

JOB NO. 1-19

STANDARD DAILY DRILLING REPORT FORM

JOB NO.

DATE _____

JOB NO.

OPERATOR <i>Hess Inc.</i>		LEASE <i>T-ADK</i>		WELL NO. <i>59</i>		FIELD OR DIST. <i>Windon</i>		COUNTY <i>N.W.T.</i>		STATE <i>N.W.T.</i>				
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO. <i>6</i>	DRILL PIPE STRING NO. SIZE <i>No. 2</i>	TOOL JOINT TYPE THD.	OB	PUMPS NO. MANUFACTURER TYPE STROKE LENGTH			CASING & LINER RECORD	SIZE WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER <i>R. D. ...</i>				1.								
						2.								
						3.								

[illegible]

JOB NO. 424

[illegible][illegible]

JOB NO. 629

[illegible]

MORNING TOUR	NO. DRILLING ASSEMBLY			BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	TIME DISTRIBUTION — HOURS							MUD RECORD					
	STANDS	DP	FT.	RUN NO.																			LINER SIZE	S.P.M.	LINER SIZE	S.P.M.			MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	1:00	3:00	6:00
	SNGLS.	DP	FT.	SIZE																RIG UP/DOWN							WEIGHT				
	D.C.	ID		MFG.																DRILLING — ACTUAL							VISC.				
	OD	FT.	TYPE																	REAMING							W.L.C.C.				
	RMR BODY	OD	FT.	NO.	NO.															RUN CSG.							FLTR. CK.				
	STB BODY	OD	FT.	NOZ.	SIZE															W.O.C.							PH				
	SUBS	OD	FT.	SER. NO.																TRIP OUT							SD. CONT.				
	BIT OR C.B.	FT.	DEPTH OUT																	TRIP IN											
		FT.	CUMULATIVE HOURS RUN																	DEVIATION SURVEY											
KELLY DOWN	FT.	COND. OF BIT																	CHECK B.O.P.								MUD & CHEMICALS ADDED				
TOTAL	FT.	REAMER CUTTER NO.																	EQUIP. REPAIR								TYPE	AMT.	TYPE	AMT.	
WT. OF STRING	LBS.	TYPE																	LOST CIRC.												
FOOTAGE DRILLED																			FISH												
DRILLER			M. L. COOPER																RIG SERVICE												
DAY TOUR	NO. DRILLING ASSEMBLY			BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1		PUMP NO. 2		METHOD PUMPS RUN	TIME DISTRIBUTION — HOURS							MUD RECORD					
	STANDS	DP	FT.	RUN NO.																			LINER SIZE	S.P.M.	LINER SIZE	S.P.M.					
	SNGLS.	DP	FT.	SIZE																CIRCULATE							WEIGHT				
	D.C.	ID		MFG.																CORE							VISC.				
	OD	FT.	TYPE																	LOG							W.L.C.C.				
	RMR BODY	OD	FT.	NO.	NO.															TRIPS (DAY-WORK)							FLTR. CK.				
	STB BODY	OD	FT.	NOZ.	SIZE															(A) DRILL IN							PH				
	SUBS	OD	FT.	SER. NO.																(B) PERFORATING							SD. CONT.				
	BIT OR C.B.	FT.	DEPTH OUT																	(C) RUNNING TUBING											
		FT.	CUMULATIVE HOURS RUN																	(D) SWABBING											
KELLY DOWN	FT.	COND. OF BIT																	(E) TESTING WELL								MUD & CHEMICALS ADDED				
TOTAL	FT.	REAMER CUTTER NO.																	(F) ACIDIZING							TYPE	AMT.	TYPE	AMT.		
WT. OF STRING	LBS.																														

DAILY DRILLING REPORT

REPORT NO. 2

DATE Jan 15/66

JOB NO. 679

OPERATOR <i>Wm. J. R. ...</i>		LEASE <i>Tractor</i>		WELL NO. <i>2-59</i>		FIELD OR DIST. <i>Willcox</i>		COUNTY <i>N.W.T.</i>		STATE		
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO.	DRILL PIPE STRING NO. SIZE	TOOL JOINT	OD	PUMPS		CASING & LINER RECORD	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER <i>R. ...</i>		TYPE THD.		NO. MANUFACTURER TYPE STROKE LENGTH		SIZE WT. & GR.				
						1.						
						2.						
						3.						

NO.	DRILLING ASSEMBLY		BIT RECORD		HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	TIME DISTRIBUTION — HOURS							MUD RECORD							
	STANDS DP	FT.	RUN NO.	FT.												DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	1:00	3:00	6:00
1.	STANDS DP	FT.	RUN NO.	FT.													RIG UP/DOWN									WEIGHT				
2.	STANDS DP	FT.	RUN NO.	FT.													DRILLING — ACTUAL									VISC.				
3.	STANDS DP	FT.	RUN NO.	FT.													REAMING									W.L.C.C.				
4.	STANDS DP	FT.	RUN NO.	FT.													RUN CSG.									FLTR. CK.				
5.	STANDS DP	FT.	RUN NO.	FT.													W.O.C.									PH				
6.	STANDS DP	FT.	RUN NO.	FT.													TRIP OUT									SD. CONT.				
7.	STANDS DP	FT.	RUN NO.	FT.													TRIP IN													
8.	STANDS DP	FT.	RUN NO.	FT.													DEVIATION SURVEY													
9.	STANDS DP	FT.	RUN NO.	FT.													CHECK B.O.P.													
10.	STANDS DP	FT.	RUN NO.	FT.													EQUIP. REPAIR													
11.	STANDS DP	FT.	RUN NO.	FT.													LOST CIRC.													
12.	STANDS DP	FT.	RUN NO.	FT.													FISH													
13.	STANDS DP	FT.	RUN NO.	FT.													RIG SERVICE													
14.	STANDS DP	FT.	RUN NO.	FT.													FOOTAGE HRS.													
15.	STANDS DP	FT.	RUN NO.	FT.													CIRCULATE													
16.	STANDS DP	FT.	RUN NO.	FT.													CORE													
17.	STANDS DP	FT.	RUN NO.	FT.													LOG													
18.	STANDS DP	FT.	RUN NO.	FT.													TRIPS (DAY-WORK)													
19.	STANDS DP	FT.	RUN NO.	FT.													(A) DRILL IN													
20.	STANDS DP	FT.	RUN NO.	FT.													(B) PERFORATING													
21.	STANDS DP	FT.	RUN NO.	FT.													(C) RUNNING TUBING													
22.	STANDS DP	FT.	RUN NO.	FT.													(D) SWABBING													
23.	STANDS DP	FT.	RUN NO.	FT.													(E) TESTING WELL													
24.	STANDS DP	FT.	RUN NO.	FT.													(F) ACIDIZING													
25.	STANDS DP	FT.	RUN NO.	FT.													(G) FRACTURING													
26.	STANDS DP	FT.	RUN NO.	FT.													(H) D.S.T.													
27.	STANDS DP	FT.	RUN NO.	FT.													(I) COMPLETION													
28.	STANDS DP	FT.	RUN NO.	FT.													FOOTAGE HRS.													
29.	STANDS DP	FT.	RUN NO.	FT.													DAYWORK HRS.													
30.	STANDS DP	FT.	RUN NO.	FT.													TOTALS													
31.	STANDS DP	FT.	RUN NO.	FT.													TOTAL HRS.													
32.	STANDS DP	FT.	RUN NO.	FT.													NO. LINES													
33.	STANDS DP	FT.	RUN NO.	FT.													CUT @													
34.	STANDS DP	FT.	RUN NO.	FT.													SLIPPED @													
35.	STANDS DP	FT.	RUN NO.	FT.													TOTAL TRIPS													
36.	STANDS DP	FT.	RUN NO.	FT.													TON MI. SINCE LAST CUT													
37.	STANDS DP	FT.	RUN NO.	FT.													LINE ON SPOOL													
38.	STANDS DP	FT.	RUN NO.	FT.													TOTAL TON MI.													
39.	STANDS DP	FT.	RUN NO.	FT.													TO BE COMPLETED BY TOOLPUSHER:							MUD & CHEMICALS ADDED						
40.	STANDS DP	FT.	RUN NO.	FT.													NO. OF DAYS FROM SPUD													
41.	STANDS DP	FT.	RUN NO.	FT.													CUMULATIVE ROTATING HRS													
42.	STANDS DP	FT.	RUN NO.	FT.													DAYWORK HOURS TODAY													
43.	STANDS DP	FT.	RUN NO.	FT.													W.D.P.													
44.	STANDS DP	FT.	RUN NO.	FT.													SIGNED													
45.	STANDS DP	FT.	RUN NO.	FT.													TOOLPUSHER													

DAILY DRILLING REPORT

REPORT NO. 1

DATE Jan 14 1966

JOB NO. 229

OPERATOR Union Pac. A-1		LEASE Traction		WELL NO. L-54	FIELD OR DIST. Windsor	COUNTY N.W.T.	STATE						
CONTRACTOR ARROW DRILLING COMPANY, LTD.		RIG NO.	DRILL PIPE STRING NO. SIZE	TOOL JOINT OD	PUMPS		CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER R. W. B. S. A.		NO.	MANUFACTURER	TYPE	STROKE LENGTH						
				1.									
				2.									
				3.									

NO.	DRILLING ASSEMBLY	BIT RECORD	HRS. DRLD.	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	PUMP NO. 1 LINER SIZE S.P.M.	PUMP NO. 2 LINER SIZE S.P.M.	METHOD PUMPS RUN	TIME DISTRIBUTION - HOURS						MUD RECORD				
														MORN	DAY	EVE	W/ D.P.	W/O D.P.	STAND BY	TIME	1:00	3:00	6:00	
MORNING TOUR																								
STANDS DP	FT.	RUN NO.													RIG UP/DOWN						TIME	1:00	3:00	6:00
SNGLS. DP	FT.	SIZE													DRILLING - ACTUAL						WEIGHT			
D.C. ID	FT.	MFG.													REAMING						VISC.			
OD	FT.	TYPE													RUN CSG.						W.L.C.C.			
RMR BODY OD	FT.	NO. NO.													W.O.C.						FLTR. CK.			
STB BODY OD	FT.	NOZ. SIZE													TRIP OUT						PH			
SUBS OD	FT.	SER. NO.													TRIP IN						SD. CONT.			
BIT OR C.B.	FT.	DEPTH OUT													DEVIATION SURVEY									
	FT.	CUMULATIVE HOURS RUN													CHECK B.O.P.									
KELLY DOWN	FT.	COND. OF BIT													EQUIP. REPAIR									
TOTAL	FT.	REAMER CUTTER NO.													LOST CIRC.									
WT. OF STRING	LBS.	TYPE													FISH									
FOOTAGE DRILLED															RIG SERVICE									
DRILLER															FOOTAGE HRS.									
DAY TOUR																								
STANDS DP	FT.	RUN NO.													CIRCULATE						TIME	9:00	12:00	3:00
SNGLS. DP	FT.	SIZE													CORE						WEIGHT			
D.C. ID	FT.	MFG.													LOG						VISC.			
OD	FT.	TYPE													TRIPS (DAY-WORK)						W.L.C.C.			
RMR BODY OD	FT.	NO. NO.													(A) DRILL IN						FLTR. CK.			
STB BODY OD	FT.	NOZ. SIZE													(B) PERFORATING						PH			
SUBS OD	FT.	SER. NO.													(C) RUNNING TUBING						SD. CONT.			
BIT OR C.B.	FT.	DEPTH OUT													(D) SWABBING									
	FT.	CUMULATIVE HOURS RUN													(E) TESTING WELL									
KELLY DOWN	FT.	COND. OF BIT													(F) ACIDIZING									
TOTAL	FT.	REAMER CUTTER NO.													(G) FRACTURING									
WT. OF STRING	LBS.	TYPE													(H) D.S.T.									
FOOTAGE DRILLED															(I) COMPLETION									
DRILLER															FOOTAGE HRS.									
EVENING TOUR																								
STANDS DP	FT.	RUN NO.													DAYWORK HRS.						TIME	5:00	8:00	11:00
SNGLS. DP	FT.	SIZE													TOTALS						WEIGHT			
D.C. ID	FT.	MFG.													TOTAL HRS.						VISC.			
OD	FT.	TYPE													NO. LINES						W.L.C.C.			
RMR BODY OD	FT.	NO. NO.													CUT @						FLTR. CK.			
STB BODY OD	FT.	NOZ. SIZE													TOTAL TRIPS									
SUBS OD	FT.	SER. NO.													TON MI. SINCE LAST CUT						SD. CONT.			
BIT OR C.B.	FT.	DEPTH OUT													LINE ON SPOOL									
	FT.	CUMULATIVE HOURS RUN													TOTAL TON MI.									
KELLY DOWN	FT.	COND. OF BIT													TO BE COMPLETED BY TOOLPUSHER:					MUD & CHEMICALS ADDED				
TOTAL	FT.	REAMER CUTTER NO.													NO. OF DAYS FROM SPUD						TYPE	AMT.	TYPE	AMT.
WT. OF STRING	LBS.	TYPE													CUMULATIVE ROTATING HRS.									
FOOTAGE DRILLED															DAYWORK HOURS TODAY:									
DRILLER															W.D.P.									
															SIGNED: _____					TOOLPUSHER _____				

Report on 17 lots of subsurface Devonian fossils from the District of Mackenzie submitted by H.R. Belyea. NTS 85C, D, E, 95A, B, 96E.

The relevant parts of any manuscript prepared for publication that paraphrase or quote from this report should be referred to the Paleontology Subdivision, Calgary, for possible revision.

<u>Depth & Stratigraphy</u>	<u>Well, Fauna & Age</u>	<u>GSC Loc. No.</u>
2,156' Watt Mountain Fm., 4' above base, 26' below top.	Briggs N.E. Tathlina Lake No. 1 60°46'01"N; 117°19'45"W. NTS 85C. <i>Alaiophyllum</i> sp. nov. gastropod moulds, indet. age: Probably Givetian (Middle Devonian).	C-9897
2,159' Watt Mountain Fm., 1' above base, 29' below top.	Same well as above <i>Chaetetes</i> sp. age: Ordovician to Permian.	C-9898
2,396' Sulphur Point Fm. 104' above base, 6' below top.	Briggs N.E. Tathlina Lake No. 9 60°43'12"N; 117°22'17"W. NTS 85C. fragment of a large pseudopunctate brachiopod, possibly <i>Megastrophica</i> age: Middle Devonian?	C-9899
2,397' Sulphur Point Fm., 103' above base, 7' below top.	Same well fragment of a large nautiloid age: not determined.	C-9901
2,399' Sulphur Point Fm., 101' above base, 9' below top.	Same well stromatoporoids, not studied <i>Dendrostella</i> sp. cf. <i>D. disjuncta</i> (Whiteaves) age: probably Middle Devonian, Givetian.	C-9900
2,414' Sulphur Point Fm., 86' above base, 24' below top.	Same well stromatoporoid, not studied <i>Syringopora</i> sp. <i>Grypophyllum</i> sp. cf. <i>G. mackenziense</i> (Pedder) age: probably Middle/Upper Devonian, <i>Zackenziense</i> Zone?	C-22943
2,438' Sulphur Point Fm., 62' above base, 48' below top.	Same well <i>Stachyodes</i> sp., broad sense <i>Thamnopora</i> sp. <i>Psyracophyllum</i> sp. age: Middle Devonian, probably late Eifelian or Givetian.	C-9902

<u>Depth & Stratigraphy</u>	<u>Well, Fauna & Age</u>	<u>GSC Loc. No.</u>
2,452' Sulphur Point Fm., 48' above base, 62' below top.	Same well stromatoporoids, not studied indeterminate brachiopod fragments age: not determined.	C-9903
2,486' Sulphur Point Fm., 14' above base, 96' below top.	Same well <i>Thamnopora</i> sp. <i>Dohrnophyllum</i> or <i>Psydracophyllum</i> sp. age: Lower Devonian (Siegenian) to Middle Devonian (early Givetian?).	C-9904
2,707' Pine Point Fm., 121' above base, 7' below top.	Briggs Rabbit Lake No. 2 60°54'53"N; 118°49'37"W. NTS 85D. <i>Thamnopora</i> sp. <i>Alveolites</i> sp. <i>Psydracophyllum lonsdaleiaforme</i> Pedder age: Middle Devonian, late Eifelian, <i>dysmorphostrota</i> Zone.	C-7672
2,717' Pine Point Fm., 111' below base, 17' below top.	Same well as above <i>Thamnopora</i> sp. rugose coral, indet. age: Silurian or Devonian.	C-7673
1,805' Ernestina Lake Fm., 2' above base, 1' below top.	CS Laferte River A-66 61°45'07"N; 118°41'29"W. NTS 85E fragment of a large orthoconic nautiloid age: not determined.	C-15924
5,853' Sulphur Point Fm.,	Union Pan Am. Trainor L-59 60°28'33"N; 120°40'50"W. NTS 95A <i>Stachyodes</i> sp. cf. <i>S. thomasciarki</i> Stearn age: probably Middle/Upper Devonian <i>mackenziense</i> Zone to early Frasnian.	C-19211
6,474.5' Sulphur Point Fm., 20.5' above base, 62.5' below top.	Imperial Sun Arrowhead I-46 60°45'37"N; 122°22'47"W. NTS 95B stromatoporoids, not studied <i>Thamnopora</i> sp. <i>Grypophyllum mackenziense</i> (Pedder) age: Middle/Upper Devonian, <i>mackenziense</i> Zone.	C-8946

<u>Depth & Stratigraphy</u>	<u>Well, Fauna & Age</u>	<u>GSC Loc. No.</u>
5,791.5' Sulphur Point Fm., 253.5' above base 97.5' below top.	Murphy-B.O.C. Arrowhead River No. 1 60°50'25"N; 122°05'50"W. NTS 95B. <i>Temnophyllum richardsoni</i> (Meek)? age: Middle Devonian, late Givetian, <i>Stringocephalus alaskanus</i> to Lower <i>hermanni-cristatus</i> Zone?	C-8998
6,195' Pine Point Fm., 140' above base, 150' below top.	Same well <i>Exilifrons</i> sp. nov. age: Eifelian, probably <i>dysmorphostrota</i> Zone.	C-9002
1,369' Ramparts Fm., (broad sense), 70' above base, 346' below top.	Imperial Norman Wells No. 37X 65°16'57"N; 126°51'50"W. NTS 96E <i>Grypophyllum mackenziense</i> (Pedder) age: Middle/Upper Devonian, <i>mackenziense</i> Zone.	C-9905

Remarks

Psydracophyllum lonsdaleiaforme (C-7672) and the new species of *Exilifrons* (C-9002) are regarded as reliable indices to the late Eifelian *dysmorphostrota* Zone, which, at surface, occurs in the pre-*Leiorhynchus castanea* bearing beds of the Headless, Nahanni and Hume Formations. It is thus probable that the subsurface Pine Point of the Rabbit Lake and Arrowhead River areas is just older than the *Leiorhynchus castanea* bearing beds of the Pine Point Formation of the Great Slave Lake area. *P. lonsdaleiaforme* has also been reported (Pal. Rept. HRB 25 AEHP 71, p. 2) from the subsurface Keg River Formation of the Gulf et al. Trout River D-14 well (C-7153, C-7154).

Good examples of *Grypophyllum mackenziense* occur in the Sulphur Point of the Arrowhead I-46 well (C-8946) and the Ramparts of Norman Wells 37X well (C-9905). The latter identification extends the range of the *mackenziense* Zone in the Norman Wells 37X well to 1,369 feet, giving it a total thickness of at least 208 feet (see Pal. Rept. HRB 23 AEHP 71, p. 2, for further details). *Grypophyllum mackenziense* may also be present in beds assigned to the Sulphur Point Formation in Briggs N.E. Tathlina Lake No. 9 well (C-22943), but the only specimen available has 17x2 septa and a diameter of 9.2 mm whereas normally in adult stages the species has 18x2 to 26x2 septa and a diameter ranging from 9.0 to 19.0 mm. *G. mackenziense* is believed to be a good megafossil index to the Upper *hermanni-cristatus* conodont zone, which, on this continent, is usually accepted as the latest Middle Devonian Zone.

The occurrence of a species comparable with *Dendrostellula disjuncta* in C-9900 is of considerable interest in that *D. disjuncta*, sensu stricto, is known only from the older *Stringocephalus*-bearing Methy and Winnipegosis Formations of Alberta and Manitoba respectively.

The *Tennophyllum* from the Sulphur Point Formation of the Murphy-B.O.C. Arrowhead River No. 1 well (C-8998) is worn peripherally and has suspiciously wedge-shaped septa, and can therefore only be questionably referred to the species *T. richardsoni*. If the identification were upheld it would strongly suggest that this part of the Sulphur Point Formation in the Arrowhead River No. 1 well is older than much of the Sulphur Point of other subsurface sections, as current data indicate that the range of *T. richardsoni* entirely predates that of *Grypophyllum mackenziense*.

Alan Pedder.

A.E.H. Pedder

A.E.H. Pedder

Paleontology Subdivision
Institute of Sedimentary and Petroleum Geology
Calgary, December 28, 1972.