

Drilling Authority No. **302**
Date Issued **8/Feb/68**

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
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 **Shell Union Pan Am Tatcho J-12**

Permit No. **3026** Lease No. **NTR 479**

Shell Canada Limited Exploratory Licence No. **1877**
(Permitter, Licensee, Lessee)

Shell Canada Limited Exploratory Licence No. **1877**
(Operator)

Location: Unit **J** Section **12** Grid **60°50'N. 121°00'W**

Latitude **60°41'40.260"** Longitude **121°02'48.362"**

From Established Reference Marker **A. . . plan dated 29th January 1968**

Universal Well Location Reference **60.69451° N. Lat. 121.04676° W. Long.**

	DATE	DEPTH	Pool(s)	Interval(s) open to production
Spudded	Feb. 9/68		None	None
Suspended				
Resumed Operations				
Finished Drilling	Feb. 24/68	5586		
Deepened				
Completion (gas/oil)				
Abandoned	Mar. 1/68	5586		
Rig released	Mar. 1/68	5586		
			Elevation: Gr. 1660.6 K.B. 1676	
			Rig No. 10	
			Drilling Contractor Nabors Drilling Ltd.	
			Contractor's Business Licence No. 18285	

CASING RECORD

Casing Size (Inches)	Grade	Weight	Amount	Set at -	Sacks of Cement and Additives
9 5/8"	J-55	36#	764.44	738	550 sk. + 2% CaCl ₂
1.					
2.					
3.					
4.					
5.					
6.					

GEOLOGICAL TOPS	ELEVATION		CORE RECORD					
	Depth	Sub-Sea	From	To	Rec.	From	To	Rec.
Banff	932	+744	None					
Carlson	1334	+342						
May Line	2011	-335						
Tetcho	3032	-1356						
Slave Point	4730	-3054						
Watt Mtn.	5080	-3404						
Island River	5084	-3408						
LOG RECORD								
Huma	5225	-3549	Run No.	Type of Log		From	To	
Lower Paleozoic TD	5310	-3634	1	Dual Induction		5568	737	
	5586	-3910	1	Microlog Caliper		5572	4525	
			1	BHC Sonic-		5570	737	
				Gamma Ray-Caliper				
			1	Formation Density		5572	4500	
			1	<i>Special Reference Summary</i>		5570	737	
							</	

CEMENTING RECORD (Plug, Squeeze, etc.)				PERFORATING RECORD (Bullet, Jet)				SERVICING RECORD (Acidizing, Fracing, etc.)			
Date	From	To	Remarks	Date	From	To	Remarks	Date	From	To	Remarks
Feb. 28/68	5586	4680	440 sacks WOC 8 hrs.				None				None
Feb. 29/68	3057	3007	30 sacks Felt 42' low Ran 25 sacks								
Feb. 29/68	786	686	70 sacks + 21 CaCl ₂ WOC 8 hrs. Felt at 688'								
Feb. 29/68		Surface	18 sacks Cut off casing 3' below ground level welded on plate, erected sign								

DRILL STEM TESTS

No.	Date	Formation	From	To	V.O. Mins.	L.S.L. Mins.	F.S.L. Mins.	L.S.L.B.H.P.	F.S.L.B.H.P.	L.F.B.H.P.	F.F.B.H.P.	L.H.P.	F.H.P.	REMARKS
1	Feb. 27/68	Slave Pt.	4740	5200	60	30	60	-	1726	822	547	2383	2383	Misrun-MFE failed Rec. 220' wtr cush. 380' drilling and
2	Feb. 28/68	Slave Pt.	4732	5201	Field Readings of Pressures									

ANALYSIS						PRESENT STATUS OF WELL				
Lab. No.	Sample	From	To	Source	Remarks	Oil		(Interval.)	Company	
E68-6246	Water	4740'	5200'	DST #2					Shell Canada Limited	
						Gas		(Interval.)	Signed by	A.M. McLechlin
									Title	Manager - Edmonton Division Production
						Dry	Dry & abandoned		Date	March 5, 1968
						Susp.			Forms to be prepared in duplicate and forwarded to the Oil Conservation Engineer, Calgary, Alberta.	



File No.
Drilling Authority No. **202**

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

Application to Abandon a Well or Suspend Drilling

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

Name and number of well **Shell Union Pem As Tatcho J-12**
Location: Unit **J** Section **12** Grid **65°50'N. 121°00'W**
Latitude **66°41'49.260"** Longitude **121°02'48.362"**
From Established Reference Marker **60.69451° N. Lat. 121.04676° W. Long.**
Universal Well Location Reference
Permit No. **5026** Lease No. **WTR 479**

Shell Canada Limited
(Permitter, Licensee, Lessee)

Date of commencement of proposed program **February 28, 1968**

OIL, GAS, AND WATER ENCOUNTERED
(Depths)

Oil at **None**
Gas at **None**
Water at **all formations water bearing by logs**
Total Depth **5586** Date of last operations **March 1, 1968**
Present condition of well **dry & abandoned**

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Set At—	Sacks of Cement and Additives	Amount Pulled
9 5/8"	J-55 364	764.44	738	550 shs. + 22 CaCl₂	27.44
1.					
2.					
3.					
4.					
5.					

PROPOSED ABANDONMENT PROGRAM

Plug		Geological Formation	Number of Sacks of Cement	Remarks
No.	Position			
1	5586-4586	Slave Pt. - T.D.	440	906 feet
2	3057-3007	Tatcho	30	50 feet WC 8hrs.-Feel
3	786-686	Sfc. csg. & Buff	70	100 feet WC 8hrs.-Feel
4	Surface	Sfc. csg.	5	Cut off casing 3' below ground level. Weld on plate. Direct sign.

The following logs have been run **DILL, MLC, FDL, BMC, SGR-C** **Velocity Survey.**
Other operations proposed **None**

Operator **Shell Canada Limited** License No. **18285**
Operation **Box 156, Edmonton, Alberta** Contractor **Category, Alberta**
Address **R.G. Lord** Address
Responsible Agent **Edmonton** BY **6** March **68**
Dated at **M. MacLEOD A.M. McLechlan** **Shell Canada Limited** 19
Signed **Manager - Edmonton Div. Production** Company **1877**
Title **Operator's Exploratory Licence No.**

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 **Mrs. E.H.J. Thomas**
on the **28th** of **February 1968**.
Dated **15th March**, 19 **68**. **Oil Conservation Engineer**

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

Drilling Authority No. 302

Project No.

File No.



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

Application for a Drilling Authority

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

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

Name and number of well **Shell Union Pan Am Tetcho J-12**
Location: Unit **J** Section **12** Grid **60° 50' N, 121° 00' W**
Latitude **60° 41' 40.260"** Longitude **121° 02' 48.362"**

From Established Reference Marker

Universal Well Location Reference **60.69451° N. Lat. 121.04676° W. Long.**

Elevation: Ground **1660.6** K.B. **1676** feet above sea-level.

Well is expected to produce from **Slave Point** formation at a depth of about **5000** feet. Expected total final depth **6100**

Area assigned to well

(for Oil Conservation Engineer's use only)

Permit No. **3026** Lease No. **NTR 479** Acreage **62,568**

Permittee, licensee, or lessee **Shell Canada Limited**

Exploratory Licence No. **1877**

Surface owned by Crown or **Crown**

Petroleum and natural-gas rights owned by **Shell Canada Limited** and occupant.)

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

Casing Size O.D. (Inches)	Weight (Lb./Ft.)	Grade	New or Used	Estimated Depth	Sacks of Cement
1. 9-5/8"	366	J-55	New	700	550
2.					
3.					
4.					
5.					

Expected water, gas, and oil horizons and type of control equipment.

Slave Point

10" Series 900 Type B Hydraulic Double Shaeffer

10" Series 900 GK Hydril

Well will be drilled with Rotary Rig No. **10** by **Nabors Drilling Ltd.**

(Drilling Contractor or company)

Calgary, Alberta

Responsible agent of applicant:—

Contractor's Business Licence No. **18285**

At well **R. G. Lord**

At registered office **A. M. McLachlin**

Address **Box 186, Edmonton**

Address **Box 186, Edmonton, Alberta**

It is understood that if changes become necessary, notice of the change of plan will be submitted. **68**

Dated at **Edmonton**, this **5** day of **February**, 19**68**

Signed by **A. M. McLachlin** Company **Shell Canada Limited**

Title **Manager, Edmonton** Operator's Licence No. **1877**

**Division
Production**

(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 **6th February**, 19**68**

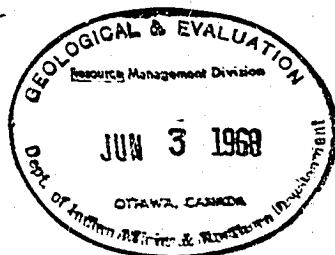
Oil Conservation Engineer

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

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WELL HISTORY REPORT
SHELL UNION PAN AM TETCHO J-12
SHELL CANADA LIMITED
MARCH 16, 1968



SECTION I SUMMARY OF WELL DATA

(a) Well Name and Number

Shell Union Pan Am Tetcho J-12

(b) Permittee

Shell Canada Limited

(c) Name of Operator

Shell Canada Limited,
P. O. Box 186,
Edmonton, Alberta.

(d) Location

Unit J, Section 12, Grid Area 60°50'N, 121°00'W
Latitude 60°41'40.260"N
Longitude 121°02'48.362"W

(e) Permit Number

3026

(f) Drilling Contractor

Nabors Drilling Company
Rig No. 10 - Rotary

(g) Drilling Authority

Drilling Authority No. 302
Issued February 8, 1968.

(h) Classification

Wildcat

(i) Elevations

Ground Elevation	1660.6 feet
K.B. Elevation	1676.2 feet

(j) Spudded

February 9, 1968.

(k) Completed Drilling

February 24, 1968.

(l) Abandoned

March 1, 1968.

(m) Total Depth and Plugged Back Total Depth

Total Depth 5586 ft. (Driller)
P.B.T.D. - surface

(n) Well Status

Dry and Abandoned.

(o) Rig Released

March 1, 1968.

(p) Hole Size

30" 2.015
13 3/4" to 738 ft.
8 3/4" to 5536 ft. (T.D.)

(q) Casing

27 inch conductor pipe set at 25 feet.
974.44' - 9 5/8 in 36# J-55 Japanese RG2 set at 738' K.B. with 550 sacks
+ 2% CaCl₂.

(r) Universal Well Location Reference

Lat. 60.69451° N.
Long. 121.04676° W.

(s) Unique Well Identifier

300J126050121000

SECTION II GEOLOGICAL SUMMARY(a) Formation Tops

	<u>Depth</u>
Mississippian Banff	932' (+744)
Devonian Carlson	1334' (+342)
Hay River Lime	2011' (-335)
Tetcho	3032' (-1356)
Slave Point	4730' (-3054)
Watt Mtn.	5080' (-3404)
Island River	5084' (-3408)
Hume	5225' (-3549)
Lower Paleozoic	5310' (-3634)

(b) Cores

No cores cut

(c) Sample Description

As attached report

SECTION II GEOLOGICAL SUMMARY(a) Formation Tops

	<u>Depth</u>
Mississippian Banff	932' (+744)
Devonian Carlson	1334' (+342)
Hay River Lime	2011' (-335)
Tetcho	3032' (-1356)
Slave Point	4730' (-3054)
Watt Mtn.	5080' (-3404)
Island River	5084' (-3408)
Hume	5225' (-3549)
Lower Paleozoic	5310' (-3634)

(b) Cores

No cores cut

(c) Sample Description

As attached report

SECTION III ENGINEERING SUMMARY(a) Drillstem Tests

<u>Test No.</u>	<u>Interval</u>	<u>T.O.</u>	<u>IFP</u>	<u>FFP</u>	<u>ISIP/time</u>	<u>FSIP/time</u>	<u>HP/HH</u>
1		Misrun					
2	4740-5200	60	822	547	-	1726/60min.	2353

Recovery - 220 feet of water cushion
380 feet of drilling mud

Drillstem Test Report 1 & 2 forwarded March 21, 1968.

(b) Casing Record

<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>Amount</u>	<u>Depth</u>	<u>Cement</u>
27"	Conductor	Pipe	-	25'	25 sks.
9 5/8	36#	J-55	17 joints	938'KB	550 sks + 2% CaCl ₂

(c) Bit Record

<u>No.</u>	<u>Size</u>	<u>Type</u>	<u>Depth Out</u>	<u>Feet Cut</u>	<u>Hours</u>
1A	13 3/4	OSC3	316	316(-20)	11 1/2
2A	13 3/4	OSC3	656	346	14 1/4
3A	13 3/4	OSC3	738	82	2
1	8 3/4	DTJ	1675	937	14 3/4
2	8 3/4	OSC3	2404	729	17
3	8 3/4	XIG	3505	1101	36 3/4
4	8 3/4	OSC3	4137	632	18 3/4
5	8 3/4	X3A	4998	861	24 3/4
6	8 3/4	SV2H	5255	257	22 1/4
7	8 3/4	WD7	5328	73	7 1/2
8	8 3/4	X55R	5437	109	22 1/4
9	8 3/4	RRG1	5500	63	12 1/4
10	8 3/4	RRG1	5586	85	20 3/4

Note: Measured Depth 5586 feet.

(d) Mud Record

Bentonite	75 sacks
Supercol	558 "
Plaster	5 "
Bi-carb	3 "
Caustic	4 "
Benex	85 "
Unical	12 "
C.M.C.	15 "
Protecto-magic	274 "
Diesel	160 bbls.
Atlosol	48 1/2 gals.
Sawdust	25 sacks
Fiber	75 sacks

(e) Deviation Record (Totco Degrees)

60'	3/4°	2007'	1/2°
120'	1/4°	2260'	1/2°
195'	1°	2400'	1/2°
225'	7/8°	2746'	3/4°
256'	1°	3050'	7/8°
340'	1/2°	3318'	3/4°
430'	1/2°	3500'	3/4°
530'	1 1/4°	3305'	1°
630'	1°	4100'	1/2°
656'	3/4°	4400'	3/4°
738'	1/2°	4670'	3/4°
1000'	0°	4975'	3/4°
1200'	3/4°	5255'	1°
1450'	0°	5325'	3/4°
1660'	3/4°	5586'	3/4°

(f) Abandonment Plugs

<u>Date</u>	<u>Interval</u>	<u>Cement & Additives</u>	<u>Remarks</u>
Feb. 28/68	5586-4680	440 sacks	
Feb. 29/68	3057-3007	30 sacks	Plug tagged 42' low. Reran with 25 sacks
Feb. 29/68	786-686	70 sacks & 2%CaCl ₂	Plug tagged at 688'
March 1/68	Surface	10 sacks	Cut off csg. and weld plate Erect post with sign.

Rathole - 5 sacks
Mousehole - 5 sacks

(g) Lost Circulation Zones

4950 feet - lost 150 bbl. drilling mud to formation. Added 15 sks sawdust and 7 sks fiber. Circulated and circulation restored.

5025 feet - lost 150 bbls. drilling mud to formation. Added sawdust, circulated, and circulation restored.

(h) Blowouts

None

SECTION IV LOGS

<u>Date</u>	<u>Interval</u>	<u>Type</u>
February 24, 1968	5570-737	B.H.C. Sonic Gamma Ray - Caliper
February 24, 1968	5568-737	Dual Induction Laterolog
February 25, 1968	5572-4500	B.H.C. Formation Density Log
February 25, 1968	5572-4525	Microlog Caliper

Velocity Survey for Reef Study.

Three copies of each log forwarded March 21, 1968.

SECTION V ANALYSIS

(a) Core Analysis

None

(b) Water Analysis

E66-6246 forwarded March 21, 1968

(c) Gas Analysis

None

(d) Oil Analysis

None

SECTION VI COMPLETION RECORD(a) Tubing Record

None

(b) Perforation Record

None

(c) Cementation Record

<u>Plug No.</u>	<u>Date</u>	<u>Interval</u>	<u>Formation</u>	<u>Cement</u>
1	Feb.20/68	5586-4680	Slave Pt-T.D.	440 sacks
2	Feb.29/68	3057-3007	Tetchu	30 sacks
3	Feb.29/68	786-686	Surface csg & Banff	70 sacks w/2% CaCl ₂
4	March 1/68	Surface	Surface csg.	10 sacks

Remarks - Plug #2 tagged 42 feet low. Reran with 25 sacks

Plug #3 - tagged at 688'.

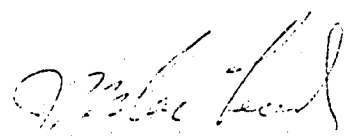
Plug #4 - cut off csg., welded on plate and erected post and sign.

(d) Acidization and Fracturing Record

None

(e) Back Pressure and Production Tests

None


 A. M. McLachlin, Manager,
 Edmonton Division Production.

SHELL UNION PAN AM TETCHO J-12

T.D. 5586'

K.B. 1676'

LATITUDE: 60° 41' 40.260" N.

LONGITUDE: 121° 02' 48.362" W.

0' -390'

NO SAMPLES.

390' -400'

Sandstone

Sandstone, unconsolidated,
sub-rounded.

400' -410'

Sandstone

Sandstone, unconsolidated,
sub-rounded.

410' -420'

Sandstone

Sandstone, unconsolidated,
sub-rounded.

420' -430'

Sandstone

Sandstone, unconsolidated,
sub-rounded.

430' -440'

Sandstone

Sandstone, unconsolidated,
sub-rounded.

440' -450'

Sandstone

Sandstone, unconsolidated,
sub-rounded.

450' -460'

Sandstone

Sandstone, unconsolidated,
sub-rounded, trace of shale.

460' -470'

Sandstone

Sandstone, unconsolidated,
sub-rounded, trace of shale.

470' -480'

Sandstone

Sandstone, unconsolidated,
sub-rounded, trace of shale.

480' -490'

Sandstone

Sandstone, unconsolidated,
sub-rounded, trace of shale.

490' -500'

Sandstone

Sandstone, unconsolidated,
sub-rounded, trace of shale.

500' -510'

Sandstone

Sandstone, unconsolidated,
sub-rounded, trace of shale.

510' -520'

Sandstone

Sandstone, unconsolidated,
sub-rounded, trace of shale.

520' -530'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
530' -540'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
540' -550'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
550' -560'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
560' -570'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
570' -580'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
580' -590'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
590' -600'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
600' -610'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
610' -620'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
620' -630'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
630' -640'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
640' -650'	Sandstone	Sandstone, unconsolidated, sub-rounded, trace of shale.
650' -660'	Sandstone - Shale	Sandstone, unconsolidated, interpreted as cavings, and dark grey to black shale.
660' -670'	Sandstone - Shale	Sandstone, unconsolidated, sub-rounded, with dark greyish black shale.
670' -680'	Shale	Shale, dark greyish black.

680' -690'	Shale	Shale, dark greyish black.
690' -700'	Shale	Shale, dark greyish black.
700' -710'	Shale	Shale, dark greyish black.
710' -720'	Shale	Shale, dark greyish black.
720' -780'		NO SAMPLES.
780' -790'	Shale	Shale, dark grey to black.
790' -800'	Shale	Shale, dark grey to black.
800' -810'	Shale	Shale, dark grey to black.
810' -820'	Shale	Shale, dark grey to black.
820' -830'	Shale	Shale, dark grey to black.
830' -840'	Shale	Shale, dark grey to black.
840' -850'	Shale	Shale, dark grey to black.
850' -860'	Shale	Shale, dark grey to black.
860' -870'	Shale	Shale, dark grey to black.
870' -880'	Shale	Shale, dark grey to black.
880' -890'	Shale	Shale, dark grey to black.
890' -900'	Shale	Shale, dark grey to black.
900' -910'	Shale	Shale, dark grey to black.
910' -920'	Shale	Shale, dark grey to black.
920' -930'	Shale	Shale, dark grey to black.
930' -940'	Shale	Shale, dark grey to black.
940' -950'	Shale	Shale, dark grey to black.
950' -960'	Shale	Shale, dark grey to black, trace of pyrite.
960' -970'	Shale	Shale, dark grey to black, trace of pyrite.

970' -980'	Shale	Shale, dark grey to black, trace of pyrite.
980' -990'	Shale	Shale, dark grey to black, trace of pyrite.
990' -1000'	Shale	Shale, dark grey to black, trace of pyrite.
1000' -1010'	Shale	Shale, dark grey to black, trace of pyrite.
1010' -1020'	Shale	Shale, dark grey to black, trace of pyrite.
1020' -1030'	Shale	Shale, dark grey to black, trace of pyrite.
1030' -1040'	Shale	Shale, dark grey to black, trace of pyrite.
1040' -1050'	Shale	Shale, dark grey to black, trace of pyrite.
1050' -1060'	Shale	Shale, dark grey to black, trace of pyrite.
1060' -1070'	Shale	Shale, dark grey to black, trace of pyrite.
1070' -1080'	Shale	Shale, medium grey to black.
1080' -1090'	Shale	Shale, medium grey to black.
1090' -1100'	Shale	Shale, medium grey to black.
1100' -1110'	Shale	Shale, medium grey to black.
1110' -1120'	Shale	Shale, medium grey to black.
1120' -1130'	Shale	Shale, medium grey to black.
1130' -1140'	Shale	Shale, medium grey to black.
1140' -1150'	Shale	Shale, medium grey to black.
1150' -1160'	Shale	Shale, black.
1160' -1170'	Shale	Shale, black.

1170' -1180'	Shale	Shale, black.
1180' -1190'	Shale	Shale, mostly black, some tan coloured shale.
1190' -1200'	Shale	Shale, mostly black, some tan coloured shale.
1200' -1210'	Shale	Shale, mostly black, some tan coloured shale.
1210' -1220'	Shale	Shale, mostly black, some tan coloured shale.
1220' -1230'	Shale	Shale, mostly black, some tan coloured shale.
1230' -1240'	Shale	Shale, mostly black, some tan coloured shale.
1240' -1250'	Shale	Shale, mostly black, some tan coloured shale.
1250' -1260'	Shale	Shale, mostly black, some tan coloured shale.
1260' -1270'	Shale	Shale, mostly black, some tan coloured shale.
1270' -1280'	Shale	Shale, mostly black, some tan coloured shale.
1280' -1290'	Shale	Shale, mostly black, some tan coloured shale.
1290' -1300'	Shale	Shale, mostly black, some tan coloured shale.
1300' -1310	Shale	Shale, mostly black, some tan coloured shale.
1310' -1320'	Shale	Shale, mostly black, some tan coloured shale.
1320' -1330'	Shale	Shale, mostly black, some tan coloured shale.
1330' -1340'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrite

1340' -1350'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
1350' -1360'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
1360' -1370'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
1370' -1380'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
1380' -1390'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
1400' -1410'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
1410' -1420'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
1420' -1430'	Shale	Shale, mostly black, some tan coloured shale, trace of pyrit.
1430' -1440'	Shale	Shale, medium grey to black.
1440' -1450'	Limestone - Shale	Limestone with medium grey to black shale. Limestone appear chalky in parts.
1450' -1460'	Limestone	Limestone, trace of crinoid stems.
1460' -1470'	Limestone	Limestone, buff to white, trace of crinoid stems.
1470' -1480'	Limestone	Limestone, buff to white, trace of crinoid stems.
1480' -1490'	Limestone	Limestone, buff to white, trace of crinoid stems.
1490' -1500'	Limestone	Limestone, buff to white, trace of crinoid stems.
1500' -1510'	Limestone	Limestone, buff to white, trace of crinoid stems.

1510' -1520'	Limestone	Limestone, buff to white, trace of crinoid stems.
1520' -1530'	Limestone	Limestone, buff to white, trace of crinoid stems.
1530' -1540'	Limestone	Limestone, buff to white, trace of crinoid stems.
1540' -1550'	Limestone	Limestone, buff to white, trace of crinoid stems.
1550' -1560'	Limestone	Limestone, buff to white, trace of crinoid stems.
1560' -1570'	Limestone	Limestone, buff to white, trace of crinoid stems.
1570' -1580'	Limestone	Limestone, buff to white, trace of crinoid stems.
1580' -1590'	Limestone - Shale	Limestone, buff to white, trace of crinoid stems with medium grey shale.
1590' -1600'	Limestone - Shale	Limestone, buff to white, trace of crinoid stems with medium grey shale.
1600' -1610'	Limestone - Shale	Limestone, buff to white, trace of crinoid stems, with medium grey shale.
1610' -1620'	Shale - Limestone	Shale, medium grey with buff to white limestone. Trace of crinoid stems and pyrite.
1620' -1630'	Shale - Limestone	Shale, medium grey with buff to white limestone. Trace of crinoid stems and pyrite.
1630' -1640'	Shale	Shale, dark grey.
1640' -1650'	Shale	Shale, dark grey.
1650' -1660'	Shale	Shale, dark grey.
1660' -1670'	Shale - Limestone	Shale, dark grey with some limestone.

1670' -1680'	Shale - Limestone	Shale, grey with limestone.
1680' -1690'	Shale	Shale, dark grey.
1690' -1700'	Shale	Shale, dark grey.
1700' -1710'	Shale	Shale, dark grey.
1710' -1720'	Shale	Shale, dark grey.
1720' -1730'	Shale	Shale, dark grey.
1730' -1740'	Shale	Shale, dark grey.
1740' -1750'	Shale	Shale, dark grey.
1750' -1760'	Shale	Shale, dark grey.
1760' -1770'	Shale	Shale, dark grey, trace of pyrite.
1770' -1780'	Shale	Shale, dark grey, trace of pyrite.
1780' -1790'	Shale	Shale, dark grey, trace of pyrite.
1790' -1800'	Shale	Shale, dark grey, trace of pyrite, very limy.
1800' -1810'	Limestone - Shale	Limestone, very shaly.
1810' -1820'	Limestone - Shale	Limestone, very shaly.
1820' -1830'	Limestone - Shale	Limestone, very shaly.
1830' -1840'	Limestone	Limestone, shaly.
1840' -1850'	Limestone	Limestone, shaly.
1850' -1860'	Shale - Limestone	Shale, dark grey, very limy.
1860' -1870'	Shale - Limestone	Shale, dark grey, very limy.

1870' -1880'	Limestone	Limestone.
1880' -1890'	Limestone - Shale	Limestone, very shaly.
1890' -1900'	Limestone - Shale	Limestone, very shaly.
1900' -1910'	Limestone - Shale	Limestone with dark grey shale.
1910' -1920'	Limestone - Shale	Limestone with dark grey shale.
1920' -1930'	Shale - Limestone	Shale, dark grey with limestone
1930' -1940'	Shale	Shale, dark grey, trace of crinoid stems.
1940' -1950'	Shale	Shale, dark grey, trace of crinoid stems.
1950' -1960'	Shale	Shale, dark grey, trace of crinoid stems.
1960' -1970'	Shale	Shale, dark grey, trace of crinoid stems.
1970' -1980'	Shale	Shale, dark grey, trace of crinoid stems.
1980' -1990'	Shale	Shale, dark grey, trace of crinoid stems.
1990' -2000'	Shale	Shale, dark grey, trace of crinoid stems.
2000' -2010'	Shale	Shale, dark grey, trace of crinoid stems.
2010' -2020'	Shale	Shale, medium grey, limy, trace of crinoid stems.
2020' -2030'	Shale	Shale, medium grey, limy, trace of crinoid stems.
2030' -2040'	Shale	Shale, medium grey, limy, trace of crinoid stems.

2040' -2050'	Shale	Shale, medium gray, limy, trace of crinoid stems.
2050' -2060'	Limestone	Limestone, medium gray, shaly trace of crinoid stems.
2060' -2070'	Limestone	Limestone, buff to white, trace of crinoid stems.
2070' -2080'	Limestone	Limestone, buff to white, trace of crinoid stems, chalky in part.
2080' -2090'	Limestone	Limestone, buff to white, trace of crinoid stems, chalky in part.
2090' -2100'	Limestone	Limestone, buff to white, trace of crinoid stems, chalky in part.
2100' -2110'	Limestone	Limestone, buff to white, trace of crinoid stems, chalky in part.
2110' -2120'	Limestone	Limestone, buff to white, trace of crinoid stems, chalky in part.
2120' -2130'	Limestone	Limestone, buff to white, trace of crinoid stems, chalky in part.
2130' -2140'	Limestone	Limestone, buff to white, trace of crinoid stems, chalky in part.
2140' -2150'	Shale	Shale, limy with trace of crinoid stems.
2150' -2160'	Shale	Shale, limy with trace of crinoid stems.
2160' -2170'	Shale	Shale, limy with trace of crinoid stems.
2170' -2180'	Limestone	Limestone, buff to white, trace of crinoid stems, shaly.
2180' -2190'	Limestone	Limestone, buff to white, trace of crinoid stems, shaly.
2190' -2200'	Limestone	Limestone, buff to white, trace of crinoid stems.
2200' -2210'	Limestone	Limestone, buff to white, trace of crinoid stems.

2210' -2220'	Limestone	Limestone, buff to white, trace of crinoid stems.
2220' -2230'	Limestone	Limestone, buff to white, trace of crinoid stems.
2230' -2240'	Limestone	Limestone, buff to white, trace of crinoid stems.
2240' -2250'	Limestone	Limestone, buff to white, trace of crinoid stems.
2250' -2260'		VERY POOR SAMPLES. Too dirty to log.
2260' -2270'	Limestone	Limestone, buff to white, trace of crinoid stems.
2270' -2280'	Limestone	Limestone, buff to white, trace of crinoid stems.
2280' -2290'	Limestone	Limestone, buff to white, trace of crinoid stems.
2290' -2300'	Limestone	Limestone, buff to white, trace of crinoid stems.
2300' -2310'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, no shows, partly chalky.
2310' -2320'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, no shows, partly chalky.
2320' -2330'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, no shows, partly chalky.
2330' -2340'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, no shows, partly chalky.
2340' -2350'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, no shows, partly chalky.
2350' -2360'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, no shows, partly chalky.

2360' -2370'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2370' -2380'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2380' -2390'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2390' -2400'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2400' -2410'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2410' -2420'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2420' -2430'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2430' -2440'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2440' -2450'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2450' -2460'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2460' -2470'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2470' -2480'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.
2480' -2490'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, n shows, partly chalky.

2490' -2500'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, shows, partly chalky.
2500' -2510'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, shows, partly chalky.
2510' -2520'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, shows, partly chalky.
2520' -2530'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, shows, partly chalky.
2530' -2540'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, shows, partly chalky.
2540' -2550'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, shows, partly chalky.
2550' -2560'	Limestone	Limestone, buff to white, trace of crinoid stems. No stains, shows, partly chalky.
2560' -2570'	Limestone - Siltstone	Limestone, buff to white, trace of crinoid stems. Siltstone, hard, no visible porosity. No stains, no shows, partly chalky.
2570' -2580'	Siltstone - Limestone	Siltstone, hard, no visible porosity. Limestone, buff to white, trace of crinoid stems, no stains, no shows, partly chalky.
2580' -2590'	Siltstone - Limestone	Siltstone, hard, no visible porosity. Limestone, buff to white, trace of crinoid stems, no stains, no shows, partly chalky.
2590' -2600'	Siltstone - Limestone	Siltstone, hard, no visible porosity. Limestone, buff, trace of crinoid stems.
2600' -2610'	Siltstone	Siltstone, hard, no visible porosity.

2610' -2620'	Siltstone	Siltstone, hard, no visible porosity.
2620' -2630'	Siltstone	Siltstone, hard, no visible porosity.
2630' -2640'	Shale	Shale, medium grey.
2640' -2650'	Shale	Shale, medium grey.
2650' -2660'	Shale	Shale, medium grey.
2660' -2670'	Shale	Shale, medium grey.
2670' -2680'	Shale	Shale, medium grey.
2680' -2690'	Shale	Shale, medium grey.
2690' -2700'	Shale	Shale, medium grey.
2700' -2710'	Shale	Shale, medium grey.
2710' -2720'	Shale	Shale, medium grey.
2720' -2730'	Shale	Shale, medium grey.
2730' -2740'	Shale	Shale, medium grey.
2740' -2750'	Shale	Shale, medium grey.
2750' -2760'	Shale	Shale, medium grey.
2760' -2770'	Shale	Shale, medium grey.
2770' -2780'	Shale	Shale, medium grey.
2780' -2790'	Shale	Shale, medium grey.
2790' -2800'	Shale	Shale, medium grey.
2800' -2810'	Shale	Shale, medium grey.
2810' -2820'	Shale	Shale, medium grey.
2820' -2830'	Shale	Shale, medium grey.
2830' -2840'	Shale	Shale, medium grey.
2840' -2850'	Shale	Shale, medium grey.
2850' -2860'	Shale	Shale, medium grey.

2860' -2870'	Shale	Shale, medium grey.
2870' -2880'	Shale	Shale, medium grey.
2880' -2890'	Shale	Shale, medium to dark grey.
2890' -2900'	Shale	Shale, medium to dark grey.
2900' -2910'	Shale	Shale, medium to dark grey.
2910' -2920'	Shale	Shale, medium to dark grey.
2920' -2930'	Shale	Shale, medium to dark grey.
2930' -2940'	Shale	Shale, medium to dark grey.
2940' -2950'	Shale	Shale, medium to dark grey.
2950' -2960'	Shale	Shale, medium to dark grey.
2960' -2970'	Shale	Shale, medium to dark grey.
2970' -2980'	Shale	Shale, medium to dark grey.
2980' -2990'	Shale	Shale, medium to dark grey.
2990' -3000'	Shale	Shale, medium to dark grey.
3000' -3010'	Shale	Shale, medium to dark grey.
3010' -3020'	Shale	Shale, medium to dark grey.
3020' -3030'	Shale	Shale, medium to dark grey.
3030' -3032'	Shale	Shale, medium to dark grey.
3032' -3040'	Limestone	Limestone, with some fragments, and some medium to dark grey shale.
3040' -3050'	Limestone	Limestone, with some fragments, and some medium to dark grey shale.
3050' -3060'	Limestone	Limestone, with some fragments, and some medium to dark grey shale.
3060' -3068'	Limestone	Limestone, with some fragments, and some medium to dark grey shale.

3068' -3070'	Limestone	Limestone with some medium to dark grey shale.
3070' -3080'	Limestone	Limestone with some medium to dark grey shale.
3080' -3090'	Limestone	Limestone with some medium to dark grey shale.
3090' -3100'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous, occasional trace of silt.
3100' -3110'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3110' -3120'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3120' -3130'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3130' -3140'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3140' -3150'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3150' -3160'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3160' -3170'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3170' -3180'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3180' -3190'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3190' -3200'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3200' -3210'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3210' -3220'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3220' -3230'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3230' -3240'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3240' -3250'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3250' -3260'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3260' -3270'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3270' -3280'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3280' -3290'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3290' -3300'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3300' -3310'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3310' -3320'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3320' -3330'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3330' -3340'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3340' -3350'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3350' -3360'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3360' -3370'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3370' -3380'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3380' -3390'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3390' -3400'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3400' -3410'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3410' -3420'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3420' -3430'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3430' -3440'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3440' -3450'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3450' -3460'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3460' -3470'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3470' -3480'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3480' -3490'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3490' -3500'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3500' -3510'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3510' -3520'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3520' -3530'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3530' -3540'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3540' -3550'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3550' -3560'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3560' -3570'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3570' -3580'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3580' -3590'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3590' -3600'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3600' -3610'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3610' -3620'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3620' -3630'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3630' -3640'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3640' -3650'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3650' -3660'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3660' -3670'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3670' -3680'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3680' -3690'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3690' -3700'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3700' -3710'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3710' -3720'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3720' -3730'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3730' -3740'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3740' -3750'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3750' -3760'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3760' -3770'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3770' -3780'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3780' -3790'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3790' -3800'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3800' -3810'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3810' -3820'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3820' -3830'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3830' -3840'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3840' -3850'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3850' -3860'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3860' -3870'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3870' -3880'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3880' -3890'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3890' -3900'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3900' -3910'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3910' -3920'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3920' -3930'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3930' -3940'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3940' -3950'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3950' -3960'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3960' -3970'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

3970' -3980'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3980' -3990'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
3990' -4000'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4000' -4010'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4010' -4020'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4020' -4030'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4030' -4040'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4040' -4050'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4050' -4060'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4060' -4070'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

4070' - 4080'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4080' - 4090'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4090' - 4100'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4100' - 4110'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4110' - 4120'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4120' - 4130'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4130' - 4140'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4140' - 4150'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4150' - 4160'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4160' - 4170'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

4180' - 4190'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.
4190' - 4200'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.
4200' - 4210'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.
4210' - 4220'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.
4220' - 4230'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.
4230' - 4240'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.
4240' - 4250'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.
4250' - 4260'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.
4260' - 4270'	Shale	Shale, light to medium gray, somewhat greenish, trace calcareous material, occasional trace of silt.

4270' - 4280'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4280' - 4290'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4290' - 4300'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4300' - 4310'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4310' - 4320'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4320' - 4330'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4330' - 4340'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4340' - 4350'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4350' - 4360'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4360' - 4370'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

4370' -4380'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4380' -4390'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4390' -4400'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4400' -4410'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4410' -4420'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4420' -4430'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4430' -4440'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4440' -4450'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4450' -4460'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4460' -4470'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

4470' - 4480'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4480' - 4490'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4490' - 4500'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4500' - 4510'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4510' - 4520'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4520' - 4530'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4530' - 4540'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4540' - 4550'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4550' - 4560'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4560' - 4570'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

4570' -4580'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4580' -4590'	Shale	Shale, light to medium grey, Somewhat greenish, trace calcareous material, occasional trace of silt.
4590' -4600'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4600' -4610'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4610' -4620'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4620' -4630'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4630' -4640'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4640' -4650'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4650' -4660'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4660' -4670'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.

4670' - 4680'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4680' - 4690'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4690' - 4700'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4700' - 4710'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4710' - 4720'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4720' - 4730'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4730' - 4740'	Shale	Shale, light to medium grey, somewhat greenish, trace calcareous material, occasional trace of silt.
4740' - 4890'		VERY POOR SAMPLES. All material indicated to beavings.
4890' - 4900'	Limestone	Limestone, medium grey, fossiliferous and pelletal, with some stroms and corals.
4900' - 4910'	Limestone	Limestone, medium to light grey, fossiliferous and fragmental, some stroms.
4910' - 4920'	Limestone	Limestone, medium to light grey, fossiliferous and fragmental, some stroms. Trace of spar.

4890' -4930'	Limestone	Limestone, medium to light grey, fragmental with some fossils, and pellets, small amount of spar.
4930' -4940'	Limestone	Limestone, medium to light grey, some spar and stroms.
4940' -4950'	Limestone	Limestone, medium to light grey, some spar and stroms.
4950' -4960'	Limestone	Limestone, medium to light grey, some spar, stroms and corals.
4960' -4970'		NO SAMPLES.
4970' -4980'	Limestone	Limestone, fragmental, medium to light grey, some spar.
4980' -4990'	Limestone	Limestone, medium to light grey, some corals.
4990' -5000'	Limestone	Limestone, medium to light grey, some corals.
5000' -5010'	Limestone	Limestone, pelletal, medium to light grey, trace of spar, stroms.
5010' -5020'	Limestone	Limestone, pelletal, medium to light grey, trace of spar, stroms.
5020' -5030'	Limestone	Limestone, fragmental, medium to light grey, trace of spar.
5030' -5040'	Limestone	Limestone, fragmental, medium to light grey.
5040' -5050'	Limestone	Limestone, pelletal, dark grey to slightly brown, some lithic mud, trace of shale, some fossils.
5050' -5060'	Limestone	Limestone, dark grey to slightly brown, some crinoids.
5060' -5070'	Limestone	Limestone, fragmental, dark grey to slightly brown, some fossils.

5070' -5080'	Limestone	Limestone, fragmental, some fossils, dark gray to slightly brown.
5080' -5090'	Limestone	Limestone, fossiliferous, dark gray to light brown, trace of clear sand.
5090' -5100'	Limestone	Limestone, fossiliferous, dark gray to light brown, trace of clear sand.
5100' -5110'	Limestone	Limestone, pelletal, dark gray to light brown, some spar, trace of sand and shale.
5110' -5120'	Limestone	Limestone, fragmental, dark gray to light brown.
5120' -5130'	Limestone	Limestone, fragmental, dark gray to light brown.
5130' -5140'	Limestone	Limestone, some fragments, dark gray to light brown, some fossils.
5140' -5150'	Limestone	Limestone, dark gray to light brown.
5150' -5160'	Limestone	Limestone, fragments, dark gray to light brown.
5160' -5170'	Limestone	Limestone, fragmental, dark gray to light brown, POOR SAMPLES.
5170' -5180'	Limestone	Limestone, fragmental, dark gray to light brown, trace of shale. POOR SAMPLES.
5180' -5190'	Limestone	Limestone, dark gray to slightly brown, trace of dolomite.
5190' -5195'	Dolomite	Dolomite, dark gray.
5195' -5200'	Limestone	Limestone, dark to medium gray, trace of spar.
5200' -5210'	Limestone - Dolomite	Limestone, medium to dark gray, some dolomite.
5210' -5215'	Limestone	Limestone, fragmental, dark to medium gray, trace of spar.

5215' -5220'	Dolomite - Limestone	Dolomite, medium to dark grey, some limestone mud.
5220' -5230'	Dolomite	Dolomite, medium to dark grey.
5230' -5240'	Dolomite	Dolomite, medium grey, trace of spar.
5240' -5250'	Dolomite	Dolomite, medium grey, trace of spar.
5250' -5260'	Dolomite	Dolomite, medium grey.
5260' -5270'	Dolomite	Dolomite, medium grey, rare spar.
5270' -5280'	Dolomite	Dolomite, medium grey.
5280' -5290'	Dolomite	Dolomite, medium grey.
5290' -5300'	Dolomite	Dolomite, medium grey, rare spar.
5300' -5310'	Dolomite	Dolomite, medium grey.
5310' -5320'	Dolomite	Dolomite, medium grey.
5320' -5330'	Dolomite	Dolomite, medium grey.
5330' -5340'	Sandstone	Sandstone, light grey to white, trace of dolomite.
5340' -5350'	Sandstone	Sandstone, very light grey, trace of pyrite.
5350' -5360'	Sandstone	Sandstone, very light grey, trace of dolomite, pyrite.
5360' -5370'	Sandstone	Sandstone, very light grey, trace of dolomite, pyrite.
5370' -5380'	Sandstone	Sandstone, very light grey, trace of dolomite, pyrite.
5380' -5390'	Sandstone	Sandstone, very light grey, trace of dolomite, pyrite.
5390' -5400'	Sandstone	Sandstone, very light grey, trace of dolomite, pyrite.

5400' -5410'	Sandstone	Sandstone, blue-grey, some shale, trace of mica.
5410' -5420'	Sandstone	Sandstone, blue-grey, some shale, trace of mica. SAMPLE QUALITY VARIABLE.
5420' -5430'	Sandstone	Sandstone, blue-grey, some shale, trace of mica. SAMPLE QUALITY VARIABLE.
5430' -5440'	Sandstone	Sandstone, blue-grey, some shale, trace of mica. SAMPLE QUALITY VARIABLE.
5440' -5450'	Sandstone	Sandstone, blue-grey, some shale, trace of mica. SAMPLE QUALITY VARIABLE.
5450' -5460'	Sandstone	Sandstone, blue-grey, some shale, trace of mica. SAMPLE QUALITY VARIABLE.
5460' -5470'	Sandstone	Sandstone, very light grey, trace of pyrite.
5470' -5480'	Sandstone	Sandstone, very light grey, trace of pyrite.
5480' -5490'	Sandstone	Sandstone, very light grey, trace of pyrite.
5490' -5500'	Sandstone	Sandstone, very light grey, trace of pyrite, glauconite.
5500' -5510'	Sandstone	Sandstone, very light grey, trace of pyrite, glauconite.
5510' -5520'	Sandstone	Sandstone, very light grey, trace of pyrite, glauconite.
5520' -5530'	Sandstone	Sandstone, pink.
5530' -5540'	Sandstone	Sandstone, pink.
5540' -5550'	Sandstone	Sandstone, pink.
5550' -5560'	Sandstone	Sandstone, blue-grey, some white mica.

5560' -5570'

Metamorphic
Psammite

Pink-grey, metamorphic psammite
with thin peletic intercalations
Some weathering of pyrite.

5570' -5580'

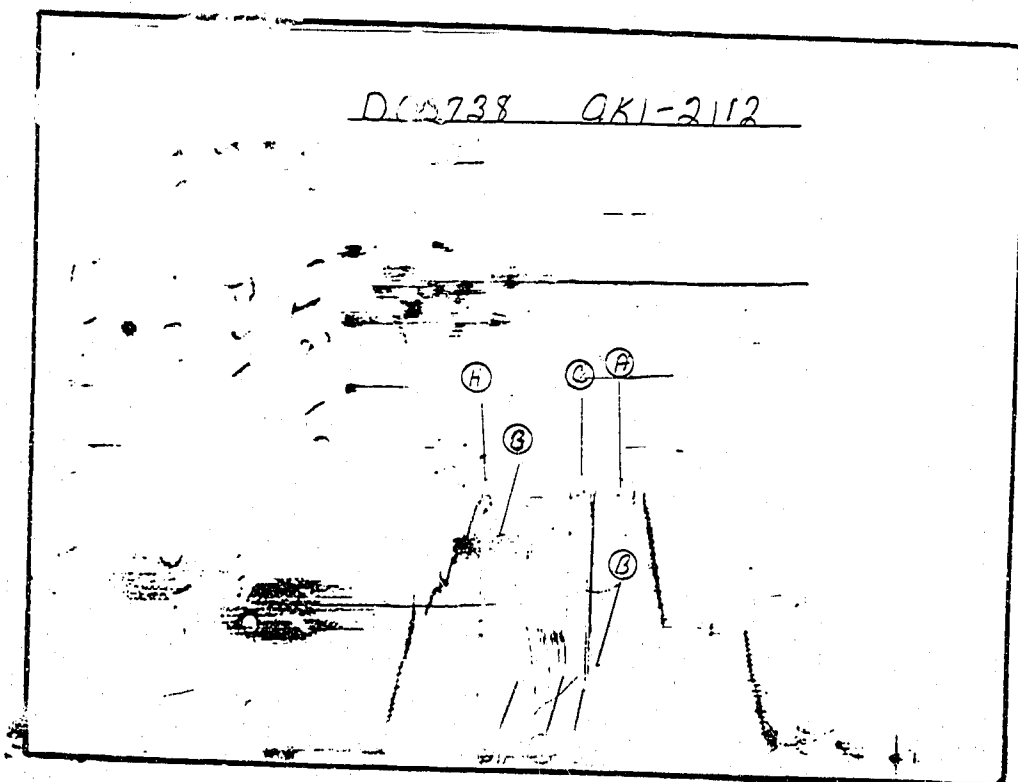
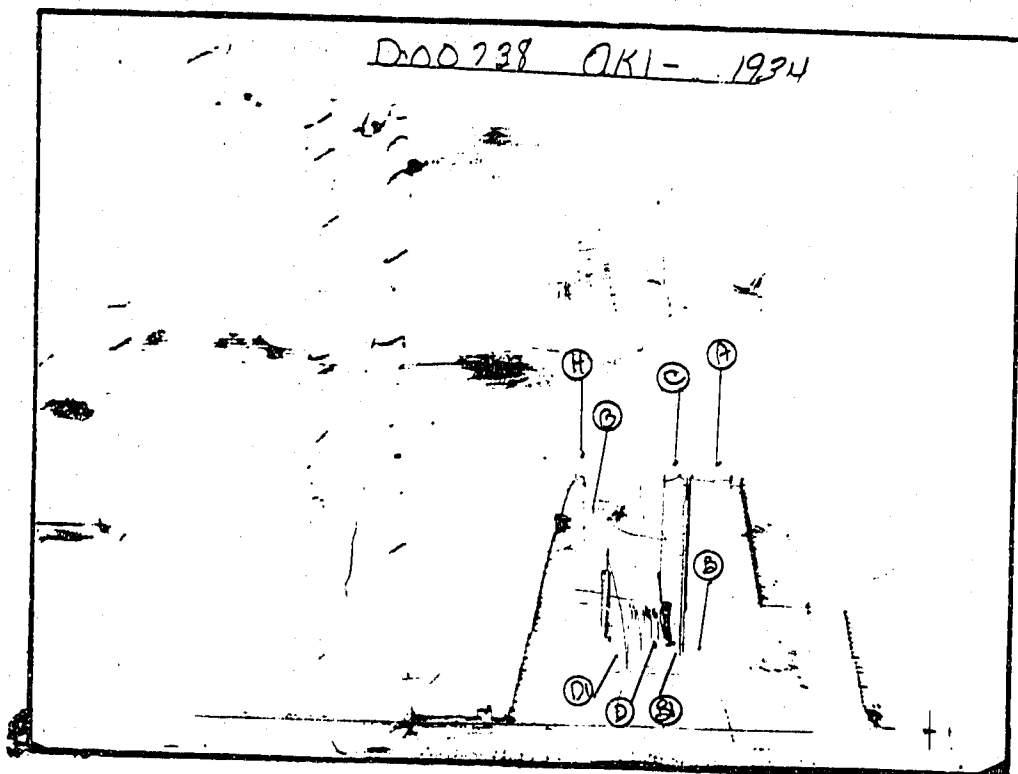
Metamorphic
Psammite

Pink-grey, metamorphic Psammite
with thin peletic intercalations
Some weathering of pyrite.

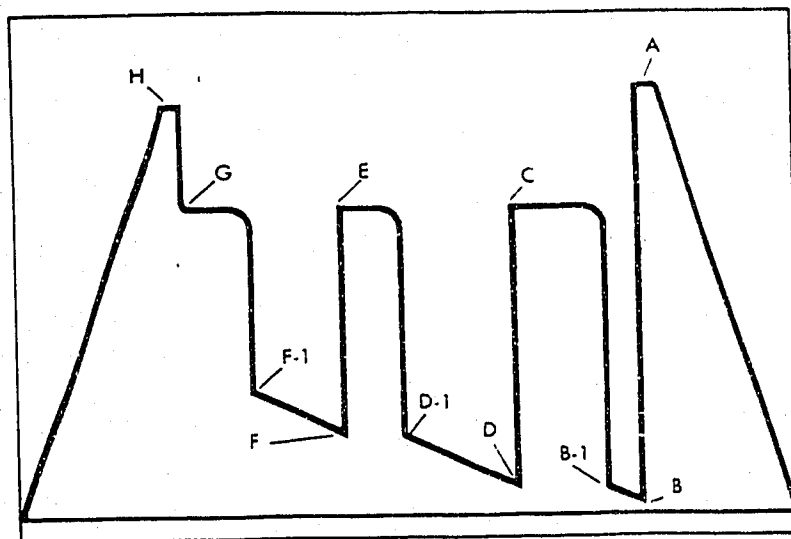
5580' -5586'

Metamorphic
Psammite

Pink-grey, metamorphic psammite
with thin peletic intercalations
Some weathering of pyrite.



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.



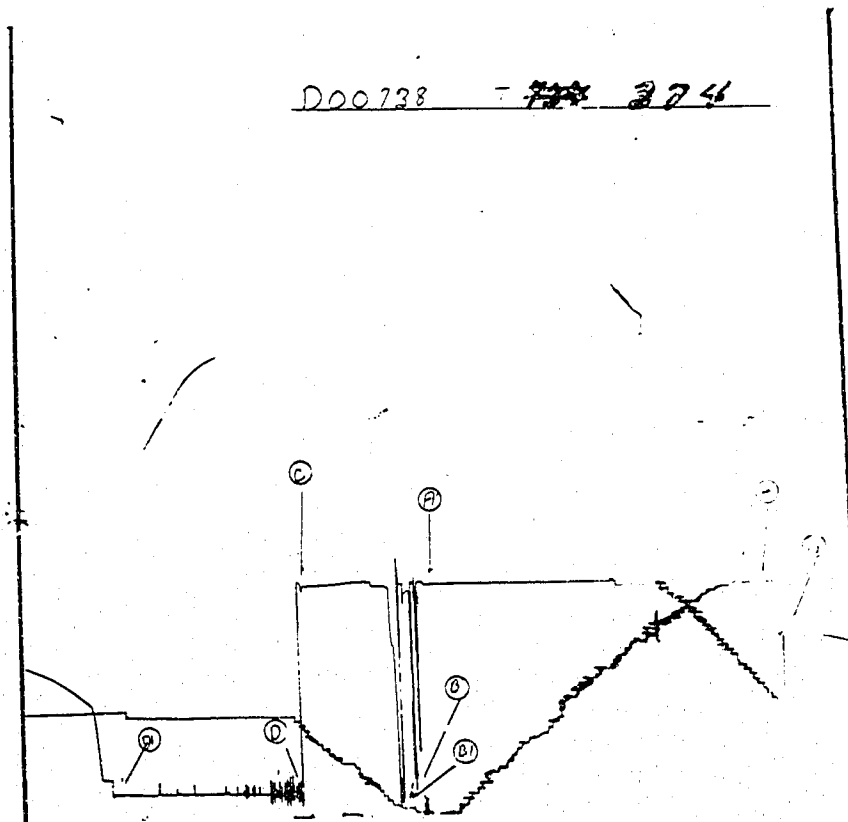
FIELD
REPORT NO.
D-00739

RECORDER NO.
T-374

CAPACITY
7000

REPORTS
REQUESTED
10

D00738 - ~~722~~ 374



PRESSURE DATA

INSTRUMENT No.		T-374	AKI-1934	AKI-2112	FIELD REPORT No. <u>D-00738</u>
CAPACITY (psig)		7000	7000	7000	
INSTRUMENT DEPTH		4709	4755	4760	
INSTRUMENT OPENING		INSIDE	O. S. DE	OUTSIDE	
PRESSURE GRADIENT psi/FT					
WELL TEMP. °F.					TIME DATA
INITIAL HYDROSTATIC	A	1310#	1321#	1350#	TIME GIVEN
FIRST FLOW	B	209#	540#	140#	2 MINS
	C	235#	645#	111#	
INITIAL SHUT-IN	D	2300# FALSE	1225# FALSE	1299# FALSE	30 MINS
SECOND FLOW	E	331#	749#	709#	60 MINS
	F	345#	512#	513#	
SECOND SHUT-IN	G				MINS
THIRD FLOW	H				MINS
	I				
FINAL SHUT-IN	J	1814#	1937#	1639#	60 MINS
FINAL HYDROSTATIC	K	2202#	1309#	2310#	CLOCK TRAVEL
					IN/MIN.

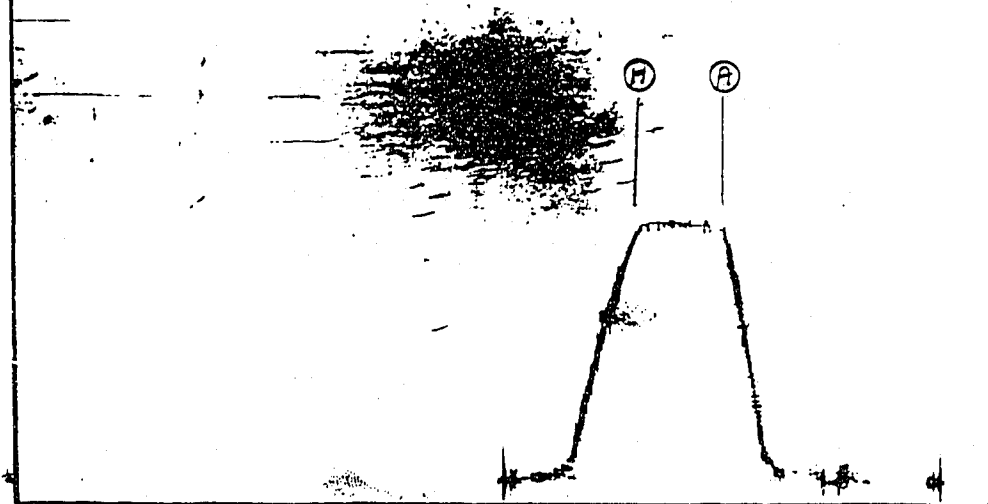
REMARKS:

PRESSURE INCREMENTS ON RECORDER AK1-2112

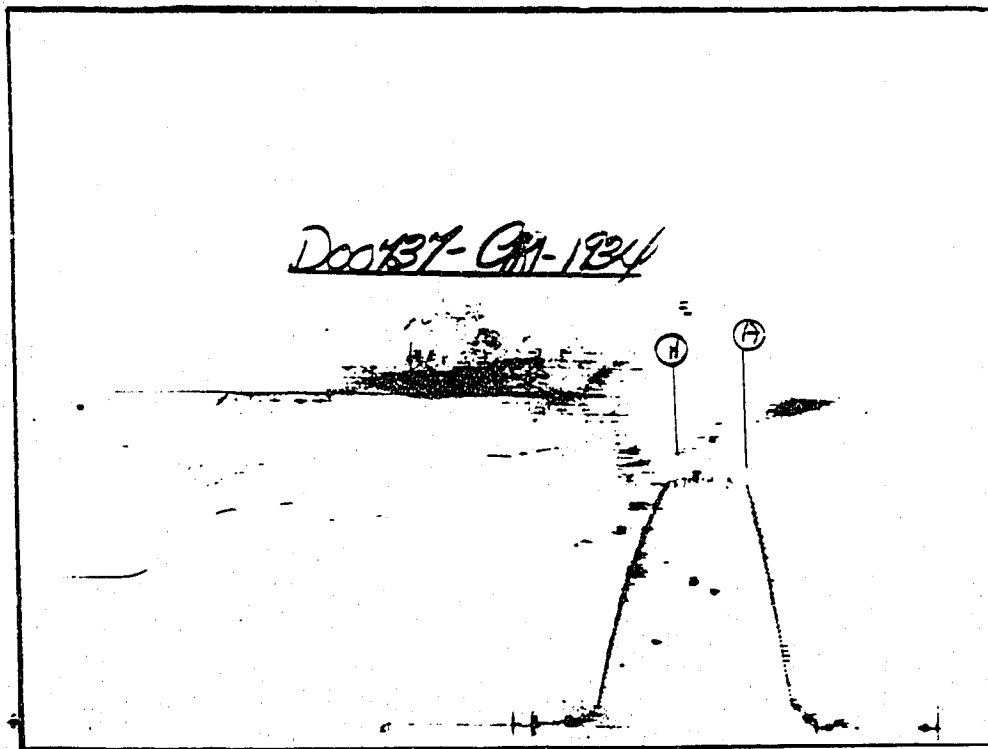
[illegible]

TEST DATA						TOOL SEQUENCE		
Formation	Zone Thickness		Ft.		Tool	Length	O.D.	
	5201	T.D.	5586		SUB.	.83	6"	
Type of Test	OPEN HOLE		BYPASS		P.O. SUB.	.65	4-3/4"	
Time Started in Hole	0315	Hrs.	Tool Opened	0746	Hrs.	SUB.	.83	
First Flow	2	Min.	Shut In	30	Min.	JARS & SUBS.	9.00	
Second Flow	60	Min.	Second Shut In		Min.	SUBS.	1.90	
Third Flow		Min.	Final Shut In	60	Min.	MFE TOOL	9.10	
Pulled Loose ft	1018	Hrs.	Out of Hole	1500	Hrs.	BYPASS TOOL	3.00	
Wt. Set on Packers	30,000	=	Pulled Loose Wt.	130,000	=	RECORDER	6.00	
Description of Blow During Test					H. SUB.	.80	4-3/8"	
WEAK BLOW THROUGHOUT TEST.					SAFETY JOINT	1.75	4-5/8"	
TOOL WAS CHASED 10' DURING TEST PERIOD.					S.S. & PACKER	9.10	7-1/2"	
					T.C. & PACKER	5.80	7-3/4"	
FLUID RECOVERY Was Test Reverse Circulated Yes ☐ No ☐					TOTAL	48.76		
Total Fluid Recovered	600'				STUB.	1.50	4-3/4"	
Description of Fluid Recovered N.T. REPORTED					PERF.	19.00	4-3/4"	
					R.SUB.	.83	4-3/4"	
					RECORDER	4.40	4-7/8"	
					RECORDER	4.40	4-7/8"	
					SUB.	.83	6"	
					D.C.	434.00	6-1/4"	
					SUB.	.83	6"	
					T.C. & STUB.	3.50	5-7/8"	
GAS BLOW MEASUREMENT					TOTAL INTERVAL	469.29		
Measured With ID Riser					PACKERS (2)	9.85	7-1/2"	
Type of Instrument					PERF.	6.00	4-3/8"	
Time	Size Choke	Reading Inches	Cubic Feet Day		SUB.	.85	6"	
					O.P.	366.15	4-1/2"	
					SUB.	.92	6"	
					B.N. & PERF.	1.50	4-3/4"	
					TOTAL BELOW INTV.	385.27		
					TOTAL LENGTH	903.32		
					Elevation	1660.5 GL 1676 KB		
					Bottom Hole Choke Size	1/2"		
REMARKS: TEST CONCLUSIVE BUT NOT ENTIRELY					Fluid Cushion Type	WATER	Amt. 300'	
SATISFACTORY. MISRUN TOOL PARTIALLY					MUD AND HOLE DATA			
PLUGGED.					Mud Type	P. MAGIC	W.L. 6.5	
					Filter Cake	2/32	Visc. 110 Wt. 9.2	
					Time Taken			
					Contractor	NABOR'S DRILLING	Rig No. 10	
					Drill Pipe Size	4-1/2" H90 & 4-1/2" XH		
					Drill Collar Size		Length	
					Main Hole Size	8-3/4"		
					Rat Hole Size			
District	FORT ST. JOHN		Ticker No.	0-00738	Date	FEBRUARY 28, 1968	Test No. 2 J.T.L. No. 2	
Company	SHELL CANADA LIMITED				Address	P.O. BOX 186		
Well Name	SHELL UNION PAN AM TETCHO J-12				EDMONTON, ALBERTA			
Number	60°41'40.26"N 121°02'48.36"W		Field	TROUT LAKE	Province	N.W.T.		
Formation			Co Rep					
and Interval	4732-5201 DST#2		Technician	D. BRAUER				
Distribution of Reports		10 -- EDMONTON						

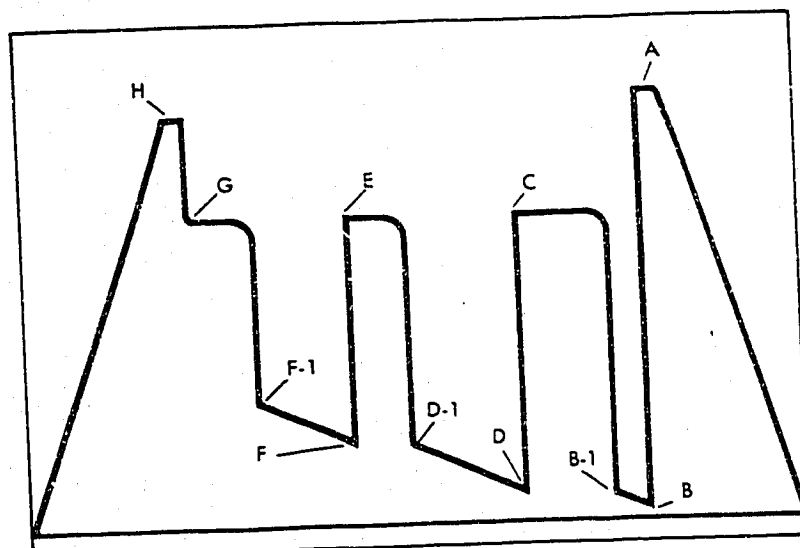
DOO 737-GR1-2112



DOO 737-GR1-1234



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.
D-00737

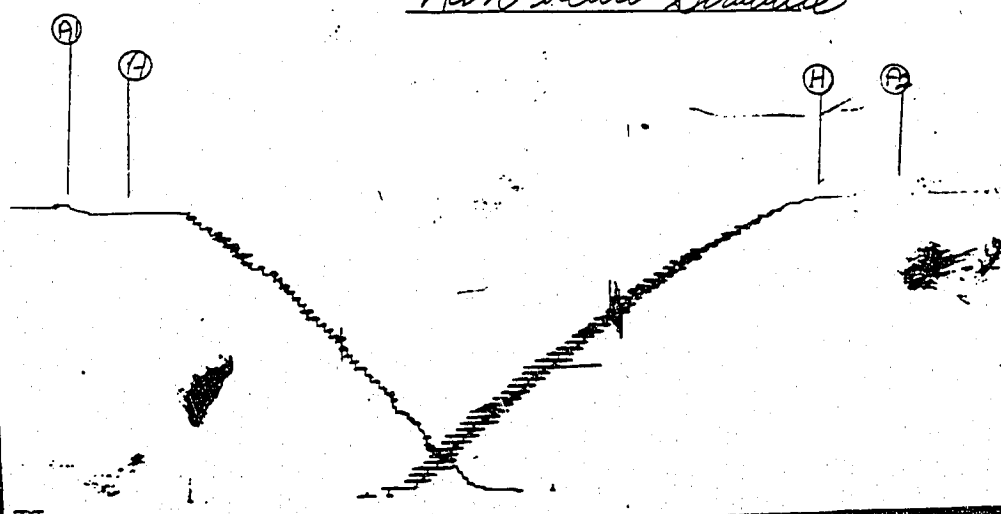
RECORDER NO.
T-374

CAPACITY
7000

REPORTS
REQUESTED
10

D-00737- T-374

Ron Nelson Studdle



TEST DATA						TOOL SEQUENCE					
Formation		Zone Thickness		Ft.		Tool		Length		O.D.	
Interval		To		T.D.		SUB.		.83			
Type of Test		OPEN HOLE, STRADDLE, BYPASS				P.O. SUB.		.65			
Time Started in Hole		0500		Hrs.		D.P. SUB.		.75		5-1/4'	
First Flow		0		Min.		JARS		6.20		4-3/4'	
Second Flow		0		Min.		MFE TOOL		9.10		5"	
Third Flow				Min.		BYPASS TOOL		3.00		5"	
Pulled Loose ft		0815		Hrs.		RECORDER		6.00		4-7/8'	
Wt. Set on Packers		=		Pulled Loose Wt.		=		H. SUB.		.90 4-3/4'	
Description of Blow During Test						SAFETY JOINT					
MISRUN, TOOL FAILURE. TEST CANCELLED						SAFETY SEAL					
						PACKER					
						T.C.					
						PACKER					
						TOTAL					
						STUB.					
						PERF.					
						R. SUB.					
						RECORDER					
						RECORDER					
						SUB.					
						D.C.					
						SUB.					
						T.C. & STUB.					
						TOTAL INTERVAL					
						PACKERS (2)					
						PERF.					
						SUB.					
						D.P.					
						SUB.					
						B.N. & PERF.					
						TOTAL BELOW INTV.					
						TOTAL LENGTH					
						Elevation					
						Bottom Hole Choke Size					
						Fluid Cushion Type					
						MUD AND HOLE DATA					
						Mud Type					
						Filter Cake					
						Time Taken					
						Contractor					
						Drill Pipe Size					
						Drill Collar Size					
						Main Hole Size					
						Rat Hole Size					
District FORT ST. JOHN						Ticket No. D-00737		Date FEB. 27/69		Test No. 1	
Company SHELL CANADA LIMITED						Address P.O. Box 186		J.T.L. No. 1			
Well Name SHELL UNION PAN AM TETCHO J12						EDMONTON, ALBERTA					
Number 60°41'40.26"N121°02'48.36"W						Field TROUT LAKE		Province N.W.T.			
Formation						Co. Rep.					
and Interval						Technician D. BRAUER					
Distribution of Reports						DST#1					
						10 -- EDMONTON					

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

14240-115 AVENUE, EDMONTON, ALBERTA



Date Reported: March 15, 1968

Laboratory Report Number: E68-6246

SHELL CANADA LIMITED

KIND OF SAMPLE: Mud

Well: Shell Union Pan Am. Tetcho J-12

Date Received: March 6, 1968

Location: Lat. $60^{\circ} 41' 40.260''$
Long. $121^{\circ} 02' 48.362''$

Date Sampled: February 28, 1968

Elevation: K.B. 1676'
G.L. 1660.6'

Sampled by: H.R. France

Sampled from: above MFE tool

Well T.D. 5586

Formation: Slave Point

Interval: 4740' - 5200'

Method of Production: D.S.T. #1

Recovery: 220' water cushion; 380' drilling mud.

CHLORIDE CONTENT: 1010 Mg./l.

DAILY DRILLING REPORT

REPORT NO. 2521 DATE Feb. 29. 68

OPERATOR SHELL CANADA LIMITED		LOCATION LSD. SEC. TWP. RGE. W.		WELL NAME Shell Union, Pan-Am, Secho.		No. 5-12		PROVINCE N.W.T.	
CONTRACTOR Nabors Drilling Ltd.		RIG NO. 10	DRILL PIPE NO. SIZE 2 7/8	TOOL JOINT 6" OD	PUMPS MANUFACTURER TYPE STROKE LENGTH 1. National C.250 15 2. National C.250 15 3.		CASING & LINER RECORD	SIZE WT. & GR. DEPTH SET FROM TO PERFORATIONS FROM TO CEMENT USED 550 OTHER	
OPERATOR'S REPRESENTATIVE H. Marshall		CONTRACTOR'S TOOL PUSHER Jim Rowley		TYPE THD.X.H. H90					

TIME DISTRIBUTION—HOURS				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							
MORN	DAY	EVE		STANDS DP	FT.	PIN NO.																											
				SINGLS. DP	FT.	SIZE																											
				D.C. ID	FT.	MFG.																											
				RMR BODY OD	FT.	NO.																											
				STB BODY OD	FT.	NO.																											
				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																											
				DRILLER	Zanner.																												
				Pull out of Plug #1 12:00-12:30 Break Circulator 12:30-12:45 Hight to C Run Plug #2 12:45-1:30 W. O. C. 1:30-8:00 Plug #3 Run 30 sec PORTLAND LAFARGE CEMENT FROM 3057-3067																													

TIME DISTRIBUTION—HOURS				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							
MORN	DAY	EVE		STANDS DP	FT.	RUN NO.																											
				SINGLS. DP	FT.	SIZE																											
				D.C. ID	FT.	MFG.																											
				RMR BODY OD	FT.	NO.																											
				STB BODY OD	FT.	NO.																											
				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																											
				DRILLER	W. O. C. 8:00-9:30 1 1/2 Shift Plug #2 42' Low. Run 25 lbs. 9:30-10:00 Hight Plug into 786 10:00-10:45 Run Plug #3 10:45-11:00 W. O. C. 11-12:00 Plug #3 Run 70 sec PORTLAND LAFARGE W/2% CaCl2 FROM 786-686																												

TIME DISTRIBUTION—HOURS				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							
MORN	DAY	EVE		STANDS DP	FT.	RUN NO.																											
				SINGLS. DP	FT.	SIZE																											
				D.C. ID	FT.	MFG.																											
				RMR BODY OD	FT.	NO.																											
				STB BODY OD	FT.	NO.																											
				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																											
				DRILLER	W. O. C. 12:00-6:45 6 3/4 Shift Plug #3 6:45-7:00 Plug #3 Cemented w/ 70 parts Shift @ 688. Lay down Pipe, dismantle B.O.P., lay down same. Cut Bowl. off 7:00-12:00																												

[illegible]

DAILY DRILLING REPORT

REPORT NO. 1715 DATE FEB 23/68

OPERATOR		LOCATION		SEC.	TWP.	RGE.	W.	WELL NAME	No.	PROVINCE												
SHELL CANADA LIMITED		LSD.						SHELL UNION RANAM T-TECHNOLOGY	5-12	W.L.T.												
CONTRACTOR		RIG NO.	DRILL PIPE STRING NO. SIZE	TOOL JOINT	6" OD	PUMPS		CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER								
VABOR, S.		10	719.35	TYPE THD 1190-XI		MANUFACTURER		TYPE	STROKE LENGTH				550%									
OPERATOR'S REPRESENTATIVE		CONTRACTOR'S TOOL PUSHER				1. Nat.		C 250	15													
J. Henshall		J. Henshall				2. "		"	"													
3. "																						
TIME DISTRIBUTION—HOURS		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			
MORN DAY EVE		51 STANDS DP 4777.05 FT.		RUN NO. 9 10		4 1/4			5475	5500			40	44	800	6"	54		TIME	12.00	2.00	4.00
DRILLING ACTUAL 4 1/2 5 1/4		SNGLS. DP 2 3/4 ID 719.35 FT.		MFG. HW HW															WEIGHT	9.3	9.3	9.2
REAMING		D.C. 6 1/4 OD		TYPE RRG 1 ARG															VISC	58	58	62
CIRCULATING 1 3/4		RMR BODY OD		FT. NO. 3 3															W.L.C.C.	5.2	5.4	
TRIPS 3 2		STB BODY OD		FT. NO. 15 15															FLTR. CK.	3/32	3/32	
DEVIATION SURVEY		SUBS OD		520 FT. SER. NO. 6701 51194															PH	8.0	8.0	
TEST B.O.P. 1/4 1/4		BIT OR C.B.		FT. DEPTH OUT 5500															SD. CONT.			
CUT OFF DRILL LINE		KELLY DOWN 29 FT.		COND. OF BIT 2.21															MUD & CHEMICALS ADDED			
REPAIR RIG		TOTAL 5000 FT.		REAMER CUTTER NO.															TYPE	AMT.	TYPE	AMT.
CORING		WT. OF STRING 130 LBS.		TYPE															Diesels	500		
WIRE LINE LOGGING		DRILLER																	Protecto	500		
OTHER		J. Henshall																	Atlasol	2.5 gal		
FISHING																			Super	500		
COMPLETING (A) PERFORATING		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			
(B) RUNNING TUBING		51 STANDS DP 4777.05 FT.		RUN NO. 10		5 1/4			5500	5524			40	400	800	6"			TIME	12.00	2.00	
(C) SWABBING		SNGLS. DP 30.33		SIZE 8 3/4															WEIGHT	9.3	9.3	
(D) TESTING		D.C. 2 3/4 ID 719.35 FT.		MFG. HW															VISC	73	74	
(E) ACIDIZING		6 1/4 OD		TYPE RRG															W.L.C.C.	5.8		
(F) ADDITIONAL		RMR BODY OD		FT. NO. 3															FLTR. CK.	3/32		
TOTALS 8 1/2 1		STB BODY OD		FT. NO. 15															PH	8.0		
TIME SUMMARY (OFFICE USE ONLY)		SUBS OD		520 FT. SER. NO. 51194															SD. CONT.			
CONTRACTOR'S TIME HRS: 2.4		BIT OR C.B.		FT. DEPTH OUT 5524															MUD & CHEMICALS ADDED			
OPERATOR'S TIME: -		KELLY DOWN 19.40 FT.		COND. OF BIT															TYPE	AMT.	TYPE	AMT.
HRS. W/D.P.		TOTAL 5524 FT.		REAMER CUTTER NO.															CMC	500		
HRS. WO/D.P.		WT. OF STRING 130 LBS.		TYPE																		
HRS. STANDBY		DRILLER																				
WIRE LINE RECORD		Mark J. Reid																				
REEL NO		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			
NO OF LINES SIZE		51 STANDS DP 4777.05 FT.		RUN NO. 10		7 1/4			5524	5556			40	45	750	6"	48	STANDARD	TIME	4.00	6.00	8.00
FEET SLIPPED		SNGLS. DP 50.52 FT.		SIZE 8 3/4															WEIGHT	9.3	9.3	9.3
FEET CUT OFF		D.C. 2 3/4 ID 719.35 FT.		MFG. HW															VISC	58	59	62
PRESENT LENGTH		6 1/4 OD		TYPE ARG															W.L.C.C.			6.2
TON MI. OF TRIPS SINCE LAST CUT CUMULATIVE TON MI. OF TRIPS		RMR BODY OD		FT. NO. 3															FLTR. CK.			16
NO. OF DAYS FROM SPUD 14		STB BODY OD		FT. NO. 15															PH			9
CUMULATIVE ROTATING HRS. 2174		SUBS OD		520 FT. SER. NO. 51194															SD. CONT.			
		BIT OR C.B.		520 FT. DEPTH OUT															MUD & CHEMICALS ADDED			
		KELLY DOWN 24 FT.		COND. OF BIT															TYPE	AMT.	TYPE	AMT.
		TOTAL 5556.22 FT.		REAMER CUTTER NO.															CASISTOL	1000		
		WT. OF STRING 130 LBS.		TYPE															Protecto	500		
		DRILLER																	Atlasol	2.5 gal		
		J. Henshall																	Diesels	500		

[illegible]

DISCHARGE VOLTAGE 2.7-98.9.3

PROVINCE	N.W.T.
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[illegible]

CONTRACTOR'S TOOL PUSHER

										PUMP NO. 1	PUMP NO. 2	METHOD	MUD RECORD
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HRS. DRID	CORE NO.	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTARY R.P.M.	WT. ON BIT 1000#	PUMP PRESS.	LINER		LINER		PUMPS RUN	TIME
								SIZE	S.P.M.	SIZE	S.P.M.		

[illegible]

62	3000	3300.									VISC	38	42	40
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[illegible][illegible][illegible]

DATE		REMARKS	SD. CONT.
12-12-12	12-12-12	Rif Ser.	

[illegible]

		MUD & CHEMICALS ADDED	
		TYPE	AMT.
1/13	1/23	SURVEY	
1/13	1/23		

1 ⁰⁰	3 ⁴⁰	VAULTING	2-11-90 P.P. in WARRICK	BEVEX-8 sacks
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32	4	174	down 231 & 11-1-1112	GEL-3000#
30	5	11	Brake Phys.	

4-8 ^{8:00} DRILLING ^{8:00} RESISTER 2 hrs.

W.H. to pump 9.5 W.H. to tank 9.0	Fresh WATER
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				FORMATION	ROTA- RY	WT.ON PUMP	PUMP	PUMP NO. 1	PUMP NO. 2	METHOD PUMPS	MUD RECORD
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HRS. DRLD.	CORE NO.	FROM	TO	(SHOW CORE RECOVERY)	KT R.P.M.	MT 1000#	PRESS.	LINER SIZE	S.P.M.	LINER SIZE	S.P.M.	RUN	TIME
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[illegible]

					VISC
					WLCC

WATER LEVEL DATA									
STATION	DATE	TIME	DEPTH	DEV	DIRECTION	DEPTH	DEV	DIRECTION	DEPTH
1	1962	10/10	10	10	10	10	10	10	10
2	1962	10/10	10	10	10	10	10	10	10
3	1962	10/10	10	10	10	10	10	10	10
4	1962	10/10	10	10	10	10	10	10	10
5	1962	10/10	10	10	10	10	10	10	10
6	1962	10/10	10	10	10	10	10	10	10
7	1962	10/10	10	10	10	10	10	10	10
8	1962	10/10	10	10	10	10	10	10	10
9	1962	10/10	10	10	10	10	10	10	10
10	1962	10/10	10	10	10	10	10	10	10
11	1962	10/10	10	10	10	10	10	10	10
12	1962	10/10	10	10	10	10	10	10	10
13	1962	10/10	10	10	10	10	10	10	10
14	1962	10/10	10	10	10	10	10	10	10
15	1962	10/10	10	10	10	10	10	10	10
16	1962	10/10	10	10	10	10	10	10	10
17	1962	10/10	10	10	10	10	10	10	10
18	1962	10/10	10	10	10	10	10	10	10
19	1962	10/10	10	10	10	10	10	10	10
20	1962	10/10	10	10	10	10	10	10	10
21	1962	10/10	10	10	10	10	10	10	10
22	1962	10/10	10	10	10	10	10	10	10
23	1962	10/10	10	10	10	10	10	10	10
24	1962	10/10	10	10	10	10	10	10	10
25	1962	10/10	10	10	10	10	10	10	10
26	1962	10/10	10	10	10	10	10	10	10
27	1962	10/10	10	10	10	10	10	10	10
28	1962	10/10	10	10	10	10	10	10	10
29	1962	10/10	10	10	10	10	10	10	10
30	1962	10/10	10	10	10	10	10	10	10
31	1962	10/10	10	10	10	10	10	10	10
32	1962	10/10	10	10	10	10	10	10	10
33	1962	10/10	10	10	10	10	10	10	10
34	1962	10/10	10	10	10	10	10	10	10
35	1962	10/10	10	10	10	10	10	10	10
36	1962	10/10	10	10	10	10	10	10	10
37	1962	10/10	10	10	10	10	10	10	10
38	1962	10/10	10	10	10	10	10	10	10
39	1962	10/10	10	10	10	10	10	10	10
40	1962	10/10	10	10	10	10	10	10	10
41	1962	10/10	10	10	10	10	10	10	10
42	1962	10/10	10	10	10	10	10	10	10
43	1962	10/10	10	10	10	10	10	10	10
44	1962	10/10							

[illegible][illegible]

55	Drilling	8/14	10.15	8.15	1.00
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CIRCL-10 Key Out
C 2500 - 7/11
\$45 - 900 - 1/2

MS ADDED

2 SURVEY @ 5:00 PM 14 900 - 930 - 1/2

Left out of Brake Pad Repair Same 9:30 - 10:30 - 1

Final Temp on T	16.70	-	12.00	1.2
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K&K up	60 Collars Run in w/p	7	1200	-	950	=	250
			230		100		130

Pilling	8 ³⁰	Hole	/	$\frac{7-0}{1} = \frac{7-0}{1} = 1.2$	RUMP NO. 1	RUMP NO. 2	METHOD	MUD RECORD
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	HRS.	CORE	FROM	TO	FORMATION (SHOW CORE RECOVERY)	ROTA- RY DOWN	WT. ON BIT TONS	PUMP PRESS	PUMP NO. 1	PUMP NO. 2	METHOD PUMPS	TIME	11:00	8:00	10:00	
									LINER	S.P.M.	LINER DOWN	S.P.M.				

DRLD.	NO.	FROM	(SHOW CORE RECOVERY)	R.P.M.	FOOTAGE	SIZE	SIZE		WEIGHT	F.V.	S.W.	T.C.
						1 3/8"	1 1/4"	6'		9.0	8.9	8

65	3550	3808	106	4000	1200	61	25	STAIN	B-1	VISC	47	44	4
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[illegible][illegible][illegible]

					REMARKS		SD. CONT
					DRILLING 8 3/4" HOLE 400 TO 415 - 4	DRILLING	

2. SERVICE 415 TO 490 - $\frac{1}{4}$ 8 $\frac{3}{4}$ HOLE

MUD & CHEMICALS ADDED			
TYPE	AMT	TYPE	

				TYPE	AMT.	DATE
REAR D SPINNING CHAIN 6.15 TO 6.50 4				PROTECTOR	500#	SUPKRLCH
1.30 TO 5.10 12						

DRILL 97	14028	6.50	10	8120	1	BENEX	8 BAGS	ATTACHED
DRILL 151	14029	8.10	70	8815	1			

WARR 116477	HOZE	\$1.50 TO 10.00 / 3	DIESEL SPRIS.
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WATER TIGHT HOLES 10-00 TO 10-45-3

DAILY DRILLING REPORT

REPORT NO. 18

DATE Feb. 14/68

OPERATOR SHELL CANADA LIMITED		LOCATION	LSD.	SEC.	TWP.	RGE.	W.	WELL NAME Shell Tetecho.	No. J-12	PROVINCE N.W.T.				
CONTRACTOR NA BOR. Drilling		RIG NO. 10	DRILL PIPE STRING NO. SIZE 1 1/2"	TOOL JOINT 5 3/4" OD	PUMPS			CASING & LINER RECORD	SIZE	WT. & GR.	DEPTH SET FROM TO	PERFORATIONS FROM TO	CEMENT USED	OTHER
OPERATOR'S REPRESENTATIVE H.R. France		CONTRACTOR'S TOOL PUSHER			1. NATIONAL C-250 15"			2. NATIONAL C-250 15"						

TIME DISTRIBUTION—HOURS				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						
MORN	DAY	EVE		STANDS DP	1684.53	RUN NO.	2												TIME	WEIGHT	VISC	W.L.C.C.			
5 3/4	5			1 SNGLS. DP	30.57	SIZE	8 3/4		534	2080	2260									8.9	9.5	7.3	30	32	35
				18 D.C. ID	535.34	FT.																			
				6 1/2 OD		TYPE	OS-35																		
				RMR BODY OD		FT.																			
				STB BODY OD		FT.																			
				1 SUBS OD	96	FT.																			
				BIT OR C.B.		FT.																			
						FT.																			
				KELLY DOWN	10-22	FT.																			
				TOTAL	2260	FT.																			
				WT. OF STRING	82 m.	LBS.																			
				DRILLER																					

TIME SUMMARY (OFFICE USE ONLY)				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	1839	FT.														TIME	WEIGHT	VISC	W.L.C.C.	
				1 SNGLS. DP		FT.			5	2260	2404										8.00	9.2	37	
				18 D.C. ID	535	FT.																		
				6 1/2 OD		TYPE	OS-35 XIC																	
				RMR BODY OD		FT.																		
				STB BODY OD		FT.																		
				1 SUBS OD	95	FT.																		
				BIT OR C.B.		FT.																		
						FT.																		
				KELLY DOWN	30	FT.																		
				TOTAL	2404	FT.																		
				WT. OF STRING	8300	LBS.																		
				DRILLER																				

WIRE LINE RECORD				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					
REEL NO				STANDS DP	2053 1/2	FT.														TIME	WEIGHT	VISC	W.L.C.C.	
NO OF LINES	SIZE			1 SNGLS. DP		FT.				2404	2610										9.2	9.2	40	
FEET SLIPPED				18 D.C. ID	535	FT.																		
FEET CUT OFF				6 1/2 OD		TYPE	OS-35 XIC																	
PRESENT LENGTH				RMR BODY OD		FT.																		
TON MI. OF TRIPS SINCE LAST CUT				STB BODY OD		FT.																		
CUMULATIVE TON MI. OF TRIPS				1 SUBS OD	95	FT.																		
				BIT OR C.B.		FT.																		
						FT.																		
				KELLY DOWN	29.04	FT.																		
				TOTAL	2622 1/2	FT.																		
				WT. OF STRING	8300	LBS.																		
				DRILLER																				

[illegible]

