FINAL ENGINEERING REPORT

for

COLUMBIA ET AL KOTANEELEE YT M-17

D.A 918

Prepared for:

COLUMBIA GAS DEVELOPMENT OF CANADA LTD.

September, 1979

E. E. Gilbertson

D&S PETROLEUM FIELD SERVICES LTD.

COLUMBIA ET AL KOTANEELEE YT M-17

TABLE OF CONTENTS

D&S PETROLEUM CONSULTANTS LTD.

WELL SUMMARY

73F1

Well Name COLUMBIA ET AL KOTANEELEE Location M-17

Elevations: GL _____ Co-ords _____

KB _____

Contractor Nabors Rig No. Nine

Dates: Spud June 1, 1979 RR Febuary 26, 1979 Compn Febuary 26, 1979

Hole Size 311 Depth 216 Logs _____

215.9	1332	DIL-BHCS	1332-216
		CNL-FDC	1332-216

Casing Bowl 10" x 9 5/8" 3000# W.P.

Status Injection well.

Drill Stem Tests _____

Perforations 1312.5 - 1317 Type Through tubing Zone Mattson Sand

1300.5 - 1304.5 Gun 13 jspm

1282.5 - 1286

1256.5 - 1261.5

Tubing 88.9 mm 13.87 kg/m CS Hydril Depth 989.42 Packer 978.2

PSN _____

PSN _____

Treatments _____ Zone _____

Remarks _____

Tool Push Tom Quinn Geologist Ex Log Fld. Supervisor Vern Arndt

D&S PETROLEUM CONSULTANTS LTD.

WELL EQUIPMENT SUMMARY

73F9

Well Name COLUMBIA ET AL KOTANEELEE YT M-17 Date 79 04 16

Wellhead:

Choke

Wing Valve 2" 3000# WKM Gate

Master Valve 2 1/2" 5000# WKM Gate

Stuffing Box

Other

Tubing:

Bonnet 6", 3000# x 1 1/2", 5000# x 2 7/8" EUE

Spool TCM 10", 3000# x 6", 3000#, W/2 - 2", 5000#, S.S.O.

Hanger

Valves WKM 2", 5000#, FE,

Casing:

Spool C-21 10" X 7"

Slips

Valves WKM 2" 3000# Standard Trim

Surface Casing:

Bowl C-22 10" 3000# X 9 5/8" w/2 2" LP

Slips

Valves 1-XH Bull Plug 1-2" LP 2000# Worcester Ball Valve.

Pumping Equipment:

Unit MNF Torque Beam Stroke

Motor MNF Type H.P. H.P. Conn

Bottom Hole Pump Depth

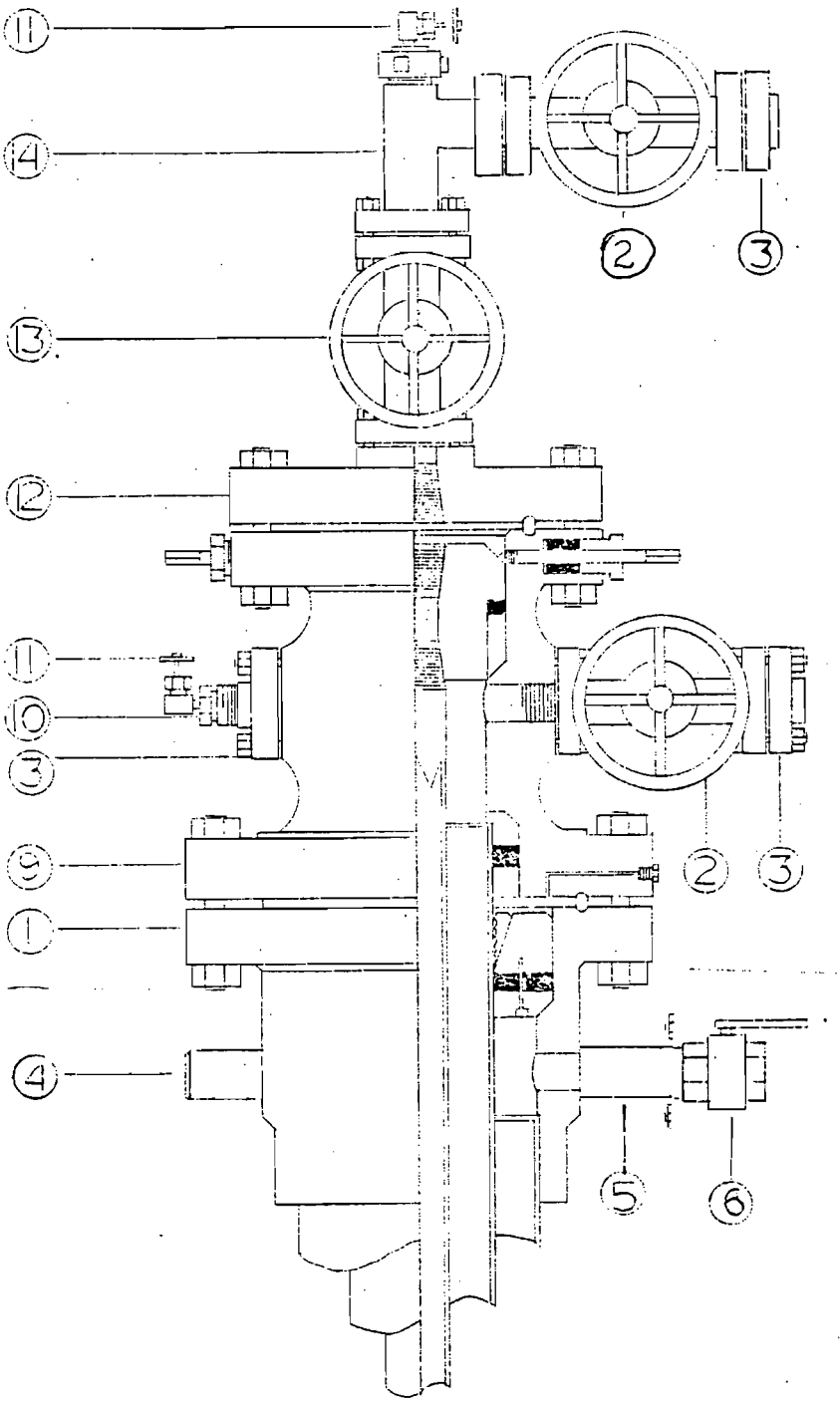
Rods: No. Size Grade Length

Pony Rods

'sh Rods

Remarks

Field Supervisor Vern Arndt



c/o D & S Consulting

X-1643 Kotaneelee Water Injection M-17

PROPERTY OF
WELLHEAD CONTROLS LTD.
CALGARY, ALBERTA

PART NO.	SCALE	PATTERN NO	DATE 79/04/11	SIZE 9-5/8"x2-7/8"	FILE NO.
MATERIAL SPEC. Columbia Gas			DRN. BY RDS CKD. BY APPRVD.	3000#	DWG. NO.

D&S PETROLEUM CONSULTANTS LTD. COLUMBIA ET AL KOTANEELEE
YT M-17

73F 7

DEVIATION SURVEY SUMMARY

DEPTH	DEGREES	DEPTH	DEGREES
31.49 m	3/4	586.0 m	6 1/4
43.0 m	0	606.0 m	6 3/8
52.0 m	1/2	616.0 m	6 1/4
72.5 m	1	636.0 m	6 3/4
80.9 m	3/4	654.0 m	7 1/4
97.0 m	3/4	674.0 m	7 1/4
105.0 m	1/2	693.0 m	7 3/4
115.0 m	7/8	712.0 m	8
127.0 m	1	822.0 m	8
136.0 m	1/2	731.0 m	8
144.0 m	1/2	758.0 m	8
155.0 m	1/2	770.0 m	8 1/4
172.0 m	3/8	779.0 m	8 1/4
193.0 m	1/8	789.0 m	7 3/4
234.0 m	0	798.0 m	7 1/2
260.0 m	3/4	808.0 m	7 1/2
270.0 m	1 1/2	818.0 m	7
280.0 m	1 1/4	827.0 m	7 1/2
290.0 m	1 1/2	846.0 m	6 3/4
300.0 m	1 1/2	859.0 m	6
310.0 m	1 1/2	875.0 m	5 7/8
323.0 m	2	885.0 m	5 7/8
348.0 m	2	932.0 m	5 3/4
377.0 m	2 1/2	941.0 m	5 1/4
403.0 m	2 3/4	952.0 m	5
432.0 m	3 1/4	962.0 m	5 1/4
451.0 m	3 1/2	970.0 m	5 1/4
472.0 m	3 1/2	979.0 m	5 1/2
481.0 m	3 3/4	990.0 m	5
09.0 m	4 3/4	999.0 m	5
519.0 m	4 7/8	1007.0 m	4 1/2
529.0 m	5 1/4	1017.0 m	4 1/4
549.0 m	5 1/4	1028.0 m	4 1/4
568.0 m	6	1036.0 m	4 1/4

D&S PETROLEUM CONSULTANTS LTD.

COLUMBIA ET AL KOTANEELEE
YT M-17

73F 7

DEVIATION SURVEY SUMMARY

DEPTH	DEGREES	DEPTH	DEGREES
1046.0 m	0		
1055.0 m	4 1/2		
1066.0 m	1 1/8		
1075.0 m	3 7/8		
1084.0 m	Misrun		
1093.0 m	4 1/2		
1103.0 m	5		
1120.0 m	5 1/2		
1130.0 m	5 1/4		
1150.0 m	5 1/2		
1160.0 m	5 3/4		
1169.0 m	5 1/2		
1187.0 m	4 1/2		
1205.0 m	5 1/4		
1220.0 m	5 1/4		
1235.0 m	5 1/2		
1255.0 m	5 1/2		
1285.0 m	5 1/2		
1323.0 m	5 1/2		

D&S PETROLEUM CONSULTANTS LTD.

BIT RECORD

WELL NAME: COLUMBIA ET AL KOTANEELEE YT M-17

OPERATOR: COLUMBIA GAS DEVELOPMENT OF CANADA LTD.

CONTRACTOR: NABORS DRILLING

DATE _____ MO./DAY/YEAR

SPUDDED 79 01 01 A.M./P.M.

SET SURFACE _____ A.M./P.M.

UNDER SURFACE 79 01 10 A.M./P.M.

UNDER INTER _____ A.M./P.M.

COMPLETION _____ A.M./P.M.

RELEASE 79 02 27 A.M./P.M.

	OD	ID
DRILL PIPE SIZE	228	76
DRILL COLLARS SIZE	158	73
TOOL JOINTS SIZE	127	4 1/2IF

TYPE

PUMP No. 1 Emsco DB-1000

PUMP No. 2 Nat. H-850

NO	SIZE	MAKE	TYPE	JET SIZE	SERIAL NO.	DEPTH OUT	FEET	HOURS	ACCUM. HOURS	BIT CONDITION			NO OF D.C.	WT. 1000 LBS.	RPM	PUMP PRESS	NO. 1		NO. 2		MUD	
																	SPM	LINER	SPM	LINER	WT	VIS
1A	311.2	Reed	S13GJ	3-11.1	433770	Dropped on bottom - No apparent damage																
2A	311.2	Reed	S13GJ	3-11.1	430150	98.7	79.5	24 1/4	24 1/4	3	2	I		2.5	60-70	2600	62	165		140	1070	45
3A	311.2	Sec.	S44	3-12.7	837287	155.5	57.0	20	44 1/4	3	2	I		2.6	80-110	4000	58	165		140	1138	59
4A	311.2	Sec.	S44	3-14.3	839354	216.0	60.5	14 1/4	58 1/2	2	1	I		2.5	85	3500	58	165		140	1150	60
5	215.9	Sec.	M44N	3-8.7	834682	324.0	108.0	34 1/4	92 3/4	3	2	I	18	6	75	7000	50	140			1080	40
6	215.9	H.W.	J22	3-8.7	33124	616.0	292.0	68 1/4	161	2	3	I	18	5-10	35-75	7500			58	140	1100	40
7	215.9	Sec.	S88F	3-8.7	677492	713	97.0	25	186	2	2	I	18	4-7	60	7500		140	60	140	1060	35
8	215.9	H.W.	XDV	3-8.7	31734	758	45.0	16 1/2	202 1/2	4	2	I	18	4	60	8000	58	140			1050	34
9	215.9	Smith	F3	3-8.7	679NN	848	90.0	80 1/2	283	8	8	4	18	12	60	8500	54	140			1080	35
10	215.9	H.W.	JD8	3-8.7	29027	859	11.0	13	296	6	4	I	18	10	50	7000			50	152	1080	40
11	215.9	Reed	FP62	3-8.7	833475	993	134.0	81 1/4	377 1/4	6	4	I	18	13	50	7500	58	140			1080	45
12	215.9	Reed	FP62	2-7.9 1-8.7	833244	1084	91.0	74 1/4	451 1/2	6	8	2	18	13	50	9000	58	140			1070	45
13	215.9	Smith	F5	3-8.7	539NV	1104	20.0	15	466 1/2	7	5	I	18	13	50	8500	58	140			1080	48
14	215.9	Reed	FP63	2-7.1 1-8.7	410760	1205	101.0	81 1/4	547 3/4	8	5	0	"	11-13	50-55	10000	50	140			1070	80
15	215.9	Sec.	H77SG	3-8.7	738014	1220	15.0	10	557 3/4	6	3	0	18	12	55	8000	52	140			1060	75
16	215.9	Reed.	FP62	3-8.7	136759	1328	108.0	72 3/4	630 1/2	8	6	0	18	12	42	7000	45	140			1200	75
17	215.9	H.W.	HD7	3-8.7	31352	1332	4.0	9	639 1/2	8	2	0	18	12	50	7500	45	140			1350	70
8RR	215.9	H.W.	XDV	3-10.3																		

D&S PETROLEUM CONSULTANTS LTD.

CASING SUMMARY

73F2

Casing Size 244.5 Casing Type Surface

Well Columbia et al Kotaneelee YT M-17 Date 79 01 06

	CSG WT	GR	RGE	THD	T&C	MAKE	JTS RUN	DEPTH LANDED	m RUN IN WELL
Shoe	MAKE: Wotco			TYPE: Float Shoe				215.84 m	.52 m
Shoe JT.	64.75	N-80	3	8RD	LT&C	Jap.	1	215.32 m	12.10 m
Float Collar	MAKE: Baker			TYPE:	Cement Float Collar			203.22 m	.50 m
Casing	64.75	N-80	3	8RD	LT&C	Jap.	17	202.72 m	203.65 m
Casing									
Casing									
Casing									
Casing									

Landing Jt (when used) Length.....	
Overall Length of Casing String.....	216.77 m
Feet up from K.B. (subtract).....	.93 m
Setting Depth: Driller 216 m Tally	215.84 m

Centralizers Three

Scratchers Nil

Weld/Thread Lock (No. Joints) Thread 'lock and weld first two joints.

Cementing Co. Nowsco Cementer: Don Trotter

Cement Volume 9.4 m^3 at 1868.8 kg/m^3

Additives 2% $CaCl_2$ & 34 kg cellophane

Displacement Calculated 7.75 m^3 bbls Measured 7.6 m^3 of water bbls

Top Plug Yes - Wood Bottom Plug Nil Other Nil

Circ. Time Before Cement 1 hour Bbls. Wash 1.59 m^3

Start Mix 2226 AM PM 11 min: Displace 14 min:

Plug Down 2259 AM PM FWP psi BPP 6894 kPa psi

Remarks Held pressure on casing for one minute, then bled back to Nowsco unit, float held O.K. Good returns through out mixing and displacing had approximately .3 m^3 contaminated mud in returns, no mud loss. Cellophane was added to entire slurry. Displacing rate, .795 m^3/min. Final rate, .159 m^3/min.

Fld. Supervisor V. Arndt

D&S PETROLEUM FIELD SERVICES LTD.

TUBULAR TALLY

73F 4

WELL: COLUMBIA ET AL KOTANEELEE YT M-17 DATE: 79 01 06 19

Size 244.5 mm; Weight 64.75 kg/m; Thread 8RD ; Collar LT&C ; Grade N-80 ; Make Jap.

Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH
1	12 10	21		41		61		81	
2	12 03	22		42		62		82	
3	12 10	23		43		63		83	
4	11 90	24		44		64		84	
5	11 97	25		45		65		85	
6	11 96	26		46		66		86	
7	11 81	27		47		67		87	
8	11 99	28		48		68		88	
9	11 92	29		49		69		89	
10	12 08	30		50		70		90	
TOTAL	119 86	TOTAL		TOTAL		TOTAL		TOTAL	
Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH
11	11 99	31		51		71		91	
12	11 92	32		52		72		92	
13	12 14	33		53		73		93	
14	11 96	34		54		74		94	
15	12 02	35		55		75		95	
16	12 05	36		56		76		96	
17	12 02	37		57		77		97	
18	11 79	38		58		78		98	
19	*12 19	39		59		79		99	
20	*12 18	40		60		80		100	
TOTAL	120 26	TOTAL		TOTAL		TOTAL		TOTAL	

TALLY SUMMARY

GROUP NO.	LENGTH	JTS	LENGTH	
1-10	119 86			BROUGHT FORWARD
11-20	120 26	20	240 12	PAGE TOTAL
21-30		20	240 12	TOTAL ON LOCATION
31-40		2	24 37	TOTAL LEFT OUT (Incl. L.J.)
41-50		18	215 75	TOTAL PERMANENTLY IN HOLE
51-60				
61-70				
71-80				
81-90				
91-100				
TOTAL	240 12			

* Left out

** Damaged

(Note transfer of left out joints to where and by whom.)

REMARKS: (Use separate page for each weight, grade or thread.)

2 Joints total 24.37 transfered back to casing rack site by air strip via truck. Tompkins unit No. 694 cut off joint still on location.

Tallied by V. Arndt

D&S PETROLEUM CONSULTANTS LTD.

CASING SUMMARY

73F2

Casing Size 177.8 mm Casing Type Longstring

Well COLUMBIA ET AL KOTANEELEE YT M-17 Date 79 02 18

	CSG WT	GR	RGE	THD	T&C	MAKE	JTS RUN	DEPTH LANDED	M RUN IN WELL
Shoe	MAKE: Davis			TYPE: Guide			1	1332.94	.32
Shoe JT.	47.72	N-80	3	8RD	LT&C	Used	1	1332.94	12.06
Float Collar	MAKE: Davis			TYPE: Float			1	1320.56	.43
Casing	47.72	N-80	3	8RD	LT&C	Used	106	1320.13	1263.61
Casing	47.72	N-80	3	8RD	LT&C	New	5	56.52	59.62
Casing									
Casing									
Casing									

Landing Jt (when used) Length.....	
Overall Length of Casing String	1336.04
meters up from K.B. (subtract).....	3.10
Setting Depth: Driller ____ Tally	1332.94

Centralizers 8, at 1322 m K.B., 1310 m K.B., 1260 m K.B., 1250 m K.B., 1140 m K.B., 1130 m KB.

Scratchers Nil 1010 m K.B., 1000 m K.B.

Weld/Thread Lock (No. Joints) Guide Shoe, Float Collar, 2 Bottom Joints

Cementing Co. Nowsco Cementer: D. Trotter

Cement Volume Lead slurry - 21.23 tonnes Class "G" + 8% gel + 0.5% T-10

Tail in slurry - 12.95 tonnes Class "G" + 15% NaCl + 0.75% T-10

Displacement Calculated 24.8 m^3 Measured 23.9 m^3

Top Plug Rubber Bottom Plug Rubber Other

Circ. Time Before Cement Five Hours Bbls. Wash 1.59 m^3 H_2O

Start Mix 11:16 AM XX PM 47 min. Displace 33 min.

Plug Down 12:48 AM XX PM FWP 10,000 kPa psi BPP 14,000 kPa psi

Remarks

V. Arndt

Fld. Supervisor

D&S PETROLEUM FIELD SERVICES LTD.

TUBULAR TALLY

73F 4

WELL: COLUMBIA ET AL KOTANEELEE YT M-17 DATE: 79 02 18 19

Size 177.8 mm; Weight 47.72 kg/m; Thread 8RD ; Collar LT&C ; Grade N-80 ; Make Used

Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH
1	12 06	21	12 06	41	11 95	61	11 94	81	12 06
2	11 86	22	11 95	42	12 01	62	12 06	82	11 67
3	12 06	23	12 06	43	12 04	63	11 92	83	12 06
4	12 00	24	11 84	44	12 05	64	12 07	84	11 97
5	11 83	25	11 82	45	11 94	65	11 96	85	12 06
6	11 74	26	12 05	46	12 06	66	11 94	86	12 06
7	11 79	27	12 03	47	11 48	67	11 19	87	12 06
8	12 07	28	12 07	48	11 68	68	12 01	88	11 82
9	11 84	29	11 88	49	11 92	69	12 03	89	11 23
10	11 76	30	12 02	50	11 78	70	12 05	90	12 05
TOTAL	119 01	TOTAL	119 78	TOTAL	118 91	TOTAL	119 17	TOTAL	119 04
Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH
11	12 06	31	11 99	51	12 04	71	12 02	91	12 05
12	11 92	32	11 68	52	11 17	72	12 07	92	11 85
13	11 82	33	12 01	53	11 95	73	12 08	93	12 05
14	12 06	34	11 87	54	12 06	74	11 32	94	12 06
15	10 75	35	11 85	55	12 05	75	12 06	95	12 05
16	12 04	36	11 86	56	12 06	76	12 06	96	11 04
17	12 07	37	11 94	57	11 82	77	11 94	97	12 02
18	12 06	38	12 04	58	12 06	78	12 07	98	12 01
19	12 06	39	11 95	59	12 06	79	11 81	99	12 06
20	11 80	40	12 01	60	12 05	80	11 95	100	11 90
TOTAL	118 64	TOTAL	119 20	TOTAL	119 32	TOTAL	119 38	TOTAL	119 09

TALLY SUMMARY

GROUP NO.	LENGTH	JTS	LENGTH	
1-10	119 01			BROUGHT FORWARD
11-20	118 64	100	1191 54	PAGE TOTAL
21-30	119 78			TOTAL ON LOCATION
31-40	119 20			TOTAL LEFT OUT (Incl. L.J.)
41-50	118 91			TOTAL PERMANENTLY IN HOLE
51-60	119 32			
61-70	119 17			
71-80	119 38			
81-90	119 04			
91-100	119 09			
TOTAL	1191 54			

* Left out

** Damaged

(Note transfer of left out joints to where and by whom.)

REMARKS: (Use separate page for each weight, grade or thread.)

Threads not included in measurements.

All joints on this page had been run and retrieved on same previous well.

Tallied by V. Arndt

D&S PETROLEUM FIELD SERVICES LTD.

TUBULAR TALLY

73F 4

WELL: COLUMBIA ET AL KOTANEELEE YT M-17 DATE: 79 02 18 19

Size 177.8 mm; Weight 47.72 kg/m; Thread 8RD ; Collar ; Grade N-80 ; Make Used

Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH
1 u	12 06	21 **	11 56	41		61		81	
2 u	12 06	22 **	11 99	42		62		82	
3 u	11 92	23 **	12 05	43		63		83	
4 u	11 89	24 **	12 05	44		64		84	
5 u	12 07	25 **	12 06	45		65		85	
6 u	12 07	26 **	10 16	46		66		86	
7 u	12 06	27 **	12 05	47		67		87	
8 n	11 86	28 **	11 99	48		68		88	
9 n	11 86	29 **	12 06	49		69		89	
10 n	12 03	30 **	11 93	50		70		90	
TOTAL	119 88	TOTAL	117 90	TOTAL		TOTAL		TOTAL	
Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH	Joint Number	LENGTH
11 n	11 95	31 **	12 07	51		71		91	
12 n	11 92	32 **	12 03	52		72		92	
13 *	12 06	33 **	11 96	53		73		93	
14 *	11 95	34		54		74		94	
15 *	12 06	35		55		75		95	
16 *	11 92	36		56		76		96	
17 *	11 97	37		57		77		97	
18 **	11 81	38		58		78		98	
19 **	12 03	39		59		79		99	
20 **	11 98	40		60		80		100	
TOTAL	119 65	TOTAL	36 06	TOTAL		TOTAL		TOTAL	

TALLY SUMMARY

GROUP NO.	LENGTH	JTS	LENGTH	
1-10	119 88	100	1191 54	BROUGHT FORWARD
11-20	119 65	33	393 49	PAGE TOTAL
21-30	117 90	133	1585 03	TOTAL ON LOCATION
31-40	36 06	21	250 00	TOTAL LEFT OUT (Incl. L.J.)
41-50		112	1324 77	TOTAL PERMANENTLY IN HOLE
51-60				
61-70				
71-80				
31-90				
91-100				
TOTAL	393 49			

* Left out – new

** Damaged

n-new casing run
u-used casing run

(Note transfer of left out joints to where and by whom.)

REMARKS: (Use separate page for each weight, grade or thread.) Threads not included in measurements

Tallied by V. Arndt

D&S PETROLEUM CONSULTANTS LTD.

TUBING SUMMARY

73F3

Well COLUMBIA ET AL KOTANEELEE YT M-17 Date 79 02 24

KB Elevation 419.10 m KB to CSG FLG 7.62 m KB to TBG TOP 6.86 m

Casing OD 177.8 m WT 47.72 kg/m MIN DIA 151.6 mm

Set At 1332.9 m K.B. PBD 1320 m K.B. PERFS 1256.5 - 1261.5 m K.B.

1282.5 - 1286 m K.B. 1300.5 - 1304.5 m K.B.

1312.5 - 1317 m K.B.

Tubing OD 88.9 mm WT 13.87 kg/m Type CS Make Hydril

No. Joints on Location 356 Tally *

No. Joints Run 107 Tally *

PERMANENT STRING FROM BOTTOM UP

No. Joints	Description	Measured Length	KB Depth	Remarks
1	88.9 mm Mule Shoe	0.91 m	988.51 m	Fabricated on Loc.
1	88.9 mm CS Hydril Tubing	8.79 m	979.72 m	
1	Baker Model AD-1 Packer	1.52 m	978.20 m	Set in 10,000 daN tension.
105	88.9 mm CS Hydril Tubing	961.37 m	16.83 m	
1	88.9 mm Double Pin XO Sub	1.15 m	15.68 m	
1	88.9 mm CS Hydril Tubing	8.82 m	6.86 m	

Total String Length	982.56
KB to Tubing Top	6.86
String Depth KB	989.42

Remarks *Of 356 joints brought to location, 235 were rejected because of bad threads or being crimped. Tubing was strapped in hole to set packer.

Field Supervisor G. Wierzba

D&S PETROLEUM FIELD SERVICES LTD.

TUBULAR TALLY

73F 4

WELL: COLUMBIA ET AL KOTANEELEE YT M-17 DATE: 79 02 24 19

Size 88.9 mm; Weight 13.87 kg/m; Thread CS Hydril; Collar ; Grade ; Make

Joint Number	LENGTH		Joint Number	LENGTH		Joint Number	LENGTH		Joint Number	LENGTH		Joint Number	LENGTH	
1 ***	0	91	21	26	93	41			61			81		
2	8	79	22	26	71	42			62			82		
3 **	**1	52	23	27	80	43			63			83		
4	26	95	24	26	77	44			64			84		
5	27	60	25	26	77	45			65			85		
6	26	81	26	27	60	46			66			86		
7	27	48	27	28	06	47			67			87		
8	28	51	28	27	88	48			68			88		
9	28	33	29	27	28	49			69			89		
10	27	69	30	27	41	50			70			90		
TOTAL	204	59	TOTAL	273	86	TOTAL			TOTAL			TOTAL		
Joint Number	LENGTH		Joint Number	LENGTH		Joint Number	LENGTH		Joint Number	LENGTH		Joint Number	LENGTH	
11	26	71	31	26	82	51			71			91		
12	27	22	32	27	75	52			72			92		
13	27	83	33	27	96	53			73			93		
14	27	02	34	27	17	54			74			94		
15	27	65	35	28	40	55			75			95		
16	27	09	36	27	51	56			76			96		
17	27	22	37	27	71	57			77			97		
18	27	84	38	26	93	58			78			98		
19	27	60	39*****	1	15	59			79			99		
20	27	71	40	8	82	60			80			100		
TOTAL	273	89	TOTAL	230	22	TOTAL			TOTAL			TOTAL		

TALLY SUMMARY

GROUP NO.	LENGTH		JTS	LENGTH		
1-10	204	59				BROUGHT FORWARD
11-20	273	89	107	982	56	PAGE TOTAL
21-30	273	86				TOTAL ON LOCATION
31-40	230	22				TOTAL LEFT OUT (Incl. L.J.)
41-50			107	982	56	TOTAL PERMANENTLY IN HOLE
51-60						
61-70						
71-80						
81-90						
91-100						
TOTAL	982	56				

* Left out

** Damaged

***Mule Shoe

****Baker Model AD-1 Packer

*****Double Pin Sub

(Note transfer of left out joints to where and by whom.)

REMARKS: (Use separate page for each weight, grade or thread.)

Of 356 joints brought to location, 235 were rejected because of bad threads or being crimped. This tally is strap in hole to set packer after redressing same. Packer set at 978.20 m KB

Tallied by G. Wierzba

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Sixty-Three

COLUMBIA ET AL KOTANEELEE

Date: Mar. 5/79 Well: YT M-17 Depth: Progress:

Activity & Remarks: Rig racked - sub pumps, drawworks, derrick at H-38 campsite. Small equipment still at M-17. Mud tanks at Nabors camp. 5 new sections of matting in, changed out rams in BOP's. Cleaned up old lease. Loaded out pre-mix tank and light plant for Ft. Nelson. Removed shale shakers from mud tank, loaded out 17 joints, N-80, 32#, 7", 8RD casing for Derrick.

Deviation Surveys: , , , ,

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	11,275
Water	304
Rent	15
Contingency	1,159
Daily Cost	12,753
Prev. Cost	1,568,356
Cum. Cost	1,581,109

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Sixty-Two

COLUMBIA ET AL KOTANEELEE

Date: Mar. 4/79 Well: YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Moved derrick, boiler, water tank and matting to rack site.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
$HHP_B/HHPS$	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	11,275
Water	304
Rent	15
Contingency	1,159
Daily Cost	12,753
Prev. Cost	1,555,603
Cum. Cost	1,568,356

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Sixty-One

COLUMBIA ET AL KOTANEELEE

Date: Mar. 3/79 Well: YT M-17 Depth: Progress:

Activity & Remarks: Man motors and load out same. Laid down A-frame. Move various loads up to H-38 rack site.

Deviation Surveys: , , , ,

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION	
Hours	Operation
	Drilling
	Tripping
	Deviation Survey
	SVC Rig
	Cut Drilling Line
	Reaming
	Condition Mud & Circulating
	Logging
	Repair Rig

COST ANALYSIS	
Items	Cost
General	11,275
Water	456
Rent	15
Contingency	1,174
Daily Cost	12,920
Prev. Cost	1,542,683
Cum. Cost	1,555,603

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Sixty

Date: Mar. 2/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: Progress:

Activity & Remarks: Remove Ex-Log unit, mud tanks, pumps and monkey board. Attempted to remove fluid end from D-1000.

Deviation Surveys: , , , ,

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	11,275
Water	722
Rentals	15
Contingency	1,201
Daily Cost	13,213
Prev. Cost	1,529,470
Cum. Cost	1,542,683

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-Nine

COLUMBIA ET AL KOTANEELEE

Date: Mar. 1/79 Well: YT M-17 Depth: Progress:

Activity & Remarks: Tear out rig.

Laid down derrick and prepare for move. Tear out electric lines and mud tanks. Drain brake drum and hydramatic. Split compound, drain motors, jack motor skids apart. Remove tie down on drawworks and de-ice matting.

Deviation Surveys: , , , ,

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	11,275
Water	608
Rent	88
Contingency	1,197
Daily Cost	13,168
Prev. Cost	1,516,302
Cum. Cost	1,529,470

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-Eight

Date: Feb. 28/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Tear out and de-ice matting.

Tear out rig floor, flare lines, manifold shack and BOP hydraulic lines. Remove tie down bolts on fluid end of D-1000 pump. Tear out de-gasser lines drain 1 valve and seat in H-850 pump. De-ice matting.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	11,275
Water	532
Rent	106
Contingency	1,191
Daily Cost	13,104
Prev. Cost	1,503,198
Cum. Cost	1,516,302

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-Seven

Date: Feb. 27/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress:

Activity & Remarks: Tearing out rig.

Shut well in, injected 2 barrels of diesel down tubing. Shut in pressure after 6 hours, 2585 kPa. RIG RELEASED, 1600 HOURS, 79 02 26.

Deviation Surveys: , , , ,

Properties	MUD Mat'l Used	Cost	Hydraulics		Bits	
Wt.			Pump		No.	
Visc.			Stroke		Ser. No.	
WL			Liner Size		Size	
FC			SPM		Type	
pH			Press.		Jets	
Gels			m^3/MIN.		Out	
Sd.			An. Vel.		In	
Slds.			Jet Vel.		Metres	
Oil			HHPS		Hours	
Cl			HHP_B		Cum. Hrs.	
Ca			$HHP_B/HHPS$		m/Hr.	
PV					Teeth	
YP					Bear.	
					Gauge	
	Daily Cost				Wt.	
	Cum. Cost				RPM	

Mechanics	TIME DISTRIBUTION		COST ANALYSIS	
	Hours	Operation	Items	Cost
No. D.C.		Drilling	General	12,150
Length		Tripping	Water	570
Size		Deviation Survey	Rent	106
Thd.		SVC Rig	Contingency	1,282
OD		Cut Drilling Line		
ID		Reaming		
Wt.		Condition Mud & Circulating		
Eff. Wt.		Logging		
Stabilizers		Repair Rig		
DP Size				
Conn.				
			Daily Cost	14,108
			Prev. Cost	1,489,090
			Cum. Cost	1,503,198

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-Six

Date: Feb. 26/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Flowing well.

Pull out of hole with Schlumberger. Shut well in for 1 1/4, pressure built to 2760 kPa. Open to flow, 78 m^3 in 21 hours. Gassing slightly, H_2S, 100 ppm.

Deviation Surveys: _____, _____, _____, _____, _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	12,150
Water	456
Rent	106
Sclumberger	21,500
Contingency	3,421
Daily Cost	37,633
Prev. Cost	1,451,457
Cum. Cost	1,489,090

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-Five

Date: Feb. 25/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 PBD — 1319 m Progress: -

Activity & Remarks: Pull out of hole with perforating gun.

Circulate annulus to inhibited water topped with 0.8 m^3 diesel.

Land packer in 10,000 daN tension at 980 m K.B. Install wellhead. Pressure test tubing and wellhead to 29,000 kPa for 20 minutes, OK. Ran Gamma Ray CCL from 1319 to 1100 m.

Perforate, 1312.5 - 1317 m, 1300.5 - 1304.5 m, 1282.5 - 1286 m, 1256.5 - 1261.5 m K.B.

Deviation Surveys: BHCS log intervals with 54 mm tubing gun at 13 JSPM. 1 misrun.

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	12,150
Water	608
Rent	106
Powell	6,975
Nowsco	1,500
Weatherford	4,242
Contingency	2,558
Daily Cost	28,139
Prev. Cost	1,423,318
Cum. Cost	1,451,457

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-Four

Date: Feb. 24/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Circulate annulus to inhibited water. Wait on Nowsco, displace hole to water. Shut down for 2 hours for plant start up. While pulling up to setting depth, packer set and sheared. Strap out of hole. Re-dress packer and ran in hole.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost	Hydraulics		Bits	
Wt.			Pump		No.	
Visc.			Stroke		Ser. No.	
WL			Liner Size		Size	
FC			SPM		Type	
pH			Press.		Jets	
Gels			m^3/MIN.		Out	
Sd.			An. Vel.		In	
Slds.			Jet Vel.		Metres	
Oil			HHP_S		Hours	
Cl			HHP_B		Cum. Hrs.	
Ca			HHP_B/HHP_S		m/Hr.	
PV					Teeth	
YP					Bear.	
					Gauge	
	Daily Cost				Wt.	
	Cum. Cost				RPM	

Mechanics	TIME DISTRIBUTION		COST ANALYSIS	
	Hours	Operation	Items	Cost
No. D.C.		Drilling	General	12,150
Length		Tripping	Water	646
Size		Deviation Survey	Rent	106
Thd.		SVC Rig	Contingency	1,290
OD		Cut Drilling Line		
ID		Reaming		
Wt.		Condition Mud & Circulating		
Eff. Wt.		Logging		
Stabilizers		Repair Rig		
DP Size				
Conn.				
			Daily Cost	14,192
			Prev. Cost	1,409,136
			Cum. Cost	1,423,318

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-Three

Date: Feb. 23/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Preparing to circulate hole to water.

Finished sorting and running tubing. Tagged bottom at 1318 m K.B.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	12,150
Water	608
Rentals	106
Contingency	1,286
Daily Cost	14,150
Prev. Cost	1,394,976
Cum. Cost	1,409,126

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-Two

COLUMBIA ET AL KOTANEELEE

Date: Feb. 22/79 Well: YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Running 88.9 mm tubing.

Finish laying down drill pipe. Tear out BOP's, install tubing hanger. Rig up power tongs and run tubing. Run mule shoe, 1 joint tubing, Baker AD-1 packer and tubing.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	14,550
Water	456
Rent	106
Power Tong	4,346
Cement	8,276
Contingency	2,774
Daily Cost	30,507
Prev. Cost	1,364,469
Cum. Cost	1,394,976

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty-One

Date: Feb. 21/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Laying down drill pipe.

Circulate to condition mud. Cemented with 21.3 tonnes 0-1-8 with 0.5% T-10, 12.95 tonnes 0-1-0 with 15% NaCl and 0.7% T-10. Plug down at 1250 hours. Bumped with 14,000 kPa. Tore out BOP's, bled off casing at 2300 hours. Cut casing, re-installed BOP's. Lay down pipe.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		COST ANALYSIS	
Hours	Operation	Items	Cost
	Drilling	General	11,550
	Tripping	Water	646
	Deviation Survey	Rentals	106
3/4	SVC Rig	Casing	57,250
	Cut Drilling Line	Cementing	8,685
	Reaming	Contingency	7,824
2 1/4	Condition Mud & Circulating		
	Logging		
	Repair Rig		
3	Cementing operations		
6 3/4	Wait on cement		
1 3/4	Bleed off and cut casing		
3 1/2	Rig out BOP's		
6	Lay down drill collar & drill pipe		
		Daily Cost	86,061
		Prev. Cost	1,278,408
		Cum. Cost	1,364,469

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Fifty

Date: Feb. 20/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Circulate and prepare to cement casing.

Circulate and work casing while waiting on wireline equipment to check casing. Rig up wireline tools. Run in hole with rubber plug on sinker bar. Tag float collar. Pressure test casing to 9000 kPa for 10 minutes. No bleed off. Rig out wireline equipment.

Deviation Surveys: ____ , ____ , ____ , ____ , ____

Properties	MUD Mat'l Used	Cost
Wt. 1340	Gel 681 kg	
Visc. 95	Caustic 22.7 kg	
WL		
FC		
pH 9.0		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	170
	Cum. Cost	32852

Hydraulics	
Pump	D-1000
Stroke	
Liner Size	
SPM	35
Press.	2000
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
	Hours	Operation
Drilling		
Tripping		
Deviation Survey		
SVC Rig	3/4	
Cut Drilling Line		
Reaming		
Condition Mud & Circulating	10 1/2	
Logging		
Repair Rig		
	5 3/4	Rig up wireline tools
	3	Test casing
	4	Circulate and prepare to cement casing

COST ANALYSIS	
Items	Cost
General	11,550
Water	646
Mud	170
Rentals	106
Contingency	1,247
Daily Cost	13,719
Prev. Cost	1,264,689
Cum. Cost	1,278,408

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Forty-Nine

Date: Feb. 19/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Circulate casing and condition mud.

Run 112 joints 177 mm, 47.62 kg/m, N-80, 8RD casing. Break circulation and circulate at 429 m - 8000 kPa. Run in hole to bottom. Mud coming over casing on last 4 m of last several joints. Circulate and condition mud.

Deviation Surveys: _____, _____, _____, _____, _____

Properties		MUD Mat'l Used		Cost
Wt.	1370	Gel	363 kg	
Visc.	120	Barite	5448	
WL	8.0			
FC	2			
pH	8.0			
Gels	9/35			
Sd.	-			
Slds.	19			
Oil	-			
Cl	500			
Ca	80			
PV	55			
YP	40			
		Daily Cost		1259
		Cum. Cost		32682

Hydraulics		
Pump	H-850	D-1000
Stroke	381	
Liner Size	152	
SPM	40	36
Press.	1250	2200
m³/MIN.		
An. Vel.		
Jet Vel.		
HHPS		
HHPB		
HHPB/HHPS		

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
1/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	
9	Run casing	
3 1/2	Circulate casing while running	
11 1/4	Circulate casing on bottom	

COST ANALYSIS	
Items	Cost
General	11,550
Water	646
Mud	1,259
Rent	103
Nowsco	600
Contingency	1,415
Daily Cost	15,573
Prev. Cost	1,249,116
Cum. Cost	1,264,689

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Forty-Eight

Date: Feb. 18/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Running casing.

Trip and log. Rig with Schlumberger, run CNL-FDC TD - surface casing. Rig out Schlumberger. Trip in hole with bit and BHA. Circulate and condition mud in hole for casing. Pull out of hole, break connections and stand back in derrick. Lay down BHA, change pipe rams and rig to run casing.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost	Hydraulics		Bits	
Wt. 1340	Gel 807 kg		Pump	D-1000	No.	18RR
Visc. 143	Barite 1480		Stroke		Ser. No.	
WL	Unical 22.7		Liner Size		Size	215.9
FC			SPM	46	Type	XDV
pH 10.0			Press.	5000	Jets	
Gels			m³/MIN.	1.04	Out	Clean out trip
Sd.			An. Vel.	41.6	In	
Slds.			Jet Vel.		Metres	
Oil			HHPS		Hours	
Cl			HHP_B		Cum. Hrs.	
Ca			HHP_B/HHP_S		m/Hr.	
PV					Teeth	
YP					Bear.	
					Gauge	
					Wt.	
	Daily Cost	521			RPM	
	Cum. Cost	1423				

Mechanics		TIME DISTRIBUTION		COST ANALYSIS	
		Hours	Operation	Items	Cost
No. D.C.			Drilling	General	11,550
Length		9 1/4	Tripping	Water	570
Size			Deviation Survey	Mud	521
Thd.		1/4	SVC Rig	Rent	358
OD			Cut Drilling Line	Nowsco	600
ID			Reaming	Schlumberger	24,497
Wt.		3 1/2	Condition Mud & Circulating	Contingency	3,809
Eff. Wt.		5	Logging		
Stabilizers			Repair Rig		
		4 1/2	Rig to run casing		
DP Size		1 1/2	Running casing		
Conn.					
D.P., crossover, 12					
drill collars, jars,		3			
drill collars, shock		sub,			
stabilizer, 2 drill		collars,		Daily Cost	41,905
stabilizer, 1 drill		collar,		Prev. Cost	1,207,211
NB reamer, Bit				Cum. Cost	1,249,116

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Forty-Seven

Date: Feb. 17/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1332 m Progress: 0

Activity & Remarks: Trip out to log.

Remove wiper from BOP's. Rig up and log: DILL-BHCS, CNL-FDC. Density tool failed. Rig out Schlumberger. Trip in hole. Broke circulation, lost approximately 13-16 m^3 mud to hole. Circulate hole and build mud volume. Measure out.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties		MUD Mat'l Used		Cost
Wt.	1330	Gel	1906 kg	
Visc.	150	Barite	5039	
WL		Unical	22.7	
FC		Caustic	22.7 kg	
pH				
Gels	9.5			
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		1551
		Cum. Cost		30902

Hydraulics	
Pump	D-1000
Stroke	
Liner Size	
SPM	46
Press.	5000
m^3/MIN.	1.04
An. Vel.	41.6
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	18RR
Ser. No.	
Size	215.9
Type	XDV
Jets	
Out	
In	Clean out trip
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics		TIME DISTRIBUTION		COST ANALYSIS	
		Hours	Operation	Items	Cost
No. D.C.		7 1/4	Drilling	General	11,550
Length			Tripping	Water	380
Size			Deviation Survey	Mud	1,551
Thd.		3/4	SVC Rig	Rent	453
OD		2 3/4	Cut Drilling Line	Nowsco	600
ID			Reaming	Contingency	1,453
Wt.		5 1/2	Condition Mud & Circulating Build		
Eff. Wt.		7 3/4	Logging vol.		
Stabilizers			Repair Rig		
DP Size					
Conn.					
				Daily Cost	15,987
				Prev. Cost	1,191,224
				Cum. Cost	1,207,211

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Forty-Six

COLUMBIA ET AL KOTANEELEE

Date: Feb. 16/79 Well: YT M-17 Depth: 1332 m Progress: -

Activity & Remarks: Pull out of hole to log and fish pipe stripper out of BOP. Rig service and pull out of hole to log. Rig up Schlumberger and run into 378 m. Hole bridged. Rig out loggers. Run in hole with bit. Reamed bridges from 250 m to bottom. Three metres fill on bottom. Circulate and condition. Pump pill and pull out of hole to log.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties		MUD Mat'l Used		Cost
Wt.	1350	Gel	681kg	143
Visc.	198	Barite	799kg	174
WL		Caustic	22kg	27
FC		Unical	56kg	72
pH	9.0			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		416
		Cum. Cost		29351

Hydraulics	
Pump	D-1000
Stroke	
Liner Size	
SPM	46
Press.	5000
m^3/MIN.	1.04
An. Vel.	41.6
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	17	18RR
Ser. No.		31734
Size		
Type		XDV
Jets		3-10.3's
Out		
In		
Metres		
Hours		
Cum. Hrs.		
m/Hr.		
Teeth	8	
Bear.	2	
Gauge	1/8	
Wt.		
RPM		

Mechanics	
No. D.C.	
Length	11 1/4
Size	
Thd.	3/4
OD	
ID	7 3/4
Wt.	2
Eff. Wt.	2 1/4
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
11 1/4	Tripping	
	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
7 3/4	Reaming	
2	Condition Mud & Circulating	
2 1/4	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	12,350
Water	418
Mud	416
Rent	453
Nowsco	600
Contingency	1,423
Daily Cost	15,660
Prev. Cost	1,175,564
Cum. Cost	1,191,224

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

-28 clear and calm

Day No. Forty-Five

COLUMBIA ET AL KOTANEELEE

Date: Feb. 15/79 Well: YT M-17 Depth: 1332 m Progress: 0

Activity & Remarks: Pull out of hole to log.

Ream bridges from 364-421, 820-840, 1067-1085 and 1208-1227 m. Run in to bottom - no fill. Circulate and condition mud. Pump pill. Dummy trip to casing shoe and return to bottom. No tight spots. Circulate hole clean. Trip out to log.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used		Cost
Wt. 1360	1134 kg	Gel	239
Visc. 200	4587 kg	Barite	996
WL	45 kg	Unical	57
FC			
pH 9.0			
Gels			
Sd.			
Slds.			
Oil			
Cl			
Ca			
PV			
YP			
		Daily Cost	1292
		Cum. Cost	28935

Hydraulics	
Pump	D1000
Stroke	457
Liner Size	140
SPM	45
Press.	8000
m^3/MIN.	1.02
An. Vel.	40.7
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	17
Ser. No.	31352215.9
Size	JD7
Type	3 - 8.7's
Jets	-
Out	1328
In	4
Metres	9
Hours	639
Cum. Hrs.	0.44
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	12
RPM	50

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	
D.P., crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB Reamer, Bit	

TIME DISTRIBUTION		
	Hours	Operation
		Drilling
	8 1/4	Tripping
		Deviation Survey
	3/4	SVC Rig
		Cut Drilling Line
	9 1/2	Reaming
	5 1/2	Condition Mud & Circulating
		Logging
		Repair Rig

COST ANALYSIS	
Items	Cost
General	12,350
Water	456
Rent	453
Mud	1,292
Contingency	1,455
Daily Cost	16,006
Prev. Cost	1,159,558
Cum. Cost	1,175,564

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Forty-Four

COLUMBIA ET AL KOTANEELEE

Date: Feb. 14/79 Well: YT M-17 Depth: 1332 m Progress: 2 m

Activity & Remarks: Circulate and condition hole at 303 m.

Drill to 1332 m. Slug pipe, pull out to bottom hole assembly. Run in to 285 m.

Ream and wash sloughing hole from 285 m to 303 m. Strap pipe - no correction made.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties		MUD Mat'l Used		Cost
Wt.	1350	Gel	590kg	124
Visc.	165	Barite	2270kg	493
WL		Caustic	113kg	133
FC		Unical	45kg	57
pH	9.5			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		807
		Cum. Cost		27643

Hydraulics	
Pump	D-1000
Stroke	
Liner Size	
SPM	45
Press.	7500
m^3/MIN.	1.02
An. Vel.	40.7
Jet Vel.	
HHPS	
HHP_B	
$HHP_B/HHPS$	

Bits	
No.	17
Ser. No.	31352
Size	215.9
Type	JD7
Jets	3-8.7's
Out	
In	1328
Metres	4
Hours	9
Cum. Hrs.	639
m/Hr.	0.44
Teeth	
Bear.	
Gauge	
Wt.	12
RPM	50

Mechanics		TIME DISTRIBUTION		COST ANALYSIS	
		Hours	Operation	Items	Cost
No. D.C.		7	Drilling	General	12,350
Length		3	Tripping	Water	456
Size			Deviation Survey	Mud	807
Thd.		1/4	SVC Rig	Rent	453
OD			Cut Drilling Line	Contingency	1,406
ID		13 3/4	Reaming, Circulate & Cond.		
Wt.			Condition Mud & Circulating		
Eff. Wt.			Logging		
Stabilizers			Repair Rig		
DP Size					
Conn.					
D.P., crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB Reamer, Bit				Daily Cost	15,472
				Prev. Cost	1,144,086
				Cum. Cost	1,159,558

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Forty-Three

Date: Feb. 13/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1330 m Progress: 2 m

Activity & Remarks: Drilling.

Drilling Rate - 0.8, Background gas - 1, Cuttings Gas - 0, Flowline Temperature - 30°C, Lithology - 100% sandstone. Service rig, circulate and increase mud weight. Trip for bit. Turn pins on near bit reamer. Trip in hole to 1310 m. Ream 18 m to bottom. Measure out 1.8 metres longer than tally, no adjustment.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties		MUD Mat'l Used		Cost
Wt.	1350	Barite	22119kg	4805
Visc.	68	Gel	318kg	67
WL				
FC				
pH	8.5			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		4872
		Cum. Cost		26836

Hydraulics	
Pump	D-1000
Stroke	
Liner Size	
SPM	45
Press.	7000
m^3/MIN.	1.02
An. Vel.	40.7
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	16	17
Ser. No.		31352
Size		
Type		JD7
Jets		3-8.7's
Out	1328	
In		1328
Metres	108	2
Hours	72 3/4	2
Cum. Hrs.	630	632
m/Hr.		1
Teeth	8	
Bear.	6	
Gauge	2	
Wt.		12M
RPM		50

Reamer cutters 1/8" under

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		2	Drilling
Length		6 3/4	Tripping
Size			Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID		1 1/2	Reaming
Wt.		11 3/4	Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
		1 1/4	Tool up
DP Size			
Conn.			
D.P., crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit			

COST ANALYSIS	
Items	Cost
General	12,350
Water	418
Mud	4,872
Rent	453
Bit	1,100
Contingency	1,919
Daily Cost	21,112
Prev. Cost	1,122,974
Cum. Cost	1,144,086

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10 -30° Clear and Calm

Day No. Forty-Two

COLUMBIA ET AL KOTANEELEE

Date: Feb. 12/79 Well: YT M-17 Depth: 1328 m Progress: 27 m

Activity & Remarks: Circulate and raise mud weight for trip.

Service rig, check crown-o-matic. Drilled ahead, ran survey, drilled ahead. Start out of hole measuring, well flowing, trip back to bottom. Shut-in well. Shut-in casing pressure 1035 kPa. Circulate and raise mud weight. Drilling rate - .77 m/hr., Background gas - 48 units, cuttings gas - 0, Temperature 36.2°. Lithology: - 100% sandstone. Gain 1/2 m^3/h. prior to trip.

Deviation Surveys: 1323 - 5 1/2°, , , ,

Properties		MUD Mat'l Used	Cost
Wt.	1200	1725 kg Gel	363
Visc.	65	5675 kg Barite	1233
WL		23 kg Caustic	27
FC		23 kg Unical	29
pH	9.5		
Gels			
Sd.			
Slds.			
Oil			
Cl			
Ca			
PV			
YP			
		Daily Cost	1652
		Cum. Cost	21964

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	45
Press.	7000
m^3/MIN.	1.02
An. Vel.	40.7
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	16
Ser. No.	136759
Size	215.9
Type	FP 62J
Jets	8.7
Out	1328
In	1220
Metres	108
Hours	72 3/4
Cum. Hrs.	630
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	12000
RPM	42

Mechanics		TIME DISTRIBUTION Hours	Operation
No. D.C.		19	Drilling
Length		2	Tripping
Size		3/4	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID			Reaming
Wt.		1	Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
		1/2	Well shut-in - check pressures
DP Size			
Conn.			
D.P., crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit			

COST ANALYSIS Items	Cost
General	12,350
Water	530
Mud	1,652
Rental	453
Contingency	10,498
Daily Cost	16,485
Prev. Cost	1,106,489
Cum. Cost	1,122,974

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10 -36°, Clear and calm

Day No. Forty-One

COLUMBIA ET AL KOTANEELEE

Date: Feb. 11/79 Well: YT M-17 Depth: 1301 m Progress: 31 m

Activity & Remarks: Drilling.

Service rig, drill. Check annulus pressure - 500 kPa in 5 minutes increasing to 950 kPa in 15 minutes. Survey and drill to 1290 m. Circulate and increase mud weight to 1180. Drill ahead. Drilling rate - 1 m/hr., Background gas - 0, Temperature - 36°, Lith:- 70% sandstone, 30% limestone.

Deviation Surveys: 1285 - 5 1/2°

Properties		MUD Mat'l Used		Cost
Wt.	1220	Gel	3995kg	841
Visc.	75	Barite	13080kg	2842
WL		Unical	45.4kg	57
FC		Caustic	45.4kg	53
pH	9.5			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		3793
		Cum. Cost		20312

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	45
Press.	6700
m³/MIN.	1.02
An. Vel.	40.7
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	16
Ser. No.	136759
Size	215.9
Type	FP62
Jets	3 - 8.7's
Out	-
In	1220
Metres	81
Hours	53 1/4
Cum. Hrs.	611
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	12
RPM	42

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
20	Drilling	
	Tripping	
1/2	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
2	Condition Mud & Circulating	
	Logging	
	Repair Rig	
3/4	Record shut-in pressure	

COST ANALYSIS	
Items	Cost
General	12,350
Water	456
Mud	3,793
Rent	453
Contingency	1,705
Daily Cost	18,757
Prev. Cost	1,087,732
Cum. Cost	1,106,489

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10 -30, light snow and calm Day No. Forty

Date: Feb. 10/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1270 m Progress: 33 m

Activity & Remarks: Drilling ahead.

Drilling, service rig. Drilling at 1256 m - had drilling break. Check flow rate-6 m^3/hr. Shut-in over 850 kPa. Drill to 1259 m, check shut-in - 1100 kPa. Service rig and drill ahead. Drilling Rate - 1.7 m/hr., Background Gas - 140, Cuttings Gas - 0, Flowline Temp. 38°C, 2.5 m^3/hr. average flow. Lithology:- 90% Sandstone, 10% Limestone

Deviation Surveys: 1255 m -5 1/2°

Properties		MUD Mat'l Used		Cost
Wt.	1060	Gel	3223kg	678
Visc.	75	Caustic	68kg	80
WL				
FC				
pH	9.5			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		758
		Cum. Cost		16519

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	50
Press.	7500
m^3/MIN.	1.13
An. Vel.	45.3
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	16
Ser. No.	136759
Size	215.9
Type	FP 62 J
Jets	3-8.7's
Out	
In	1220
Metres	50
Hours	33 1/4
Cum. Hrs.	591
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	12
RPM	42

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		21 3/4	Drilling
Length			Tripping
Size		1/2	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID			Reaming
Wt.			Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
		1	Check shut-ins
DP Size			
Conn.			

COST ANALYSIS	
Items	Cost
General	12,350
Water	532
Mud	758
Rent	453
Contingency	1,409
Daily Cost	15,502
Prev. Cost	1,072,230
Cum. Cost	1,087,732

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Thirty-Nine

Date: Feb. 9/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1237 m Progress: 17 m

Activity & Remarks: Drilling ahead.

Drilling Rate - 1.4 m/hr., Background Gas - 90 units, Cuttings Gas - 0 units, Flowline Temperature - 36°C, Lith: 100% Sandstone. Trip for bit, change reamer cutters, pins and 2 blocks. Pick up new shock sub. Trip in with reamer 7 m to bottom. Drilled ahead, rig service, check crown saver and survey. Gained 18 m^3 fluid on trip out, (1.45 m^3/hr.). Surveys - 1220 m - 5 1/4°, 1235 m - 5 1/2°

Deviation Surveys:

Properties		MUD Mat'l Used		Cost
Wt.	1060	Gel	2451 kg	516
Visc.	70	Caustic	47.8 kg	53
WL				
FC				
pH	10.0			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		569
		Cum. Cost		15761

Hydraulics	
Pump	D-1000
Stroke	
Liner Size	
SPM	50
Press.	7000
m^3/MIN.	1.13
An. Vel.	45.3
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	15	16
Ser. No.		136759
Size		-
Type		FP62J
Jets		3-8.7
Out		-
In		1220
Metres		17
Hours		11 1/2
Cum. Hrs.		569 1/4
m/Hr.		1.5
Teeth	6	-
Bear.	3	-
Gauge	1/8	-
Wt.		12
RPM		44

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	
D.P., crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit	

TIME DISTRIBUTION		
	Hours	Operation
	11 1/2	Drilling
	7	Tripping
	1/2	Deviation Survey
	1/4	SVC Rig
		Cut Drilling Line
	1	Reaming
		Condition Mud & Circulating
		Logging
		Repair Rig
	3 3/4	Tool up

COST ANALYSIS	
Items	Cost
General	12,350
Water	380
Mud	569
Rent	453
Bit	3,200
Reamer Cutters	1,260
Contingency	1,821
Daily Cost	20,039
Prev. Cost	1,052,191
Cum. Cost	1,072,230

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Thirty-Eight

COLUMBIA ET AL KOTANEELEE

Date: Feb. 8/79 Well: YT M-17 Depth: 1220 m Progress: 15 m

Activity & Remarks: Trip for bit.

Drilling Rate - 1.5, Background Gas - 70 units, Flowline Temperature - 37°C, Cuttings Gas - 0 units, Lith: 100% Sandstone. Pull out of hole. Hole tight on 15-17 stands off bottom. Measure out, OK. Turned reamer pins, install float in string service rig, check crown saver and motor shut offs. Trip in hole, ream bottom

Deviation Surveys: 9 m. Drill ahead, circulate for trip, survey and trip out. 10 m^3 pit gain on trip. Survey -1205 m - 5 1/4°

Properties	MUD Mat'l Used		Cost
Wt. 1060	Gel	2642 kg	556
Visc. 75	Caustic	50 kg	59
WL			
FC			
pH 10.0			
Gels			
Sd.			
Slds.			
Oil			
Cl			
Ca			
PV			
YP			
	Daily Cost		615
	Cum. Cost		15192

Hydraulics	
Pump	D-1000
Stroke	
Liner Size	
SPM	52
Press.	8000
m^3/MIN.	1.10
An. Vel.	45.7
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	14
Ser. No.	-
Size	215.9
Type	FP63J
Jets	1-8.7
Out	1205
In	1104
Metres	101
Hours	81 1/4
Cum. Hrs.	547 3/4
m/Hr.	1.2
Teeth	8
Bear.	5
Gauge	3
Wt.	12
RPM	55

Mechanics	TIME DISTRIBUTION		COST ANALYSIS	
	Hours	Operation	Items	Cost
No. D.C.	10	Drilling	General	12,350
Length	8 1/4	Tripping	Water	456
Size	1/4	Deviation Survey	Mud	615
Thd.	1	SVC Rig	Rent	485
OD		Cut Drilling Line	Bit	1,000
ID	2	Reaming	Contingency	1,490
Wt.	1/4	Condition Mud & Circulating		
Eff. Wt.		Logging		
Stabilizers		Repair Rig		
	2 1/4	Tool up and blow kelly		
DP Size				
Conn.				
D.P., crossover, 12				
drill collars, jars,	3			
drill collars, shock	sub,			
stabilizer, 2 drill	collars,		Daily Cost	16,396
stabilizer, 1 drill	collar,		Prev. Cost	1,035,795
NB reamer, bit			Cum. Cost	1,052,191

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Thirty-Seven

Date: Feb. 7/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1205 m Progress: 28 m

Activity & Remarks: Trip out of hole.

Drilling, service rig, and survey. Flow rate at 1202 m, 1.8 m^3/hr. Trip for bit. Drilling Rate - Last 4 m approximately 3 m/hr., Background Gas - 35 units, Cuttings Gas - 0 units, Flowline Temperature - 39°C. Lith: 60% Limestone, 40% Sandstone.

Deviation Surveys: 1187 m - 4 1/2°

Properties		MUD Mat'l Used		Cost
Wt.	1070	Gel	1865 kg	392
Visc.	80	Caustic	48 kg	56
WL		Unical	22 kg	29
FC				
pH	10.0			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		477
		Cum. Cost		14577

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	50
Press.	10000
m^3/MIN.	1.13
An. Vel.	45.2
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	14
Ser. No.	410760
Size	215.9
Type	FP63
Jets	2-7.1, 1-8.7
Out	1205
In	1104
Metres	101
Hours	81 1/4
Cum. Hrs.	547 3/4
m/Hr.	-
Teeth	-
Bear.	-
Gauge	-
Wt.	12
RPM	55

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		20 3/4	Drilling
Length		1 1/4	Tripping
Size		3/4	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID			Reaming
Wt.		1/4	Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
		1/4	Flow rate
DP Size			
Conn.			
D.P., crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit			

COST ANALYSIS	
Items	Cost
General	12,350
Water	418
Mud	477
Rental	485
Contingency	1,373
Daily Cost	15,103
Prev. Cost	1,020,692
Cum. Cost	1,035,795

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Thirty-Six

COLUMBIA ET AL KOTANEELEE

Date: Feb. 6/79 Well: YT M-17 Depth: 1177 m Progress: 26 m

Activity & Remarks: Drilling 215.9 mm hole.

Drilling, surveys and work tight hole after survey at 1160. Water influx 900 liters per/hr. Drill ahead. 1.33 m/hr. Background Gas - 80 units, Cuttings Gas - 0 units, Flowline Temperature- 40.8°C, Lith: 30% Limestone, 70% Sandstone

Deviation Surveys: 1150 m - 5½°, 1160 m - 5 3/4°, 1169 m - 5½°

Properties	MUD Mat'l Used	Cost
Wt. 1070	2544 kg Gel	524
Visc. 90	25 kg Caustic	29
WL	23 kg Unical	29
FC		
pH 9.0		
Gels		
Sd.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	582
	Cum. Cost	14100

Hydraulics	
Pump	01000
Stroke	457
Liner Size	140
SPM	51
Press.	11000
m³/MIN.	1.5
An. Vel.	46.2
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	14
Ser. No.	410760
Size	215.9
Type	FP63J
Jets	(2)7.1 (1)8.7
Out	-
In	1104
Metres	73
Hours	60½
Cum. Hrs.	527
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	11
RPM	5

Mechanics		TIME DISTRIBUTION		COST ANALYSIS	
		Hours	Operation	Items	Cost
No. D.C.		21	Drilling	General	12,350
Length			Tripping	Water	494
Size		1½	Deviation Survey	Mud	582
Thd.		3/4	SVC Rig	Rental	485
OD			Cut Drilling Line	Contingency	1,391
ID			Reaming		
Wt.			Condition Mud & Circulating		
Eff. Wt.			Logging		
Stabilizers			Repair Rig		
DP Size		3/4	Work tight hole		
Conn.					
D.P., crossover, 12 drill collars, jars, 8 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit				Daily Cost	15,302
				Prev. Cost	1,005,390
				Cum. Cost	1,020,692

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Thirty-Five

Date: Feb. 5/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17< Depth: 1151 m Progress: 31 m

Activity & Remarks: Drilling.

Drilling. Run 2 surveys and service rig. Drilling Rate - 1.5 m/hr., Background Gas - 80 units, Cuttings Gas - 0 units, Flowline Temperature - 38.5°C, Lith: 80% Sandstone, 20% Limestone. Gaining 16 barrels of water per hour.

Deviation Surveys: 1120 m - 5 1/2°, 1130 m - 5 1/4° , , ,

Properties	MUD Mat'l Used		Cost
Wt. 1065	Gel	2041 kg	430
Visc. 68	Caustic	23 kg	27
WL			
FC			
pH 9.3			
Gels			
Sd.			
Slds.			
Oil			
Cl			
Ca			
PV			
YP			
	Daily Cost		457
	Cum. Cost		13518

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	54
Press.	11,500
m³/MIN.	1.22
An. Vel.	48.9
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	14
Ser. No.	410760
Size	215.9
Type	FP63J
Jets	-
Out	-
In	1104
Metres	47
Hours	39
Cum. Hrs.	506
m/Hr.	1.5
Teeth	-
Bear.	-
Gauge	-
Wt.	12
RPM	50

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		22 1/4	Drilling
Length			Tripping
Size		1	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID			Reaming
Wt.			Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
DP Size			
Conn.			
D.P., crossover, 12 drill collars, jars,		3	
drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit			

COST ANALYSIS	
Items	Cost
General	12,350
Water	456
Mud	457
Rentals	485
Contingency	1,374
Daily Cost	15,126
Prev. Cost	990,264
Cum. Cost	1,005,390

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Thirty-Four

Date: Feb. 4/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1120 m Progress: 12 m

Activity & Remarks: Drilling 215.9 mm hole.

Work stuck pipe. Came free at 0900 hours. Broke circulation and cleaned to bottom. Drilled ahead, service rig. Pulled 5 stands, repair swivel. Ran in to bottom, repair No. 1 pump pop valve. Pulled 6 stands and repair swivel again. Ran in and drill ahead.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties		MUD Mat'l Used		Cost
Wt.	1080	Gel	1906 kg	401
Visc.	55	Caustic	25 kg	29
WL				
FC				
pH	10.5			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		430
		Cum. Cost		13061

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	50
Press.	10,800
m^3/MIN.	1.13
An. Vel.	45.3
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	14
Ser. No.	410760
Size	215.9
Type	FP63J
Jets	2-7.1, 1-8.7
Out	-
In	1104
Metres	16
Hours	17 1/4
Cum. Hrs.	483 3/4
m/Hr.	-
Teeth	-
Bear.	-
Gauge	-
Wt.	13
RPM	50

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		11	Drilling
Length		1/2	Tripping
Size			Deviation Survey
Thd.		1/2	SVC Rig
OD			Cut Drilling Line
ID			Reaming
Wt.			Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers		10 1/2	Repair Rig
		1/2	Circulate and clean to bottom
DP Size			
Conn.		1	Work stuck pipe
D.P., crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit			

COST ANALYSIS	
Items	Cost
General	12,350
Water	418
Mud	430
Rental	485
Contingency	1,368
Daily Cost	15,051
Prev. Cost	975,213
Cum. Cost	990,264

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Thirty-Three

Date: Feb. 3/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1108 m Progress: 4 m

Activity & Remarks: Working stuck pipe. Bit at 1096 (15' movement). Trip out (measuring - OK). Change bit and reamer cutters. Service rig, run in hole, cut drill line. Ran to 285 m, ream to 340 m. Run in to 1075, ream to 1104 m. Drill to 1108. Background Gas - 60 units, Cuttings Gas - 0 units, Flowline Temperature - 39°C. Lith: 90% Siltstone, 10% Shale.

Deviation Surveys: 1103 m - 5°, , , ,

Properties		MUD Mat'l Used		Cost
Wt.	1080	Gel	726 kg	153
Visc.	48	Caustic	45 kg	59
WL				
FC				
pH	10			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		212
		Cum. Cost		12631

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	12000
m^3/MIN.	1.32
An. Vel.	52.9
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	13	14
Ser. No.	539NV	410760
Size	215.9	215.9
Type	F5	FP63J
Jets	8.7	2-7.1, 1-8.7
Out	1104	-
In	1084	1104
Metres	20	4
Hours	15	6 1/4
Cum. Hrs.	466 1/2	472 3/4
m/Hr.	.75	-
Teeth	7	-
Bear.	5	-
Gauge	1	-
Wt.	13	13
RPM	50	50

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	
D.P., crossover, 12 drill collars, jars, drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit	

TIME DISTRIBUTION		
Hours	Operation	
6 1/4	Drilling	
6 1/4	Tripping	
	Deviation Survey	
1/2	SVC Rig	
3/4	Cut Drilling Line	
1 1/4	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	
9	Work stuck pipe	
3		

COST ANALYSIS	
Items	Cost
General	12,350
Water	456
Mud	212
Rental	485
Bit	3,204
Cutters	1,100
Contingency	1,780
Daily Cost	19,587
Prev. Cost	955,626
Cum. Cost	975,213

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. Thirty-Two

COLUMBIA ET AL KOTANEELEE

Date: Feb. 2/79 Well: YT M-17 Depth: 1104 m Progress: 20 m

Activity & Remarks: Tripping out of hole. Tight hole at 1084 m.

Service rig. Tripped in hole, ream tight hole from 285 - 350 m.

Trip in to 1065 m. Reamed under gauge hole from 1065 - 1084 m. Drilled ahead and surveyed. Trip out. Drilling Rate - 1.6 m/hr., Cuttings Gas - 0 units, Background Gas - 50 units, Flowline Temperature - 35.5°C. Lith: 10% Shale, 90% Siltstone.

Deviation Surveys: 1093 m - 4 1/2°

Properties		MUD Mat'l Used		Cost
Wt.	1090	Gel	1362 kg	287
Visc.	49	Caustic	27 kg	29
WL				
FC				
pH	10.0			
Geis				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		316
		Cum. Cost		12419

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	8500
m^3/MIN.	1.32
An. Vel.	52.9
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	13
Ser. No.	539NV
Size	215.9
Type	F5
Jets	8.7
Out	1104
In	1084
Metres	20
Hours	15
Cum. Hrs.	466 1/2
m/Hr.	-
Teeth	-
Bear.	-
Gauge	-
Wt.	13
RPM	50

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		15	Drilling
Length		4 1/2	Tripping
Size		3/4	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID		3	Reaming
Wt.			Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
DP Size			
Conn.			

COST ANALYSIS	
Items	Cost
General	12,350
Water	608
Mud	316
Rental	485
Bit	3,237
Contingency	1,699
Daily Cost	18,696
Prev. Cost	936,931
Cum. Cost	955,626

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Thirty-One

COLUMBIA ET AL KOTANEELEE

Feb. 1/79 Well: YT M-17 Depth: 1084 m Progress: 27 m

vity & Remarks: Dress near bit reamer.

Drilling, survey, service rig and check BOP's. Trip for bit and strap pipe. Drilling Rate - 65 m/hr., Cuttings Gas - 0 units, Background Gas - 52 units, Flowline Temperature - 38°C. Lith: 40% Shale, 60% Sandstone, trace silt and limestone.

iation Surveys: 1055 m - 4 1/2°, 1066 m - 1 1/8°, 1075 m - 3 7/8°, 1084 m - Misrun

Properties		MUD Mat'l Used		Cost
Wt.	1070	Gel	1135 kg	239
Visc.	44	Caustic	25 kg	29
WL				
FC				
pH	10.0			
Ge'				
S				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		239
		Cum. Cost		12103

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	9000
m³/MIN.	1.32
An. Vel.	52.9
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	12
Ser. No.	833244
Size	215.9
Type	FP62
Jets	2-7.9, 1-8.7
Out	1084
In	993
Metres	91
Hours	74 1/4
Cum. Hrs.	452 3/4
m/Hr.	-
Teeth	6
Bear.	4
Gauge	1/4
Wt.	13
RPM	50

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		18 1/4	Drilling
Length		2 3/4	Tripping
Size		1 1/2	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID			Reaming
Wt.			Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
		3/4	Service reamer
DP Size			
[illegible], crossover, 12 drill collars, jars,		3	
drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit			

COST ANALYSIS	
Items	Cost
Daily General	12,350
Rent	485
Water	456
Mud	268
Contingency	1,355
Daily Cost	14,914
Prev. Cost	922,017
Cum. Cost	936,931

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Thirty

Jan. 31/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 1057 m Progress: 26 m

ity & Remarks: Drilling.

Drilling, run surveys. Service rig. Drilling Rate - 1.6 m/hr., Cuttings Gas - 0 units, Background Gas - 70 units, Flowline Temperature - 39°C. Lith: 100% Siltstone.

ation Surveys: 1036 m - 4 1/4°, 1046 m - 4 1/4°

operties	MUD Mat'l Used		Cost
t. 1070	Gel	1806 kg	
sc. 47	Caustic	25 kg	
L			
C			
H 10			
ele			
d.			
lds.			
il			
i			
a			
V			
P			
	Daily Cost		409
	Cum. Cost		11835

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	9000
m³/MIN.	1.32
An. Vel.	52.9
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	12
Ser. No.	833244
Size	215.9
Type	FP62
Jets	2-7.9, 1-8.7
Out	-
In	993
Metres	64
Hours	56
Cum. Hrs.	434 1/2
m/Hr.	-
Teeth	-
Bear.	-
Gauge	-
Wt.	13
RPM	50

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Co	

TIME DISTRIBUTION		
Hours	Operation	
22 1/4	Drilling	
	Tripping	
1	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	12,350
Rental	485
Water	456
Mud	409
Contingency	10,370
Daily Cost	15,070
Prev. Cost	906,947
Cum. Cost	922,017

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty-Nine

COLUMBIA ET AL KOTANEELEE

: Jan. 30/79 Well: YT M-17 Depth: 1031 m Progress: 22 m

vity & Remarks: Drilling 215.9 mm hole.

Drilling Rate - 1.50 m/hr., Drilling Exponent - 1.93, Cuttings Gas - 0 units, Background Gas - 50, Flowline Temperature - 34°C. Lith: 100% Sandstone.

iation Surveys: 1007 m - 4 1/2°, 1017 m - 4 1/4°, 1028 m - 4 1/4°

Properties	MUD Mat'l Used		Cost
Wt. 1070	Gel	1135 kg	
Visc. 46	Caustic	25 kg	
WL			
FC			
pH 10.0			
Gels			
S			
Slds.			
Oil			
Cl			
Ca			
PV			
YP			
	Daily Cost		273
	Cum. Cost		11426

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	152
SPM	58
Press.	9000
m^3/MIN.	1.23
An. Vel.	51
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	12
Ser. No.	833244
Size	215.9
Type	FP67
Jets	2-7.9, 1-8.7
Out	-
In	993
Metres	38
Hours	33 3/4
Cum. Hrs.	412 1/4
m/Hr.	1.13
Teeth	-
Bear.	-
Gauge	-
Wt.	13
RPM	50

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
21 1/2	Drilling	
	Tripping	
1 3/4	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
General	12,350
Rent	485
Water	326
Mud	273
Contingency	1,343
Daily Cost	14,777
Prev. Cost	892,170
Cum. Cost	906,947

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty-Eight

COLUMBIA ET AL KOTANEELEE

e: Jan. 29/79 Well: YT M-17 Depth: 1009 m Progress: 17 m

ivity & Remarks: Drilling 215.9 mm hole.

Drilling Rate - 1.15, Drilling Exponent - 1.90, Cuttings Gas - 0, Background Gas - 40-60 units, Flowline Temperature - 32.6°C. Lith: 100% Sandstone, fine, hard and tight. Strap out on trip for bit. Strap OK. Hole good. Lay down jars. Pick up replacement jars. 2 m fill on trip. 1 m drilling break at 1003.5 m,

viation Surveys: water flow at 1005, 10.4 m^3/hr., 0.75 m^3/hr. while drilling. 0 kpa, shut in drill pipe pressure. Surveys - 999 m - 5°

Properties	MUD Mat'l Used	Cost
Wt. 1080	Gel 1000 kg	
Visc. 45		
WL		
FC 10.0		
pH		
Gels		
Sd		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	210
	Cum. Cost	11153

Hydraulics	
Pump	H-850
Stroke	381
Liner Size	152
SPM	56
Press.	7000
m^3/MIN.	1.23
An. Vel.	51
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	11	12
Ser. No.	833475	833244
Size	215.9	215.9
Type	FP62	FP62
Jets	3-8.7	1-8.7, 2-7.9
Out	993	Running
In	859	993
Metres	134	16
Hours	81 1/4	12 1/4
Cum. Hrs.	378 1/2	390 3/4
m/Hr.	1.6	1.3
Teeth	6	-
Bear.	4	-
Gauge	I	-
Wt.	13	13
RPM	50	50

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Co	
D. crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit	

TIME DISTRIBUTION		
Hours	Operation	
13 1/4	Drilling	
5 3/4	Tripping	
1/2	Deviation Survey	
3/4	SVC Rig	
1 1/4	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	
3/4	Tool up	
3/4	Circulate to bottom	
1	Flow check	

COST ANALYSIS	
Items	Cost
General	12,350
Rent	485
Water	364
Mud	210
Bit	3,200
Contingency	1,661
Daily Cost	18,270
Prev. Cost	873,900
Cum. Cost	892,170

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty-Seven

COLUMBIA ET AL KOTANEELEE

: Jan. 28/79 Well: M-17 Depth: 992 m Progress: 25 m

ity & Remarks: Drilling 215.9 mm hole.

Drilling Rate - 0.85 m/hr., Drilling Exponent - 2.0, Cuttings Gas - 0 units, Background Gas - 35 units. Lith: 100% Sandstone, trace limestone.

iation Surveys: 970 m - 5 1/4°, 979 m - 5 1/2°, 990 m - 5°

Properties	MUD Mat'l Used	Cost
Wt. 1080	Gel 1360 kg	
Visc. 46	Caustic 75 kg	
WL		
FC		
pH 10.0		
Gels		
Sd		
Sk		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	383
	Cum. Cost	10943

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	7500
m^3/MIN.	1.23
An. Vel.	51
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	11
Ser. No.	833475
Size	215.9
Type	FP62
Jets	3-8.7
Out	-
In	859
Metres	133
Hours	80 1/4
Cum. Hrs.	377 1/2
m/Hr.	1.7
Teeth	-
Bear.	-
Gauge	-
Wt.	13
RPM	50

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	
., crossover, 12	
-11 collars, jars,	
3 drill collars, shock sub,	
stabilizer, 2 drill collars,	
stabilizer, 1 drill collar,	
N.B. reamer, bit	

TIME DISTRIBUTION		
Hours	Operation	
21 3/4	Drilling	
	Tripping	
1 1/2	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Miscellaneous	12,350
Rent	485
Water	364
Mud	383
Contingency	1,358
Daily Cost	14,940
Prev. Cost	858,960
Cum. Cost	873,900

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty-Six

Jan. 27/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 967 m Progress: 37 m

y & Remarks: Drilling 215.9 mm hole.

Drilling Rate - 1.43, Drilling Exponent - 1.84, Cuttings Gas - 0,

Background Gas - 45. Lith: 100% Sandstone, Mattson top at 951.

ion Surveys: 932 m - 5 3/4°, 941 m - 5 1/4°, 952 m - 5° , 962 m - 5 1/4° ,

erties	MUD Mat'l Used	Cost
1080	Gel 808 kg	
44		
	Mud Stand by,	
	1440 Wt.	
10.0	90 Visc.	
s		
s.		
	Daily Cost	172
	Cum. Cost	10560

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	7500
m^3/MIN.	1.23
An. Vel.	51
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHPS	

Bits	
No.	11
Ser. No.	833475
Size	215.9
Type	FP62
Jets	3-8.7
Out	-
In	859
Metres	108
Hours	58 1/2
Cum. Hrs.	355 3/4
m/Hr.	1.8
Teeth	-
Bear.	-
Gauge	-
Wt.	13
RPM	50

Mechanics	TIME DISTRIBUTION		COST ANALYSIS	
	Hours	Operation	Items	Cost
D.C.	21 1/4	Drilling	Stand by	12,350
gth		Tripping	Rent	485
	2	Deviation Survey	Water	402
	3/4	SVC Rig	Mud	172
		Cut Drilling Line	Contingency	1,341
		Reaming		
		Condition Mud & Circulating		
Wt.		Logging		
bilizers		Repair Rig		
Size				
n.				
p. rossover, 12				
il. ollars, jars,				
drill collars, shock sub				
abilizer, 2 drill collars,			Daily Cost	14,750
abilizer, 1 drill collar,			Prev. Cost	844,210
reamer, bit			Cum. Cost	858,960

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty-Five

e: Jan. 26/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 930 m Progress: 36 m

ivity & Remarks: Drilling 215.9 mm hole.

Drilling Rate - 1.8 m/hr., Drilling Exponent - 1.79, Cuttings Gas - 35 units, Background Gas - 100 units. Lith: 100% Siltstone. 0.5 m^3/hr., water flow from 909 - 924 m. Total water influx - 5 m^3.

viation Surveys: , , , ,

Properties	MUD Mat'l Used	Cost
Wt. 1080	Gel 1079 kg	
Visc. 41	Caustic 25 kg	
WL		
FC		
pH 10.0		
Gel*		
Sc		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	257
	Cum. Cost	10388

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	7500
m^3/MIN.	1.23
An. Vel.	51
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	11
Ser. No.	833475
Size	215.9
Type	FP62
Jets	3-8.7
Out	-
In	859
Metres	71
Hours	37 1/4
Cum. Hrs.	334 1/2
m/Hr.	1.9
Teeth	-
Bear.	-
Gauge	-
Wt.	12-13
RPM	45-50

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
C-	
., crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, NB reamer, bit	

TIME DISTRIBUTION		
Hours	Operation	
21 1/4	Drilling	
	Tripping	
2	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Rent	485
Water	478
Mud	257
Contingency	1,337
Daily Cost	14,927
Prev. Cost	829,283
Cum. Cost	844,210

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty-Four

Jan. 25/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 894 m Progress: 35 m

& Remarks: Drilling 215.9 mm hole.

Drilling Rate - 1.9, Drilling Exponent - 1.68, Cuttings Gas - 6 units, Background Gas - 100 units. Lith: 70% Siltstone, 30% Chert. Trip for bit, change out reamer. 7 m fill on bottom. Hole good.

on Surveys: 859 m - 6°, 875 m - 5 7/8°, 885 m - 5 7/8°, ____, ____

erties	MUD Mat'l Used		Cost
1080	Gel	768 kg	
40	Caustic	25 kg	
10.0			
	Daily Cost		191
	Cum. Cost		10131

Hydraulics	
Pump	H-850
Stroke	381
Liner Size	152
SPM	48
Press.	7000
m³/MIN.	1.06
An. Vel.	44
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits		
No.	10	11
Ser. No.	20927	833475
Size	215.9	215.9
Type	JD8	FP62
Jets	3-8.7	3-8.7
Out	859	-
In	848	859
Metres	11	35
Hours	13	16
Cum. Hrs.	-	313 1/4
m/Hr.	.85	2.2
Teeth	6	-
Bear.	4	-
Gauge	I	-
Wt.	10	10
RPM	50	48

Mechanics	TIME DISTRIBUTION	
	Hours	Operation
D.C.	16	Drilling
igth	2 1/4	Tripping
e	1	Deviation Survey
d.	3/4	SVC Rig
		Cut Drilling Line
	3/4	Reaming
		Condition Mud & Circulating
. Wt.		Logging
abilizers		Repair Rig
	3 1/4	Wait for NB reamer.
Size		
nn		
P., crossover, 12		
ill collars, jars,		
drill collars, shock sub,		
abilizer, 2 drill collars,		
abilizer, 1 drill collar,		
reamer, bit.		

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Rent	485
Water	402
Mud	191
Bit	3,202
Cutter	1,580
Contingency	1,820
Daily Cost	20,028
Prev. Cost	809,255
Cum. Cost	829,283

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty-Three

COLUMBIA ET AL KOTANEELEE

Jan. 24/79 Well: YT M-17 Depth: 859 m Progress: 11 m

ty & Remarks: Tripping for bit.

Drilling Rate - 0.77 m/hr., Drilling Exponent - 1.84, Cuttings Gas - 1 unit, Background Gas - 105 units. Lith: 90% Chert, 10% Siltstone. Reamed bridges and fill and last 11 m of under gauge hole to bottom.

tion Surveys: , , , ,

operties	MUD Mat'l Used	Cost
1080	Gel 454 kg	
c. 40	Caustic 46 kg	
	Daily Cost	148
	Cum. Cost	9940

Hydraulics	
Pump	850
Stroke	381
Liner Size	152
SPM	50
Press.	7000
m^3/MIN.	1.1
An. Vel.	45
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	10
Ser. No.	20927
Size	215.9
Type	JD8
Jets	8.7
Out	859
In	848
Metres	11
Hours	13
Cum. Hrs.	297 1/4
m/Hr.	.85
Teeth	-
Bear.	-
Gauge	-
Wt.	10
RPM	50

Mechanics	TIME DISTRIBUTION	
	Hours	Operation
o. D.C.	13	Drilling
ength	3	Tripping
ize	1/4	Deviation Survey
nd.	1/2	SVC Rig
D		Cut Drilling Line
	1 3/4	Reaming
/t.		Condition Mud & Circulating
ff. Wt.		Logging
tabilizers		Repair Rig
	5 1/2	Clean to bottom.
P Size		
on		
.F crossover, 12 drill collars, jars, drill collars, shock sub, tabilizer, 2 drill collars, tabilizer, 1 drill collar, .B., reamer, bit		

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Rent	420
Water	326
Mud	148
Contingency	1,330
Daily Cost	14,624
Prev. Cost	794,631
Cum. Cost	809,255

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty-Two

COLUMBIA ET AL KOTANEELEE

Jan. 23/79 Well: YT M-17 Depth: 848 m Progress: 18 m

ty & Remarks: Reaming to bottom with bit No. 10.

Drilling 1.31 m/hr. Drilling Exponent - 1.75, Cuttings Gas - 6 units, Background Gas - 56. Lith: 70% Siltstone, 30% Chert. Trip for bit. Reamer 1/2" under gauge. Change out cutters. Stabilizers O.K. Ream in from 285 m.

tion Surveys: 846 m - 6 3/4°

perties	MUD Mat'l Used	Cost
1080	Gel 545 kg	
c. 35		
10.5		
ls		
ds.		
	Daily Cost	115
	Cum. Cost	9792

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	54
Press.	8500
m³/MIN.	1.15
An. Vel.	48
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	9	10
Ser. No.	679NN	29027
Size	215.9	215.9
Type	F3	JD8
Jets	3-8.7	3-8.7
Out	848	-
In	758	848
Metres	90	
Hours	80.5	
Cum. Hrs.	284 1/2	
m/Hr.	1.1	
Teeth	8	
Bear.	8	
Gauge	4	
Wt.	12	
RPM	60	

Mechanics	TIME DISTRIBUTION Hours	Operation
o. D.C.	14 3/4	Drilling
ength	4 3/4	Tripping
ize	1/4	Deviation Survey
hd.	3/4	SVC Rig
D		Cut Drilling Line
D	1 1/2	Reaming
Vt.		Condition Mud & Circulating
ff. Wt.		Logging
tabilizers		Repair Rig
	2	Change reamer cutters.
P Size		
Co		
D.. , crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, N.B., reamer, bit		

COST ANALYSIS Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Miscellaneous	
Rent	470
Water	516
Mud	115
Bit	1,100
Reamer	1,500
Contingency	1,613
Daily Cost	17,744
Prev. Cost	776,887
Cum. Cost	794,631

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

0

Day No. Twenty-One

te: Jan. 22/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 830 m Progress: 25 m

tivity & Remarks: Drilling 215.9 mm hole.

Background Gas - 50 units, Cuttings Gas - 4 units, Lith: 50% Chert, 50% Siltstone.

viation Surveys: 808 m - 7 1/2°, 818 m - 7°, 827 m - 7 1/2°, , ,

Properties		MUD Mat'l Used		Cost
Wt.	1090	Gel	682 kg	
Visc.	38	Caustic	50 kg	
WL				
FC				
pH	10.5			
Gels				
S				
S				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		
		Cum. Cost		

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	54
Press.	8500
m³/MIN.	1.15
An. Vel.	48
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	9
Ser. No.	679NN
Size	215.9
Type	F3
Jets	8.7
Out	-
In	758
Metres	72
Hours	65 3/4
Cum. Hrs.	269 1/2
m/Hr.	1.1
Teeth	-
Bear.	-
Gauge	-
Wt.	10-12
RPM	60

Mechanics		TIME DISTRIBUTION		COST ANALYSIS	
		Hours	Operation	Items	Cost
No. D.C.		21 3/4	Drilling	Rig	6,500
Length			Tripping	Camp	1,000
Size		1 1/2	Deviation Survey	Fuel	1,000
Thd.		3/4	SVC Rig	Aircraft	1,600
OD			Cut Drilling Line	Tompkins	1,000
ID			Reaming	Supervision	450
Wt.			Condition Mud & Circulating	Ex-Loggers	800
Eff. Wt.			Logging	Rent	470
Stabilizers			Repair Rig	Water	326
				Mud	185
DP Size				Contingency	1,333
Conn.					
D , crossover, 12					
C 1 collars, jars,					
3 drill collars, shock sub,					
stabilizer, 2 drill collars,				Daily Cost	14,664
stabilizer, 1 drill collar,				Prev. Cost	762,223
N.B., reamer, bit				Cum. Cost	776,887

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twenty

COLUMBIA ET AL KOTANEELEE

Jan. 21/79 Well: YT M-17 Depth: 805 m Progress: 22 m

y & Remarks: Drilling.

Background Gas - 50 units, Cuttings Gas - 4 units, Lith: 70% Chert, 30% Siltstone. Repair washouts on D-1000.

tion Surveys: 789 m - 7 3/4°, 798 m - 7 1/2°

perties	MUD Mat'l Used		Cost
1085	Gel	1590 kg	
ic. 43	Caustic	90 kg	
10.5			
		Daily Cost	454
		Cum. Cost	9492

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	54
Press.	8500
m^3/MIN.	1.15
An. Vel.	48
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	9
Ser. No.	679NN
Size	215.9
Type	F3
Jets	3-8.7
Out	-
In	758
Metres	47
Hours	44
Cum. Hrs.	247 3/4
m/Hr.	1.1
Teeth	-
Bear.	-
Gauge	-
Wt.	10
RPM	60

Mechanics	TIME DISTRIBUTION	
	Hours	Operation
o. D.C.	18	Drilling
ength		Tripping
ize	3/4	Deviation Survey
hd.	3/4	SVC Rig
OD		Cut Drilling Line
D		Reaming
Wt.		Condition Mud & Circulating
Eff. Wt.		Logging
Stabilizers	4 1/2	Repair Rig
P Size		
Conn		
O. crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, N.B., reamer, bit		

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Miscellaneous	470
Water	250
Mud	454
Contingency	1,352
Daily Cost	14,876
Prev. Cost	747,347
Cum. Cost	762,223

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

10 Day No. Nineteen

ite: Jan. 20/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 783 m Progress: 21 m

ctivity & Remarks: Drilling. Fantasque.

Drilling, service rig, check lower pipe rams. Increase weight on bit. Survey.

eviation Surveys: 770 m - 8 1/4°, 779 m - 8 1/4°

Properties		MUD Mat'l Used		Cost
Wt.	1070	Gel	4676 kg	984
Visc.	36	Barite	3360 kg	729
WL				
FC				
pH				
Gels				
S				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		1713
		Cum. Cost		9038

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	60
Press.	8200
m^3/MIN.	1.27
An. Vel.	50.7
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	9
Ser. No.	679NN
Size	215.9
Type	F3
Jets	3-8.7
Out	-
In	758
Metres	25
Hours	26
Cum. Hrs.	229 3/4
m/Hr.	1
Teeth	-
Bear.	-
Gauge	-
Wt.	4-8
RPM	58

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		22 1/4	Drilling
Length			Tripping
Size		1	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID			Reaming
Wt.			Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
DP Size			
Co			
D , crossover, 12 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, 3 drill collars, shock sub, N.B., reamer, bit			

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	450
Supervision	1,000
Ex-Loggers	800
Miscellaneous	470
Water	570
Mud	1,713
Contingency	1,510
Daily Cost	16,613
Prev. Cost	730,734
Cum. Cost	747,347

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Eighteen

Jan. 19/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 762 m Progress: 38 m

ity & Remarks: Drilling.

Repair 4" Cameron valve, shock hose between pumps, and pop valve line on No. 2 pump. Trip for bit. Strap pipe. No fill on trip.

ation Surveys: 731 m - 8°, 758 m - 8°, , , ,

operties	MUD Mat'l Used		Cost
t. 1050	Gel	1130 kg	238
sc. 34	Barite	4540 kg	985
/L	Caustic	23 kg	27
C	Soda	45 kg	23
H			
iels			
d.			
lds.			
)il			
:l			
:a			
V			
/P			
	Daily Cost		1273
	Cum. Cost		7325

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	8000
m^3/MIN.	1.31
An. Vel.	52.2
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	8	9
Ser. No.	31734	679NN
Size	215.9	215.9
Type	XDV	F3
Jets	3-8.7	3-8.7
Out	758	-
In	713	758
Metres	45	4
Hours	16 1/2	3 3/4
Cum. Hrs.	203 3/4	207 1/2
m/Hr.	-	-
Teeth	4	-
Bear.	2	-
Gauge	I	-
Wt.	40	4
RPM	60	60

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
C	
D , crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, N.B., reamer, bit	

TIME DISTRIBUTION		
Hours	Operation	
15 1/4	Drilling	
4 1/4	Tripping	
1/2	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
1/2	Reaming	
	Condition Mud & Circulating	
	Logging	
2 3/4	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	460
Ex-Loggers	800
Miscellaneous	470
Water	456
Mud	1,273
Bit	3,244
Contingency	1,779
Daily Cost	19,572
Prev. Cost	711,162
Cum. Cost	730,734

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Seventeen

Jan. 18/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 724 m Progress: 12 m

ity & Remarks: Drilling 215.9 mm hole.

Survey at 712 m, misrun. Washout union in standpipe. Change to other standpipe. Repair shock hose. Replace gasket on mud pump. Repair pop valve on pump. Work plugged bit. Trip out of hole and strap pipe. Change cutters in reamer and bit and run in hole. Ream 700 - 712 m. Circulate, surveys

ation Surveys: misrun., 712 m - 8°, 722 m - 8°, , ,

operties	MUD Mat'l Used	Cost
t. 1060	Barite 545 kg	118
isc. 33		
/L		
C		
H		
iels		
id		
ilds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	118
	Cum. Cost	6052

Hydraulics	
Pump	H-850
Stroke	381
Liner Size	140
SPM	60
Press.	7500
m^3/MIN.	1.08
An. Vel.	42
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	7	8
Ser. No.	677492	31734
Size	215.9	215.9
Type	S88F	XDV
Jets	3-8.7	3-8.7
Out	713	-
In	616	713
Metres	97	9
Hours	25	3
Cum. Hrs.	-	187 1/4
m/Hr.	3.88	3
Teeth	2	-
Bear.	2	-
Gauge	I	-
Wt.	4	4
RPM	60	60

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	
I , crossover, 12 drill collars, jars, 3 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, 1 drill collar, N.B., reamer, bit	

TIME DISTRIBUTION		
Hours	Operation	
4	Drilling	
6	Tripping	
2 1/4	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
3 1/2	Reaming	
1/4	Condition Mud & Circulating	
	Logging	
4	Repair Rig	
3 1/4	Change reamer cutters and work plugged bit.	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Schlumberger	125
Miscellaneous	470
Water	304
Mud	118
Bit	971
Reamer Cutters	1,580
Contingency	1,591
Daily Cost	17,509
Prev. Cost	693,653
Cum. Cost	711,162

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Sixteen

Jan. 17/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 712 m Progress: 48 m

ity & Remarks: Drilling 215.9 mm hole. Toad Grayling.

Rig down for 9 3/4 hours. Repair mud pump, changed out two pistons.

ition Surveys: 674 m - 7 1/4° 693 m - 7 3/4° , , ,

operties	MUD Mat'l Used	Cost
1080	Barite 1680 kg	364
sc. 36		
	Standby Mud Wt.	
	1440	
	Daily Cost	364
	Cum. Cost	5934

Hydraulics	
Pump	H-850
Stroke	381
Liner Size	140
SPM	60
Press.	10000
m^3/MIN.	1.08
An. Vel.	42
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	7
Ser. No.	677492
Size	215.9
Type	S88F
Jets	3-8.7
Out	-
In	616
Metres	96
Hours	23 1/2
Cum. Hrs.	183 1/4
m/Hr.	-
Teeth	-
Bear.	-
Gauge	-
Wt.	4
RPM	60

Mechanics	TIME DISTRIBUTION Hours	Operation
o. D.C.	13	Drilling
ength		Tripping
ze	1/2	Deviation Survey
id.	3/4	SVC Rig
D		Cut Drilling Line
)		Reaming
Wt.		Condition Mud & Circulating
ff. Wt.		Logging
tabilizers	9 3/4	Repair Rig pump.
P Size		
onn		
). crossover, 12		
rill collars, jars,		
3 drill collars, shock sub,		
stabilizer, 2 drill collars,		
stabilizer, 1 drill collars,		
NB, reamer, bit		

COST ANALYSIS Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Schlumberger	125
Miscellaneous	470
Water	380
Mud	364
Contingency	1,369
Daily Cost	15,058
Prev. Cost	678,595
Cum. Cost	693,653

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

0

Day No. Fifteen

COLUMBIA ET AL KOTANEELEE

te: Jan. 16/79 Well: YT M-17 Depth: 664 m Progress: 55 m

tivity & Remarks: Drilling 215.9 mm hole. Toad Grayling.

Trip for bit, slip and cut line. Service reamer. No fill on trip.

Twin Otter used by D.O.T., Islander - 2 trips to Nelson, overnight in Nelson.

viation Surveys: 616 m - 6 1/4° 636 m - 6 3/4°, 654 m - 7 1/4°

Properties	MUD Mat'l Used	Cost
Wt. 1090	Gel 1360 kg	286
Visc. 41		
WL		
FC		
pH		
Gels		
S		
Si...		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	286
	Cum. Cost	5570

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	58
Press.	7500
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
$HHP_B/HHPS$	

Bits		
No.	6	7
Ser. No.	33124	677492
Size	215.9	215.9
Type	J-22	S88F
Jets	3-8.7	3-8.7
Out	616	-
In	324	616
Metres	292	48
Hours	68 1/4	10 1/2
Cum. Hrs.	159 3/4	170 1/4
m/Hr.	4.28	4.5
Teeth	2	-
Bear.	3	-
Gauge	1	-
Wt.	5-10	7-10
RPM	60	60

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	
[illegible], crossover,	
12 drill collars, jars,	
3 drill collars, shock sub,	
stabilizer, 2 drill collars,	
stabilizer, 1 drill collar,	
NB, reamer, bit	

TIME DISTRIBUTION		
Hours	Operation	
13	Drilling	
7 1/2	Tripping	
1	Deviation Survey	
1/2	SVC Rig	
1	Cut Drilling Line	
	Reaming	
1	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Schlumberger	125
Miscellaneous	470
Water	532
Mud	286
Loader	160
Bit	3,248
Contingency	1,717
Daily Cost	18,888
Prev. Cost	659,707
Cum. Cost	678,595

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Fourteen

Jan. 15/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 609 m Progress: 67 m

ity & Remarks: Drilling 215.9 mm hole. Toad Grayling

ation Surveys: 549 m - 5 1/4°, 568 m - 6°, 586 m - 6 1/4°, 606 m - 6 3/8°,

roperties	MUD Mat'l Used		Cost
Wt. 1100	Gel	1180 kg	248
Visc. 37			
WL			
FC			
pH 8.0			
Gels			
Sd			
Slds.			
Oil			
Cl			
Ca			
PV			
YP			
	Daily Cost		
	Cum. Cost		5284

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	48
Press.	7000
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	6
Ser. No.	33124
Size	215.9
Type	J-22
Jets	3-8.7
Out	-
In	324
Metres	285
Hours	65 3/4
Cum. Hrs.	157 1/4
m/Hr.	4.3
Teeth	-
Bear.	-
Gauge	-
Wt.	5-10
RPM	60

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

., crossover, 9 drill collars, jars, 6 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, drill collar, reamer, bit

TIME DISTRIBUTION		
	Hours	Operation
	20 1/4	Drilling
		Tripping
	2 1/2	Deviation Survey
	3/4	SVC Rig
		Cut Drilling Line
		Reaming
		Condition Mud & Circulating
		Logging
	1/2	Repair Rig pump

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Schlumberger	125
Miscellaneous	470
Water	304
Mud	248
Loader	401
Contingency	1,390
Daily Cost	15,288
Prev. Cost	644,419
Cum. Cost	659,707

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Thirteen

COLUMBIA ET AL KOTANEELEE

e: Jan. 14/79 Well: YT M-17 Depth: 542 m Progress: 85 m

vity & Remarks: Drilling 215.9 mm hole. Toad Grayling

iation Surveys: 472 m - 3 1/2° 481 m - 3 3/4° 509 m - 4 3/4° 519 m - 4 7/8° 529 m - 5 1/4°

roperties	MUD Mat'l Used		Cost
Vt. 1110	Gel	1225 kg	258
/isc. 40			
/L			
FC			
pH 8.0			
Gel			
Sc			
Slds.			
Oil			
Cl			
Ca			
PV			
YP			
		Daily Cost	
		Cum. Cost	5036

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	48
Press.	7000
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	6
Ser. No.	33124
Size	215.9
Type	J-22
Jets	3-8.7
Out	-
In	324
Metres	218
Hours	45 1/2
Cum. Hrs.	137
m/Hr.	4
Teeth	-
Bear.	-
Gauge	-
Wt.	5-10
RPM	60

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
No. D.C.		21	Drilling
Length			Tripping
Size		1 3/4	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
ID			Reaming
Wt.			Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers			Repair Rig
DP Size			
C			

L , crossover, 9 drill collars, jars, 6 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, drill collar, reamer, bit

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Schlumberger	125
Miscellaneous	470
Water	304
Mud	258
Contingency	1,350
Daily Cost	14,857
Prev. Cost	629,562
Cum. Cost	644,419

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Twelve

COLUMBIA ET AL KOTANEELEE

: Jan. 13/79 Well: YT M-17 Depth: 457 m Progress: 120 m

ity & Remarks: Drilling 215.9 mm hole.

iation Surveys: 348 m - 2°, 377 m - 2 1/2°, 403 m - 2 3/4°, 432 m - 3 1/4°, 451 m - 3 1/2°

roperties		MUD Mat'l Used		Cost
Vt.	1080	Gel	1360 kg	286
isc.	39	Barite	4090 kg	860
VL				
:C				
H	8			
Gels				
Sd.				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
			Daily Cost	1146
			Cum. Cost	4778

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	48
Press.	7200
m³/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	6
Ser. No.	33124
Size	215.9
Type	J-22
Jets	3-8.7
Out	5
In	324
Metres	133
Hours	24
Cum. Hrs.	115 1/2
m/Hr.	5.5
Teeth	-
Bear.	-
Gauge	-
Wt.	5-8
RPM	35/65

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
C	
I , crossover, 9 drill collars, jars, 6 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, drill collar, reamer, bit	

TIME DISTRIBUTION		
Hours	Operation	
22	Drilling	
	Tripping	
1 1/4	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Schlumberger	125
Miscellaneous	470
Water	304
Mud	1,146
Truck	910
Bit, Cutters, Blocks	4,830
Contingency	2,013
Daily Cost	22,148
Prev. Cost	607,414
Cum. Cost	629,562

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

0

Day No. Eleven

COLUMBIA ET AL KOTANEELEE

te: Jan. 12/79 Well: YT M-17 Depth: 337 m Progress: 55 m

tivity & Remarks: Drilling.

Trip for bit. Ran stiff bottom hole assembly. Ream several tight spots. No fill on bottom. Strap pipe. No correction.

eviation Surveys: 290 m - 1 1/2° 300 m - 1 1/2° 310 m - 1 1/2° 323 m - 2°

Properties		MUD Mat'l Used		Cost
Wt.	1080	Gel	863 kg	187
Visc.	40	Barite	1180 kg	248
WL		Caustic	23 kg	27
FC				
pH	8.0			
Gels				
S				
Slds.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		462
		Cum. Cost		3632

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	48
Press.	7000
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	5	6
Ser. No.	834682	33124
Size	215.9	215.9
Type	M44NG	J22
Jets	3-8.7	3-8.7
Out	324	-
In	216	324
Metres	108	13
Hours	34 1/4	2
Cum. Hrs.	93 1/2	-
m/Hr.	3.15	6.5
Teeth	3	-
Bear.	2	-
Gauge	1	-
Wt.	6	7.5
RPM	75	65

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

., crossover, 9 drill collars, Jars, 6 drill collars, shock sub, stabilizer, 2 drill collars, stabilizer, drill collar, reamer, bit

TIME DISTRIBUTION		
Hours	Operation	
16 3/4	Drilling	
4	Tripping	
1	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
1 1/2	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Schlumberger	125
Miscellaneous	250
Water	256
Mud	462
Truck	1,211
Contingency	1,465
Daily Cost	16,119
Prev. Cost	591,295
Cum. Cost	607,414

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

10

Day No. Ten

COLUMBIA ET AL KOTANEELEE

Date: Jan. 11/78 Well: YT M-17 Depth: 282 m Progress: 66 m

Activity & Remarks: Drilling 3 m/hr.

Drilled cement and clean to bottom. Formation bled off to 2750 kPa.

Deviation Surveys: 234 m - 0°, 260 m - 3/4°, 270 m - 1 1/2°, 280 m - 1 1/4°,

Properties		MUD Mat'l Used		Cost
Wt.	1060	Unical	1	
Visc.	37	Gel	3	
WL		Bicarb	1	
FC				
pH				
Gels				
?				
Sids.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		165
		Cum. Cost		3170

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	50
Press.	7000
m³/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	5
Ser. No.	834682
Size	215.9
Type	M44NG
Jets	8.7-3
Out	-
In	216
Metres	66
Hours	19 1/2
Cum. Hrs.	-
m/Hr.	3
Teeth	-
Bear.	-
Gauge	-
Wt.	6
RPM	75

Mechanics	
No. D.C.	18
Length	162.77
Size	
Thd.	4" ID
OD	
ID	73
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	5"
Conn.	4" IF

TIME DISTRIBUTION		
Hours	Operation	
16 1/2	Drilling	
	Tripping	
1 1/4	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
1	Repair Rig	shock hose.
4	Drilling cement.	
1/2	Bleed off.	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Schlumberger	125
Water	532
Rent	250
Casing Bowl	1,030
Mud	165
Contingency	1,445
Daily Cost	15,901
Prev. Cost	575,394
Cum. Cost	591,295

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Nine

COLUMBIA ET AL KOTANEELEE

Jan. 10/79 Well: YT M-17 Depth: 216 m Progress: -

y & Remarks: Drilling out shoe.

Nipple up. Pressure test blind rams, casing and manifold to 20,000 kPa. Picked up and ran collars. Pressure test pipe rams to 20,000 kPa and hydril to 10,000 kPa. Drill cement from 209 - 212 m.

ion Surveys: _____ , _____ , _____ , _____ , _____

erties	MUD Mat'l Used	Cost
1140	Bicarb 1 sac	35
. 60		
s		
s.		
	Daily Cost	35
	Cum. Cost	3005

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	140
SPM	65
Press.	3000
m³/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	5
Ser. No.	834682
Size	215.9
Type	M44NG
Jets	3-8.7
Out	-
In	216
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
D.C.	18
gth	
	4" IF
	158.7
Wt.	
bilizers	
	5"
Size	4 1/2 IF
in.	

TIME DISTRIBUTION	
Hours	Operation
	Drilling
4 3/4	Tripping
	Deviation Survey
3/4	SVC Rig
	Cut Drilling Line
	Reaming
	Condition Mud & Circulating
	Logging
1 1/2	Repair Rig pumps.
1 1/2	Drilling cement and float.
12 3/4	Nipple up.
2 3/4	Pressure test.

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Miscellaneous	200
Schlumberger	125
Water	304
Cement	3,380
Nowsco	2,000
Bit	800
Mud	35
Contingency	1,919
Daily Cost	21,113
Prev. Cost	554,281
Cum. Cost	575,394

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Eight

Jan. 9/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 216 m Progress: -

ty & Remarks: Tighten bonnet bolts on 5" rams.

Nipple up BOP's, choke and kill lines. Hook up hydraulic lines.

Laid flare line from stack to manifold.

tion Surveys: , , , ,

perties	MUD Mat'l Used	Cost
c.		
ls		
ls.		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHPS	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	TIME DISTRIBUTION	
	Hours	Operation
. D.C.		Drilling
ngth		Tripping
ze		Deviation Survey
d.	3/4	SVC Rig
)		Cut Drilling Line
		Reaming
t.		Condition Mud & Circulating
f. Wt.		Logging
abilizers		Repair Rig
	23 1/4	Nipple up and change rams.
Size		
nn		

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Miscellaneous	200
Schlumberger	125
Rent	23
Water	342
Move out motor from E-37	8,690
Contingency	2,173
Daily Cost	23,903
Prev. Cost	530,378
Cum. Cost	554,281

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Seven

Jan. 8/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 216 m Progress: -

& Remarks: Nipple up BOP's.

Check top of cement outside surface casing. Rig up 2" line. Re-cement outside top 5 m of surface casing with 1.13 cu. m CWG cement. Cut off conductor. Wait on cement. Cut off surface casing and weld on bowl. Test weld to 20,400 kpa. Nipple up BOP's.

n Surveys: , , , ,

rtles	MUD Mat'l Used	Cost
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m³/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
D.C.	
th	
Wt.	
ilizers	
Size	
n.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	
23 1/4	Recement casing. Wait on cement and nipple up.	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Miscellaneous	200
Sclumberger	125
Rent	23
Water	456
Casing Accessories & Cement Additives	1,516
Nowsco	3,843
Contingency	1,851
Daily Cost	20,364
Prev. Cost	510,014
Cum. Cost	530,378

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

F 10

Day No. Six

COLUMBIA ET AL KOTANEELEE

Date: Jan. 7/79 Well: YT M-17 Depth: 216 m Progress: 1 m

Activity & Remarks: Wait on cement. Made wiper trip and strapped pipe. No fill. Drill to 216 m. Circulate and trip out to run casing. Rig and run 244 mm casing, as attached. Circulate casing and reduce mud viscosity to 60. Cement casing, as attached. Wait on cement. Ran 18 joints of 244 mm, 64.75 kg/m, N-80 casing ST&C. Total run - 216.77 m. Landed at 215.84 m. Ran Wotco Float Shoe and Baker Float Collar, 1 joint up, and 2 centralizers on shoe joint and 1 on next joint.

Deviation Surveys: Over -

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
[illegible]		
Sids.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Con-	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Daily Cost	
Prev. Cost	
Cum. Cost	

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Six (Continued)

Jan. 7/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 216 m Progress: 1 m

ity & Remarks: Thread lock and tack weld first two joints. Ran 1.59 m^3 water ahead. ment 9.4 m^3 OWG with 2% CaCl and 34 kg cellophane. Average slurry weight - 1870 kg/m^3. lculated displacement, 7.75 m^3. Measured displacement, 7.6 m^3. Plug down at 22:59 rs, January 6, 1979, with 6894 kPa. Bled off. Float held OK. Good returns through x and displacement. Had approximately 0.3 m^3 contaminated mud return at end of dis-

ation Surveys: placement. , , Survey - 215 m - 0° , ,

operties	MUD Mat'l Used		Cost
t. 1150	Gel	227 kg	47
sc. 60	Sand	5 sacs	25
L			
C			
H 8.0			
elr			
d.			
lds.			
il			
I			
a			
V			
P			
		Daily Cost	72
		Cum. Cost	2970

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	165
SPM	58
Press.	3500
m^3/MIN.	1.81
An. Vel.	51.8
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	4A
Ser. No.	839354
Size	311.2
Type	S-44
Jets	3-14.3
Out	216
In	155.5
Metres	60.5
Hours	14 1/4
Cum. Hrs.	59 1/4
m/Hr.	-
Teeth	2
Bear.	1
Gauge	I
Wt.	3000
RPM	85-100

Mechanics	
lo. D.C.	
ength	
ize	
hd.	
DD	
D	
Vt.	
Eff. Wt.	
Stabilizers	
DP Size	
Co	

TIME DISTRIBUTION		
	Hours	Operation
	1/2	Drilling
	2 3/4	Tripping
		Deviation Survey
	3/4	SVC Rig
		Cut Drilling Line
		Reaming
	1	Condition Mud & Circulating
		Logging
		Repair Rig
	2	Lay down collar
	8 1/4	Run casing, circulate &
		cement
	8 3/4	Wait on cement.

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Miscellaneous	200
Schlum. Standby	3,250
Rent	43
Water	456
Mud	72
Casing	14,153
Contingency	3,052
Daily Cost	33,576
Prev. Cost	476,438
Cum. Cost	510,014

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Five

Jan. 6/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 215 m Progress: 71.8 m

y & Remarks: Make wiper trip and strap pipe.

Strap pipe at 155 m on trip. No fill on trip.

ion Surveys: 144 m - 1/2°, 155 m - 1/2°, 172 m - 3/8°, 193 m - 1/8°,

perties	MUD Mat'l Used		Cost
1150	Gel	1952 kg	410
104	Soda	45 kg	23
8			
s			
s.			
	Daily Cost		433
	Cum. Cost		2898

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	165
SPM	58
Press.	3500
m^3/MIN.	1.81
An. Vel.	51.8
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	3A	4A
Ser. No.	837287	839354
Size	311.2	311.2
Type	S-44	S-44
Jets	2-12.7, 14.3	3-14.3
Out	155.5	215
In	98.7	155.5
Metres	56.8	59.5
Hours	20 3/4	13 3/4
Cum. Hrs.	-	58 3/4
m/Hr.	-	-
Teeth	3	-
Bear.	2	-
Gauge	1	-
Wt.	2200	2200
RPM	110	110

Mechanics
D.C.
ıgth
.e
ı.
)
. Wt.
abilizers
' Size
ınn

TIME DISTRIBUTION	
Hours	Operation
17 1/2	Drilling
3 1/2	Tripping
1 1/4	Deviation Survey
3/4	SVC Rig
	Cut Drilling Line
	Reaming
1	Condition Mud & Circulating
	Logging
	Repair Rig

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Miscellaneous	200
Rent	43
Water	600
Mud	433
Bit	1,600
Contingencies	1,523
Daily Cost	16,757
Prev. Cost	459,681
Cum. Cost	476,438

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Four

COLUMBIA ET AL KOTANEELEE

Jan. 5/79 Well: YT M-17 Depth: 143.2 m Progress: 44.5 m

ity & Remarks: Drilling 311 mm hole.

Trip for bit. Repair crown saver. One metre fill on trip.

tion Surveys: 97 m - 3/4°, 105 m - 1/2°, 115 m - 7/8°, 127 m - 1°, 136 m - 1/2°

perties	MUD Mat'l Used		Cost
1138	Gel	454 kg	95
59	Caustic	45 kg	53
8.0			
	Daily Cost		148
	Cum. Cost		2465

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	165
SPM	56
Press.	4000
m³/MIN.	1.75
An. Vel.	50
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits		
No.	2A	3A
Ser. No.	430150	837287
Size	311	311
Type	S13GJ	S44
Jets	2-12.7, 1-19	2-12.6,1-14.3
Out	98.7	-
In	0	98.7
Metres	98.7	44.5
Hours	24 1/4	17
Cum. Hrs.	24 1/4	41 1/4
m/Hr.	4.1	2.6
Teeth	3	
Bear.	2	
Gauge	1	
Wt.	2400	2220
RPM	65	110

Mechanics	TIME DISTRIBUTION	
	Hours	Operation
D.C.	17	Drilling
gth	2 3/4	Tripping
e	1	Deviation Survey
l.	3/4	SVC Rig
		Cut Drilling Line
		Reaming
	1/2	Condition Mud & Circulating fill
Wt.		Logging
bilizers	2	Repair Rig
Size		
n.		

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Ex-Loggers	800
Bit	1,600
Rental	43
Water	608
Mud	148
Miscellaneous	200
Contingency	1,450
Daily Cost	16,399
Prev. Cost	443,238
Cum. Cost	459,637

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

3F 10

Day No. Three

Date: Jan. 4/79 Well: COLUMBIA ET AL KOTANEELEE M-17 Depth: 98.7 m Progress: 51.9 m

Activity & Remarks: Trip for bit.

Circulate and condition mud. Minor lost circulation at 50 metres. Mixed sawdust.

Deviation Surveys: 43 m - 0°, 52 m - 1/2°, 72.5 m - 1°, 80.9 m - 3/4°,

Properties		MUD Mat'l Used		Cost
Wt.	1120	Gel	5351 kg	
Visc.	58	Sawdust	10 sax	
WL				
FC				
pH	8.0			
Gels				
[illegible]				
[illegible]s.				
Oil				
Cl				
Ca				
PV				
YP				
		Daily Cost		1177
		Cum. Cost		2317

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	165
SPM	62
Press.	2550
m^3/MIN.	1.94
An. Vel.	55
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	2A
Ser. No.	430150
Size	311
Type	S13GJ
Jets	2-12.7, 1-19
Out	98.7
In	0
Metres	98.7
Hours	24 1/4
Cum. Hrs.	24 1/4
m/Hr.	4.1
Teeth	
Bear.	
Gauge	
Wt.	2400
RPM	65

Mechanics	
No. D.C.	3-220 mm
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	
t, NBR, Stab., 220 DC, Stab., 1-220 DC, Crossover	

TIME DISTRIBUTION		
Hours	Operation	
16 1/4	Drilling	
	Tripping	
1 1/4	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
	Reaming	
5 1/4	Condition Mud & Circulating	
	Logging	
1/2	Repair Rig	Weight Indicator

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Water	570
Mud	1,177
Ex-Loggers	800
Rent	130
Miscellaneous	200
Contingencies	1,443
Daily Cost	15,870
Prev. Cost	427,368
Cum. Cost	443,238

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. Two

COLUMBIA ET AL KOTANEELEE

: Jan. 3/79 Well: YT M-17 Depth: 46.8 m Progress: 10.4 m

vity & Remarks: Drilling

Repair mud pumps. Plugged bit - tripped to clear obstruction at bit nozzles. Change nozzles. Run in hole, clean out 11 metres fill on bottom.

iation Surveys: , , , ,

roperties		MUD Mat'l Used		Cost
/t.	1080	Gel	545 kg	114
isc.	42			
/L				
C				
H	10			
ele				
c				
lds.				
Oil				
I				
a				
V				
/P				
		Daily Cost		114
		Cum. Cost		1140

Hydraulics	
Pump	D-1000
Stroke	457
Liner Size	165
SPM	60
Press.	2250
m^3/MIN.	1.96
An. Vel.	53.2
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	2A
Ser. No.	430150
Size	311
Type	S13GJ
Jets	2-12.7, 1-19
Out	-
In	0
Metres	46.8
Hours	8
Cum. Hrs.	8
m/Hr.	5.85
Teeth	
Bear.	
Gauge	
Wt.	2225 DaN
RPM	63

Mechanics	
No. D.C.	3-220 mm
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Co	
B.	NBR, Stab.,
1-220 DC, Stab., 1-220	
DC, Crossover	

TIME DISTRIBUTION		
Hours	Operation	
2	Drilling	
2	Tripping	
	Deviation Survey	
3/4	SVC Rig	
	Cut Drilling Line	
3 3/4	Reaming	
1/2	Condition Mud & Circulating	
	Logging	
15	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Aircraft	1,600
Tompkins	1,000
Supervision	450
Water	342
Mud	114
Ex-Loggers	600
Miscellaneous	200
Nowsco	400
Rental	2,924
10% Contingency	1,613
Daily Cost	17,743
Prev. Cost	409,625
Cum. Cost	427,368

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. One

: Jan. 2/79 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: 36.4 m Progress: 36.4 m

vity & Remarks: Repair mud pumps.

Make up bottom hole assembly, mix mud. SPUDDED, 18:00 hours, 79 01 01.

ation Surveys: 31.49 m - 3/4°

roperties	MUD Mat'l Used		Cost
/t. 1070	Gel	1800 kg	
isc. 35	Caustic	20 kg	
/L	Soda Ash	20 kg	
C			
H 10			
:els			
d			
lds.			
)il			
:l			
:a			
V			
P			
	Daily Cost		479
	Cum. Cost		1026

Hydraulics		
Pump	D-1000	850
Stroke	457	381
Liner Size	165	140
SPM	40	65
Press.	7500	5500
m³/MIN.	1308	1248
An. Vel.	36	34
Jet Vel.		
HHP$_S$		
HHP$_B$		
HHP$_B$/HHP$_S$		

Bits	
No.	2
Ser. No.	430150
Size	311.2
Type	S13GJ
Jets	3-11's
Out	-
In	0
Metres	36.4
Hours	6
Cum. Hrs.	6
m/Hr.	6
Teeth	-
Bear.	-
Gauge	-
Wt.	4-5
RPM	55

Mechanics		TIME DISTRIBUTION	
		Hours	Operation
lo. D.C.	2-220 mm DC	6	Drilling
.ength	1 NBR		Tripping
Size	2	1/4	Deviation Survey
Thd.		3/4	SVC Rig
OD			Cut Drilling Line
D			Reaming
Wt.		6	Condition Mud & Circulating
Eff. Wt.			Logging
Stabilizers		6 1/2	Repair Rig
		3/4	Make up BHA
DP Size		2	Thaw mud lines
Co		1 3/4	Make connection
B.	NBR, Stab. 1-220 DC,		
Stab.,	1-220 DC, Crossover		

COST ANALYSIS	
Items	Cost
Rig	6,500
Camp	1,000
Fuel	1,000
Water	380
Aircraft	1,600
Supervision	450
Tompkins	1,000
Mud	479
Bit	1,597
Miscellaneous	200
Ex-Loggers	600
Contingency	1,480
Daily Cost	16,286
Prev. Cost	393,339
Cum. Cost	409,625

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

3F 10

Day No. _____

COLUMBIA ET AL KOTANEELEE

Date: Jan. 1/79 Well: YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Make up new bit. Change liner gaskets and No. 1 pumps. Thaw kelly hose. Mix mud. Make up bottom hole assembly. While making up bottom hole assembly, broke pin, dropped assembly down conductor hole. Tie onto fish with slings and pull out. Break off bit and make up new bit.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used		Cost
Wt.	Gel	44	
Visc.	Caustic	2	
WL	Soda	1	
FC			
pH			
Gels			
.s.			
Oil			
Cl			
Ca			
PV			
YP			
	Daily Cost		546
	Cum. Cost		

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	1A
Ser. No.	433770
Size	3-11.2
Type	S13J
Jets	3-11.1
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5,000
Camp	1,000
Fuel	1,000
Water	228
Aircraft	1,600
Supervision	400
Tompkins	1,000
Mud	547
Miscellaneous	200
Bit	1,663
Contingencies	1,263
Daily Cost	13,901
Prev. Cost	379,438
Cum. Cost	393,339

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

0 Day No. _____

COLUMBIA ET AL KOTANEELEE

te: Dec. 31/78 Well: YT M-17 Depth: _____ Progress: _____

tivity & Remarks: Thaw out kelly hose. Change head gasket in No. 1 pump. Finish hooking up No. 2 motor. Start and adjust motor. Repair clutch leaks. Replace air spear to No. 2 motor clutch. Change head on No. 3 motor. Mix mud.

viation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost	Hydraulics		Bits	
Wt.			Pump		No.	
Visc.			Stroke		Ser. No.	
WL			Liner Size		Size	
FC			SPM		Type	
pH			Press.		Jets	
Gels			m^3/MIN.		Out	
Sd			An. Vel.		In	
Slds.			Jet Vel.		Metres	
Oil			HHPS		Hours	
Cl			HHP_B		Cum. Hrs.	
Ca			HHP_B/HHP_S		m/Hr.	
PV					Teeth	
YP					Bear.	
					Gauge	
					Wt.	
	Daily Cost				RPM	
	Cum. Cost					

Mechanics		TIME DISTRIBUTION		COST ANALYSIS	
		Hours	Operation	Items	Cost
No. D.C.			Drilling	Rig	5,000
Length			Tripping	Camp	1,000
Size			Deviation Survey	Fuel	1,000
Thd.			SVC Rig	Water	228
OD			Cut Drilling Line	Aircraft	1,600
ID			Reaming	Supervision	400
Wt.			Condition Mud & Circulating	Tompkins	1,000
Eff. Wt.			Logging	Miscellaneous	200
Stabilizers			Repair Rig	Contingencies	1,042
DP Size					
Cond.					
				Daily Cost	11,470
				Prev. Cost	367,968
				Cum. Cost	379,438

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

10 Day No. _____

COLUMBIA ET AL KOTANEELEE

ate: Dec. 30/78 Well: YT M-17 Depth: _____ Progress: _____

ctivity & Remarks: Install No. 2 motor.

Set No. 2 motor on the floor. Flywheel in Fort Nelson, will fly out this a.m.

eviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost	Hydraulics		Bits	
Wt.			Pump		No.	
Visc.			Stroke		Ser. No.	
WL			Liner Size		Size	
FC			SPM		Type	
pH			Press.		Jets	
G			m^3/MIN.		Out	
S			An. Vel.		In	
Slds.			Jet Vel.		Metres	
Oil			HHP_S		Hours	
Cl			HHP_B		Cum. Hrs.	
Ca			HHP_B/HHP_S		m/Hr.	
PV					Teeth	
YP					Bear.	
					Gauge	
					Wt.	
	Daily Cost				RPM	
	Cum. Cost					

Mechanics	TIME DISTRIBUTION		COST ANALYSIS	
	Hours	Operation	Items	Cost
No. D.C.		Drilling	Rig	5,000
Length		Tripping	Camp	1,000
Size		Deviation Survey	Fuel	1,000
Thd.		SVC Rig	Water	228
OD		Cut Drilling Line	Aircraft	1,600
ID		Reaming	Supervision	400
Wt.		Condition Mud & Circulating	Tompkins	1,000
Eff. Wt.		Logging	Miscellaneous	200
Stabilizers		Repair Rig	Contingencies	1,042
DP Size				
			Daily Cost	11,470
			Prev. Cost	356,498
			Cum. Cost	367,968

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

3F 10

Day No. _____

COLUMBIA ET AL KOTANEELEE

Date: Dec. 29/78 Well: YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Repair rig motor.

-32°C, Calm, Clear

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost	Hydraulics		Bits	
Wt.			Pump		No.	
Visc.			Stroke		Ser. No.	
WL			Liner Size		Size	
FC			SPM		Type	
pH			Press.		Jets	
Gels			m^3/MIN.		Out	
			An. Vel.		In	
Sids.			Jet Vel.		Metres	
Oil			HHP_S		Hours	
Cl			HHP_B		Cum. Hrs.	
Ca			HHP_B/HHP_S		m/Hr.	
PV					Teeth	
YP					Bear.	
					Gauge	
					Wt.	
	Daily Cost				RPM	
	Cum. Cost					

Mechanics	TIME DISTRIBUTION		COST ANALYSIS	
	Hours	Operation	Items	Cost
No. D.C.		Drilling	Rig	5,000
Length		Tripping	Camp	1,000
Size		Deviation Survey	Fuel	1,000
Thd.		SVC Rig	Water	278
OD		Cut Drilling Line	Aircraft	1,600
ID		Reaming	Supervision	400
Wt.		Condition Mud & Circulating	Tompkins	1,000
Eff. Wt.		Logging	Miscellaneous	200
Stabilizers		Repair Rig	Contingencies	1,042
DP Size				
Cond.				
			Daily Cost	11,470
			Prev. Cost	345,028
			Cum. Cost	356,498

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

: 10 Day No. _____

COLUMBIA ET AL KOTANEELEE

)ate: Dec. 28/78 Well: YT M-17 Depth: _____ Progress: _____

\ctivity & Remarks: Repair rig motor.

Crew arrived on location at 2:00 p.m., December 27, 1978.

)eviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Ge		
Sa		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Cc	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig Standby	30,000
Camp	6,000
Fuel	6,000
Water	1,368
Aircraft	9,600
Supervision	800
Tompkins	6,000
Miscellaneous	200
Contingencies	5,996
Daily Cost	65,964
Prev. Cost	279,064
Cum. Cost	345,028

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

10 Day No. _____

COLUMBIA ET AL KOTANEELEE

Date: Dec. 22/78 Well: YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Repair rig motor.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sd		
Sh		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	228
Aircraft	1000
Supervision	400
Tompkins	1000
Ex-Loggers	800
Miscellaneous	200
Contingencies	1123
Daily Cost	12,351
Prev. Cost	279,862
Cum. Cost	292,213

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. _____

COLUMBIA ET AL KOTANEELEE

e: Dec. 21/78 Well: YT M-17 Depth: _____ Progress: _____

vity & Remarks: Wait on repairs for rig motor.

Tear down motor No. 2. Otter unable to fly in repair parts due to weather.

iation Surveys: _____, _____, _____, _____, _____

roperties	MUD Mat'l Used	Cost
Vt.		
/isc.		
VL		
FC		
pH		
Gels		
Sd		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Cr	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	228
Aircraft	1000
Supervision	400
Tompkins	1000
Ex-Loggers	800
Miscellaneous	200
Contingencies	1123
Daily Cost	12,351
Prev. Cost	267,511
Cum. Cost	279,862

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

F 10

Day No. _____

COLUMBIA ET AL KOTANEELEE

Date: Dec. 20/78 Well: YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Tear out motor No. 2.

Rig to spud, No. 2 motor down. Start tear out of motor at 4:00 p.m.

Crankshaft expected to arrive at 2:00 p.m. Crane operator expected at noon.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	380
Aircraft	1600
Supervision	400
Tompkins	1000
Nowsco	800
Ex-Loggers	800
Miscellaneous	200
Contingencies	1218
Daily Cost	13,398
Prev. Cost	254,113
Cum. Cost	267,511

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

3F 10

Day No. _____

COLUMBIA ET AL KOTANEELEE

Date: Dec. 19/78 Well: YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Rig to spud.

Finish rigging up prefabs. Rigged up drill floor. Picked up kelly.

Cleaning out mud tanks. Transfer 300 sacs of cement into tanks.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Solids.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	228
Aircraft	1600
Supervision	400
Tompkins	1000
Lease Const.	1266
Service Crews	800
Rig Move	48527
Miscellaneous	200
Contingencies	6102
Daily Cost	67,123
Prev. Cost	186,990
Cum. Cost	254,113

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

) Day No. _____

COLUMBIA ET AL KOTANEELEE

e: Dec. 18/78 Well: YT M-17 Depth: _____ Progress: _____

ivity & Remarks: Rigging up.

Raised derrick, start setting up prefabs. Estimated spud - December 19, 1978.

viation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Sc		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Co	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	228
Aircraft	1600
Supervision	400
Tompkins	1000
Miscellaneous	200
Contingencies	1042
Daily Cost	11,470
Prev. Cost	175,520
Cum. Cost	186,990

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

Day No. _____

COLUMBIA ET AL KOTANEELEE

: Dec. 17/78 Well: YT M-17 Depth: _____ Progress: _____

/ity & Remarks: Rig up.

Start up one boiler. Got motors started at 0300 hours. Plan to raise derrick at daylight. Changing to 6 1/2" liners in D-1000 pump. Move some drill pipe, collars and casing to location.

ation Surveys: _____, _____, _____, _____, _____

operties	MUD Mat'l Used	Cost
't.		
sc.		
'L		
C		
H		
els		
d.		
lds.		
il		
l		
a		
V		
P		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHPB	
HHPB/HHPS	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
lo. D.C.	
ength	
ize	
hd.	
)D	
D	
Vt.	
ff. Wt.	
Stabilizers	
DP Size	
Cor	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	228
Aircraft	1600
Supervision	400
Tompkins	1000
Miscellaneous	200
Contingencies	1042
Daily Cost	11,470
Prev. Cost	164,050
Cum. Cost	175,520

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

F 10

Day No. _____

Date: Dec. 16/78 Well: COLUMBIA ET AL KOTANEELEE YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Spotted boiler and choke manifold building. Hook up lines and general rig up.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
[illegible]s		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHPS	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
nn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	228
Aircraft	1600
Supervision	400
Tompkins	1000
Miscellaneous	200
Contingencies	1042
Daily Cost	11,470
Prev. Cost	152,580
Cum. Cost	164,050

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

: 10 Day No. _____

COLUMBIA ET AL KOTANEELEE

Date: Dec. 15/78 Well: YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Rigging up rotary tools.

Rig up A-Frame and pin monkey board. Spot cat walk and some pipe racks. Mud tanks spotted. Water tank, fuel tank, tool house, change house and light plant spotted. Hook up fuel, water, steam, accumulator lines, and some power lines. Changed out boiler. Camp light plant installed.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost	Hydraulics		Bits	
Wt.			Pump		No.	
Visc.			Stroke		Ser. No.	
WL			Liner Size		Size	
FC			SPM		Type	
pH			Press.		Jets	
Gels			m^3/MIN.		Out	
			An. Vel.		In	
Slds.			Jet Vel.		Metres	
Oil			HHPS		Hours	
Cl			HHP_B		Cum. Hrs.	
Ca			$HHP_B/HHPS$		m/Hr.	
PV					Teeth	
YP					Bear.	
					Gauge	
					Wt.	
	Daily Cost				RPM	
	Cum. Cost					

Mechanics		TIME DISTRIBUTION		COST ANALYSIS	
	Hours	Operation		Items	Cost
No. D.C.		Drilling		Rig	5000
Length		Tripping		Camp	1000
Size		Deviation Survey		Fuel	1000
Thd.		SVC Rig		Water	228
OD		Cut Drilling Line		Aircraft	1600
ID		Reaming		Supervision	400
Wt.		Condition Mud & Circulating		Tompkins	1000
Eff. Wt.		Logging		Miscellaneous	200
Stabilizers		Repair Rig		Contingencies	1042
DP Size					
C					
				Daily Cost	11,470
				Prev. Cost	141,110
				Cum. Cost	152,580

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

73F 10

Day No. _____

COLUMBIA ET AL KOTANEELEE

Date: Dec. 14/78 Well: YT M-17 Depth: _____ Progress: _____

Activity & Remarks: Prepare to spot mud tanks.

Set up motors on sub base. Finish assembly and pin derrick. Spotted mud pumps. Spot matting for mud tanks. Install camp light plant in steel shack. Prepare to change out boiler.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Ø.		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	228
Aircraft	1600
Supervision	400
Conductor	22000
Miscellaneous	600
Tompkins	3000
Contingencies	3482
Daily Cost	38,310
Prev. Cost	102,800
Cum. Cost	141,110

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

3F 10

Day No. _____

Date: Dec. 13/78 Well: COLUMBIA ET AL KOTANEELEE M-17 Depth: _____ Progress: _____

Activity & Remarks: Rig up rotary tools.

Assemble sub, set up drawworks, doghouse and start to assemble derrick.

Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
[illegible]		
Slds.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	
No. D.C.	
Length	
Size	
Thd.	
OD	
ID	
Wt.	
Eff. Wt.	
Stabilizers	
DP Size	
Conn.	

TIME DISTRIBUTION		
Hours	Operation	
	Drilling	
	Tripping	
	Deviation Survey	
	SVC Rig	
	Cut Drilling Line	
	Reaming	
	Condition Mud & Circulating	
	Logging	
	Repair Rig	

COST ANALYSIS	
Items	Cost
Rig	5000
Camp	1000
Fuel	1000
Water	228
Aircraft	1600
Supervision	400
Lease & Access	75000
Congingencies	8422
Daily Cost	92,650
Prev. Cost	10,150
Cum. Cost	102,800

D&S PETROLEUM FIELD SERVICES LTD.

DAILY DRILLING REPORT

10

Day No. _____

COLUMBIA ET AL KOTANEELEE

Date: Dec 12/78 Well: M-17 Depth: _____ Progress: _____

Activity & Remarks: Moved and rigged up camp. Move most miscellaneous equipment to new location. Lay matting for substructure area.

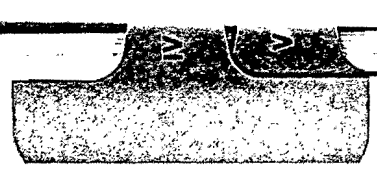
Deviation Surveys: _____ , _____ , _____ , _____ , _____

Properties	MUD Mat'l Used	Cost
Wt.		
Visc.		
WL		
FC		
pH		
Gels		
Solids.		
Oil		
Cl		
Ca		
PV		
YP		
	Daily Cost	
	Cum. Cost	

Hydraulics	
Pump	
Stroke	
Liner Size	
SPM	
Press.	
m^3/MIN.	
An. Vel.	
Jet Vel.	
HHP_S	
HHP_B	
HHP_B/HHP_S	

Bits	
No.	
Ser. No.	
Size	
Type	
Jets	
Out	
In	
Metres	
Hours	
Cum. Hrs.	
m/Hr.	
Teeth	
Bear.	
Gauge	
Wt.	
RPM	

Mechanics	TIME DISTRIBUTION		COST ANALYSIS	
	Hours	Operation	Items	Cost
No. D.C.		Drilling	Rig	5000
Length		Tripping	Fuel	1000
Size		Deviation Survey	Water	228
Thd.		SVC Rig	Camp	1000
OD		Cut Drilling Line	Supervision	400
ID		Reaming	Aircraft	1600
Wt.		Condition Mud & Circulating	Contingencies	922
Eff. Wt.		Logging		
Stabilizers		Repair Rig		
DP Size				
Conn.				
			Daily Cost	10,150
			Prev. Cost	
			Cum. Cost	10,150



D&S PETROLEUM FIELD SERVICES LTD.

DAILY OPERATIONS REPORT

WELL : COLUMBIA ET AL KOTANEELEE YT M-17

DATE	DEPTH	DETAIL OF OPERATION
1979		
Jan.2	36.4 m	36.4 m Repair mud pumps. Make up bottom hole assembly, mix mud.
		SPUDDED - 1800 hours JANUARY 1, 1979. Surveys - 31.49 - 3/4°. Mud Wt.
		1070, Visc. 35.
Jan.3	46.8 m	10.4 m Drilling. Repair mud pumps. Plugged bit - tripped to clear
		obstruction at bit nozzles. Change nozzles. Run in hole, clean out
		11 m fill on bottom. Mud Wt. 1080, Visc. 42.
Jan.4	98.7 m	51.9 m Trip for bit. Circulate and condition mud. Minor lost circu-
		lation at 50 m. Mixed sawdust. Surveys - 43 m - 0°, 52 m - 1/2°,
		72.5 m - 1°, 80.9 m - 3/4°. Mud Wt. 1120, Visc. 58.
Jan.5	143.2 m	44.5 m Drilling 311 mm hole. Trip for bit. Repair crown saver. One
		metre fill on trip. Surveys - 97 m - 3/4°, 105 m - 1/2°, 115 m - 7/8°,
		127 m - 1°, 136 m - 1/2°. Mud Wt. 1138, Visc. 59.
Jan.6	215.0 m	71.8 m Make wiper trip and strap pipe. Strap pipe at 155 m on trip.
		No fill on trip. Surveys - 144 m - 1/2°, 155 m - 1/2°, 172 m - 3/8°,
		193 m - 1/8°. Mud Wt. 1150, Visc. 104.
Jan.7	216.0 m	1.0 m Wait on cement. Made wiper trip and strapped pipe. No fill.
		Drill to 215 m . Circulate and trip out to run casing. Rig and run
		244 mm casing, as attached. Circulate casing and reduce mud viscosity
		to 60. Cement casing, as attached. Wait on cement. Ran 18 joints of
		244 mm, 64.75 kg/m, N-80 casing ST&C. Total run - 216.77 m. Landed
		at 215.84 m. Ran Wotco Float Shoe and Baker Float Collar, 1 joint up
		and 2 centralizers on shoe joint and 1 on next joint. Thread lock and
		tack weld first two joints. Ran 1.59 m^3 water ahead. Cement 9.4 m^3
		OWG with 2% CaCl and 34 kg cellophane. Average slurry weight - 1870 m^3.
		Calculated displacement, 7.75 m^3. Measured displacement, 7.6 m^3. Plug
		down at 2259 hours January 6, 1979, with 6894 kps. Bled off. Float
		held O.K. Good returns through mix and displacement. Had approximately
		0.3 m^3 contaminated mud return at end of displacement. Surveys -
		215 m - 0°. Mud Wt. 1150, Visc. 60.
Jan.8	216.0 m	0.0 m Nipple up BOP's. Check top of cement outside surface casing.
		Rig up 2" line. Recement outside top 5 m of surface casing with 1.13
		m^3 OWG cement. Cut off conductor. Wait on cement. Cut off surface
		casing and weld on bowl. Test weld to 20,400 kpa. Nipple up BOP's.

D&S PETROLEUM FIELD SERVICES LTD.

DAILY OPERATIONS REPORT

WELL: COLUMBIA ET AL KOTANEELEE YT M-17

DATE	DEPTH	DETAIL OF OPERATION
Jan.9	216.0 m	0.0 m Tighten bonnet bolts on 5" rams. Nipple up BOP's, choke and kill lines. Hook up hydraulic lines. Laid flare line from stack to manifold.
Jan.10	216.0 m	0.0 m Drilling out shoe. Nipple up. Pressure test blind rams, casing and manifold to 20,000 kPa. Picked up and ran collars. Pressure test pipe rams to 20,000 kPa and hydril to 10,000 kPa. Drill cement from 209 - 212 m. Mud Wt. 1140, Visc. 60.
Jan.11	282.0 m	66.0 m Drilling 3 m/hr. Drilled cement and clean to bottom. Formation bled off to 2750 kPa. Surveys - 234 m - 0°, 260 m - 3/4°, 270 m - 1/2°, 280 m - 1 1/4°. Mud Wt. 1060, Visc. 37.
Jan.12	337.0 m	55.0 m Drilling. Trip for bit. Ran stiff bottom hole assembly. Ream several tight spots. No fill on bottom. Strap pipe. No correction. Surveys - 290 m - 1 1/2°, 300 m - 1 1/2°, 310 m - 1 1/2°, 323 m - 2°. Mud Wt. 1080, Visc. 40.
Jan.13	457.0 m	120.0 m Drilling 215.9 mm hole. Surveys - 348 m - 2°, 377 m - 2 1/2°, 403 m - 2 3/4°, 432 m - 3 1/4°, 451 m - 3 1/2°. Mud Wt. 1080, Visc. 39.
Jan.14	542.0 m	85.0 m Drilling 215.9 mm hole. Toad Grayling Surveys - 472 m - 3 1/2°, 481 m - 3 3/4°, 509 m - 4 3/4°, 519 m - 4 7/8°, 529 m - 5 1/4°. Mud Wt. 1110, Visc. 40.
Jan.15	609.0 m	67.0 m Drilling 215.9 mm hole. Toad Grayling Surveys - 549 m - 5 1/4°, 568 m - 6°, 586 m - 6 1/4°, 606 m - 6 3/8°. Mud Wt. 1100, Visc. 37.
Jan.16	664.0 m	55.0 m Drilling 215.9 mm hole. Toad Grayling. Trip for bit, slip and cut line. Service reamer. No fill on trip. Twin Otter used by D.O.T., Islander - 2 trips to Nelson, overnight in Nelson. Surveys - 616 m - 6 1/4°, 636 m - 6 3/4°, 654 m - 7 1/4°. Mud Wt. 1090, Visc. 41.
Jan.17	712.0 m	48.0 m Drilling 215.9 mm hole. Toad Grayling. Rig down for 9 3/4 hours. Repair mud pump, changed out two pistons. Surveys - 674 m - 7 1/4°, 693 m - 7 3/4°. Mud Wt. 1080, Visc. 36.
Jan.18	724.0 m	12.0 m Drilling 215.9 mm hole. Survey at 712 m, misrun. Washout union in standpipe. Change to other standpipe. Repair shock hole. Replace gasket on mud pump. Repair pop valve on pump. Work plugged bit. Trip out of hole and strap pipe. Change cutters in reamer and bit and run in hole. Ream 700 - 712 m. Circulate, surveys misrun.

D&S PETROLEUM FIELD SERVICES LTD.

DAILY OPERATIONS REPORT

WELL : COLUMBIA ET AL KOTANEELEE YT M-17

DATE	DEPTH	DETAIL OF OPERATION
Jan.18	Cont'd	Surveys - 712 m - 8°, 722 m - 8°. Mud Wt. 1060, Visc. 33.
Jan.19	762.0 m	38.0 m Drilling. Repair 4" Cameron valve, shock hose between pumps, and pop valve line on No. 2 pump. Trip for bit. Strap pipe. No fill on trip. Surveys - 731 m - 8°, 758 m - 8°. Mud Wt. 1050, Visc. 34.
Jan.20	783.0 m	21.0 m Drilling. Fantasque. Drilling, service rig, check lower pipe rams. Increase weight on bit. Survey. Surveys - 770 m - 8 1/4°, 779 m - 8 1/4°. Mud Wt. 1070, Visc. 36.
Jan.21	805.0 m	22.0 m Drilling. Background Gas - 50 units, Cuttings Gas - 4 units, Lith: 70% Chert, 30% Siltstone. Repair washouts on D-1000. Surveys - 789 m - 7 3/4°, 798 m - 7 1/2°. Mud Wt. 1085, Visc. 43.
Jan.22	830.0 m	25.0 m Drilling 215.9 mm hole. Background Gas - 50 units, Cuttings Gas - 4 units. Lith: 50% Chert, 50% Siltstone. Surveys - 808 m - 7 1/2°, 818 m - 7°, 827 m - 7 1/2°. Mud Wt. 1090, Visc. 38.
Jan.23	848.0 m	18.0 m Reaming to bottom with bit No. 10. Drilling 1.31 m/hr. Drilling Exponent - 1.75, Cuttings Gas - 6 units, Background Gas - 56 units. Lith: 70% Siltstone, 30% Chert. Trip for bit. Reamer 1/2" undergauge Change out cutters. Stabilizers O.K. Ream in from 285 m. Surveys - 846 m - 6 3/4°. Mud Wt. 1080, Visc. 35.
Jan.24	859.0 m	11.0 m Tripping for bit. Drilling Rate - 0.77 m/hr., Drilling Exponent - 1.84, Cuttings Gas - 1 units, Background Gas - 105 units. Lith: 90% Chert, 10% Siltstone. Reamed bridges and fill and last 11 m of under gauge hole to bottom. Mud Wt. 1080, Visc. 40.
Jan.25	894.0 m	35.0 m Drilling 215.9 mm hole. Drilling Rate - 1.9, Drilling Exponent 1.68, Cuttings Gas - 6 units, Background Gas - 100 units. Lith: 70% Siltstone, 30% Chert. Trip for bit, change out reamer. 7 m fill on bottom. Hole good. Surveys - 859 m - 6°, 875 m - 5 7/8°, 885 m - 5 7/8°. Mud Wt. 1080, Visc. 40.
Jan.26	930.0 m	36.0 m Drilling 215.9 mm hole. Drilling Rate - 1.8, Drilling Exponent 1.79, Cuttings Gas - 35 units, Background Gas - 100. Lith: 100% Siltstone. 0.5 m^3/hr., water flow from 909 - 924 m. Total water influx - 5 m^3. Surveys - 893 m - 5 3/4°, 903 m - 5°, 914 m - 5°, 923 m - 5 1/2°. Mud Wt. 1080, Visc. 41.

D&S PETROLEUM FIELD SERVICES LTD.

DAILY OPERATIONS REPORT

WELL: COLUMBIA ET AL KOTANEELEE YT M-17

DATE	DEPTH	DETAIL OF OPERATION
Jan.27	967.0 m	37.0 m Drilling 215.9 mm hole. Drilling Rate - 1.43, Drilling Exponent - 1.84, Cuttings Gas - 0, Background Gas - 45 units. Lith: 100% Sandstone, Mattson top at 951. Surveys - 932 m - 5 3/4°, 941 m - 5 1/4° 952 m - 5°, 962 m - 5 1/4°. Mud Wt. 1080, Visc. 44.
Jan.28	992.0 m	25.0 m Drilling 215.9 mm hole. Drilling Rate - 0.85 m/hr., Drilling Exponent - 2.0, Cuttings Gas - 0 units, Background Gas - 35 units. Lith: 100% Sandstone, trace limestone. Surveys - 970 m 5 1/4°, 979 m - 5 1/2°, 990 m - 5°. Mud Wt. 1080, Visc. 46.
Jan.29	1009.0 m	17.0 m Drilling 215.9 mm hole. Drilling Rate - 1.15, Drilling Exponent - 1.90, Cuttings Gas - 0 units, Background Gas - 40-60 units, Flowline Temperature - 32.6°C. Lith: 100% Sandstone, fine, hard and tight. Strap out on trip for bit. Strap OK. Hole good. Lay down jars. Pick up replacement jars. 2 m fill on trip. 1 m drilling break at 1003.5 m, water flow at 1005, 10.4 m^3/hr. while drilling. 0 kPa, shut in drill pipe pressure. Surveys - 999 m - 5°. Mud Wt. 1080, Visc. 45.
Jan.30	1031.0 m	22.0 m Drilling 215.9 mm hole. Drilling Rate - 1.50 m/hr., Drilling Exponent - 1.93, Cuttings Gas -0 units, Background Gas - 50 units, Flowline Temperature - 34°C. Lith: 100% Sandstone. Surveys - 1007 m - 4 1/2°, 1017 m - 4 1/4°, 1028 m - 4 1/4°. Mud Wt. 1070, Visc. 46.
Jan.31	1057.0 m	26.0 m Drilling. Drilling, run surveys. Service rig. Drilling Rate- 1.6 m/hr., Cuttings Gas - 0 units, Background Gas - 70 units, Flowline Temperature - 39°C. Lith: 100% Siltstone. Surveys - 1036 m - 4 1/4°, 1046 m - 4 1/4°. Mud Wt. 1070, Visc. 47.
Feb.1	1084.0 m	27.0 m Dress near bit reamer. Drilling, survey, service rig and check BOP's. Trip for bit and strap pipe. Drilling Rate - 65 m/hr., Cuttings Gas - 0 units, Background Gas - 52 units, Flowline Temperature - 38°C. Lith: 40% Shale, 60% Sandstone, trace silt and limestone. Surveys - 1055 m - 4 1/2°, 1066 m - 1 1/8°, 1075 m - 3 7/8°, 1084 m - Misrun. Mud Wt. 1070, Visc. 44.
Feb.2	1104.0 m	20.0 m Tripping out of hole. Tight hole at 1084 m. Service rig. Tripped in hole, ream tight hole from 285 - 350 m. Trip in to 1065 m. Reamed under gauge hole from 1065 - 1084 m. Drilled ahead and surveyed.

D&S PETROLEUM FIELD SERVICES LTD.

DAILY OPERATIONS REPORT

WELL : COLUMBIA ET AL KOTANEELEE YT M-17

DATE	DEPTH	DETAIL OF OPERATION
Feb.2	Cont'd	Trip out. Drilling Rate - 1.6 m/hr., Cuttings Gas - 0 units, Background Gas - 50 units, Flowline Temperature - 35.5°C. Lith: 10% Shale, 90% Siltstone. Surveys - 1093 m - 4 1/2°. Mud Wt. 1090, Visc. 49.
Feb.3	1108.0 m	4.0 m Working stuck pipe. Bit at 1096 m (15' movement). Trip out (measuring OK). Change bit and reamer cutters. Service rig, run in hole, cut drill line. Ran to 285 m, ream to 340 m. Run in to 1075 m, ream to 1104 m. Drill to 1108 m. Background Gas - 60 units, Cuttings Gas - 0 units, Flowline Temperature - 39°C. Lith: 90% Siltstone, 10% Shale. Survey - 1103 m - 5°. Mud Wt. 1080, Visc. 48.
Feb.4	1120.0 m	12.0 m Drilling 215.9 mm hole. Work stuck pipe. Came free at 0900 hours. Broke circulation and cleaned to bottom. Drilled ahead, service rig. Pulled 5 stands, repair swivel. Ran in to bottom, repair No. 1 pump pop valve. Pulled 6 stands and repair swivel again. Ran in and drill ahead. Mud Wt. 1080, Visc. 55.
Feb.5	1151.0 m	31.0 m Drilling. Run 2 surveys and service rig. Drilling Rate - 1.5 m/hr., Background Gas - 80 units, Cuttings Gas - 0 units, Flowline Temperature - 38.5°C. Lith: 80% Sandstone, 20% Limestone. Gaining 16 barrels of water per hour. Surveys - 1120 m - 5 1/2°, 1130 m - 5 ¼°. Mud Wt. 1065, Visc. 68.
Feb.6	1177.0 m	26.0 m Drilling 215.9 mm hole. Drilling, surveys and work tight hole after survey at 1160 m. Water influx 900 liters per hour. Drill ahead. 1.33 m/hr. Background Gas - 80 units, Cuttings Gas - 0 units, Flowline Temperature - 40.8°C, Lith: 30% Limestone, 70% Sandstone. Surveys - 1150 m - 5 1/2°, 1160 m - 5 3/4°, 1169 m - 5 1/2°. Mud Wt. 1070, Visc. 90.
Feb.7	1205.0 m	28.0 m Trip out of hole. Drilling, service rig, and survey. Flow rate at 1202 m, 1.8 m^3/hr. Trip for bit. Drilling Rate - Last 4 m approximately 3 m/hr., Background Gas - 35 units, Cuttings Gas - 0 units Flowline Temperature - 39°C. Lith: 60% Limestone, 40% Sandstone. Surveys - 1187 m - 4 1/2°. Mud Wt. 1070, Visc. 80.
Feb.8	1220.0 m	15.0 m Trip for bit. Drilling Rate - 1.5 m/hr., Background Gas - 70 units, Cuttings Gas - 0 units, Flowline Temperature - 37°C. Lith: 100% Sandstone. Pull out of hole. Hole tight on 15-17 stands off bottom. Measure out, OK. Turned reamer pins, install float in string

D&S PETROLEUM FIELD SERVICES LTD.

DAILY OPERATIONS REPORT

WELL: COLUMBIA ET AL KOTANEELEE YT M-17

DATE	DEPTH	DETAIL OF OPERATION
Feb.8	Cont'd	service rig, check crown saver and motor shut offs. Trip in hole, ream
		bottom 9 m. Drill ahead, circulate for trip, survey and trip out. 10
		m^3 pit gain on trip. Survey - 1205 m - 5 1/4°. Mud Wt. 1060, Visc. 75.
Feb.9	1237.0 m	17 m Drilling ahead. Drilling Rate - 1.4 m/hr., Background Gas - 90
		units, Cuttings Gas - 0 units, Flowline Temperature - 36°C. Lith:
		100% Sandstone. Trip for bit, change reamer cutters, pins and 2 blocks.
		Pick up new shock sub. Trip in with reamer 7 m to bottom. Drilled
		ahead, rig service, check crown saver and survey. Gained 18 m^3 fluid
		on trip out, (1.45 m^3/hr.). Surveys - 1220 m - 5 1/4°, 1235 m - 5 1/2°.
		Mud Wt. 1060, Visc. 70.
Feb.10	1270.0 m	33 m Drilling ahead. Drilling, service rig. Drilling at 1256 m -
		had drilling break. Check flow rate - 6 m^3/hr. Shut in over 850 kPa.
		Drill to 1259 m, check shut-in - 1100 kPa. Service rig and drill ahead.
		Drilling Rate - 1.7 m/hr., Background Gas - 140 units, Cuttings Gas -
		0 units, Flowline Temperature - 38°C, 2.5 m^3/hr. average flow. Lith:
		90% Sandstone, 10% Limestone. Survey - 1255 m - 5 1/2°. Mud Wt. 1060,
		Visc. 75.
Feb.11	1301.0 m	31 m Drilling. Service rig, drill. Check annulus pressure - 500 kPa
		in 5 minutes increasing to 950 kPa in 15 minutes. Survey and drill to
		1290 m. Circulate and increase mud weight to 1180. Drill ahead.
		Drilling Rate - 1 m/hr., Background Gas - 0 units, Flowline Temperature-
		36°C. Lith: 70% Sandstone, 30% Limestone. Mud Wt. 1220, Visc. 75.
Feb.12	1328.0 m	27 m Circulate and raise mud weight for trip. Service rig, check
		crown-o-matic. Drilled ahead, ran survey, drilled ahead. Start out
		of hole measuring, well flowing, trip back to bottom. Shut in well.
		Shut in casing pressure, 1035 kPa. Circulate and raise mud weight.
		Drilling Rate - .77 m/hr., Background Gas - 48 units, Cuttings Gas - 0
		units, Flowline Temperature - 36.2°C. Lith: 100% Sandstone. Gain
		1/2 m^3/hr., prior to trip. Survey - 1323 m - 5 1/2°. Mud Wt. 1200,
		Visc. 65.
Feb.13	1330.0 m	2 m Drilling. Drilling Rate - 0.8 m/hr. Background Gas - 1 unit,
		Cuttings Gas - 0 units, Flowline Temperature - 30°C, Lith: 100% Sand-
		stone. Service rig, circulate and increase mud weight. Trip for bit.
		Turn pins on near bit reamer. Trip in hole to 1310 m. Ream 18 m to

D&S PETROLEUM FIELD SERVICES LTD.

DAILY OPERATIONS REPORT

WELL: COLUMBIA ET AL KOTANEELEE YT M-17

DATE	DEPTH	DETAIL OF OPERATION
Feb 13	Cont'd	bottom. Measure out 1.8 metres longer than tally, no adjustment.
		Mud Wt. 1350, Visc. 68.
Feb 14	1 332 m	2 m. Circulate and condition hole at 303 m. Drill to 1 332 m. Slug
		pipe, pull out to bottom hole assembly. Run in to 285 m. Ream and
		wash sloughing hole from 285 m to 303 m. Strap pipe - no correction
		made. Mud Wt. 1350, Visc. 165.
Feb 15	1 332 m	0 m. Pull out of hole to log. Ream bridges from 364-421, 820-840, 1067
		- 1085 and 1208-1227 m. Run in to bottom - no fill. Circulate and
		condition mud. Pump pill. Dummy trip to casing shoe and return to
		bottom. No tight spots. Circulate hole clean. Trip out to log.
		Mud Wt. 1360, Visc. 200.
Feb 16	1 332 m	0 m. Pull out of hole to log and fish pipe stripper out of BOP.
		Rig service and pull out of hole to log. Rig up Schlumberger and run
		into 378 m. Hole bridged. Rig out loggers. Run in hole with bit.
		Reamed bridges from 250 m to bottom. Three metres fill on bottom.
		Circulate and condition. Pump pill and pull out of hole to log.
		Mud Wt. 1350, Visc. 198.
Feb 17	1 332 m	0 m. Trip out to log. Remove wiper from BOP's. Rig up and log:
		DILL-BHCS, CNL-FDC. Density tool failed. Rig out Schlumberger. Trip
		in hole. Broke circulation, lost approximately 13-16 m^3 mud to hole.
		Circulate hole and build mud volume. Measure out. Mud Wt. 1330,
		Visc. 150.
Feb 18	1 332 m	0 m. Running casing. Trip and log. Rig with Schlumberger, run CNL-
		FDC TD - surface casing. Rig out Schlumberger. Trip in hole with bit
		and BHA. Circulate and condition mud in hole for casing. Pull out of
		hole, break connections and stand back in derrick. Lay down BHA,
		change pipe rams and rig to run casing. Mud Wt. 1340, Visc. 143.
Feb 19	1 332 m	Circulate casing and condition mud.
		Run 112 joints 177 mm, 47.62 kg/m, N-80, 8RD casing. Break circulation
		and circulate at 429 m - 8000 kPa. Run in hole to bottom. Mud coming
		over casing on last 4 m of last several joints. Circulate and
		condition mud. Mud Wt. 1370, Visc. 120.
Feb 20	1 332 m	0 m. Circulate and prepare to cement casing. Circulate and work
		casing while waiting on wireline equipment to check casing. Rig up

D&S PETROLEUM FIELD SERVICES LTD.

DAILY OPERATIONS REPORT

WELL: COLUMBIA ET AL KOTANEELEE YT M-17

ATE	DEPTH	DETAIL OF OPERATION
eb 20	Cont'd	wireline tools. Run in hole with rubber plug on sinker bar. Tag
		float collar. Pressure test casing to 9000 kPa for 10 minutes. No
		bleed off. Rig out wireline equipment. Mud Wt. 1340, Visc. 95.
eb 21	1 332 m	0 m. Laying down drill pipe. Circulate to condition mud. Cemented
		with 21.3 tonnes 0-1-8 with 0.5% T-10, 12.95 tonnes 0-1-0- with 15%
		NaCl and 0.7 T-10. Plug down at 12:50 hours. Bumped with 14,000 kPa.
		Tore out BOP's, bled off casing at 23:00 hours. Cut casing re-installed
		BOP's. Lay down pipe.
eb 22	1 332 m	0 m. Running 88.9 mm tubing. Finish laying down drill pipe. Tear out
		BOP's, install tubing hanger. Rig up power tongs and run tubing. Run
		mule shoe, 1 joint tubing, Baker AD-1 packer and tubing.
eb 23	1 332 m	0 m. Preparing to circulate hole to water. Finished sorting and
		running tubing. Tagged bottom at 1318 m K.B.
eb 24	1 332 m	0 m. Circulate annulus to inhibited water. Wait on Nowsco, displace
		hole to water. Shut down for 2 hours for plant start up. While pulling
		up to setting depth, packer set and sheared. Strap out of hole.
		Re-dress packer and ran in hole.
eb 25	1 332 m	0 m. Pull out of hole with perforating gun. Circulate annulus to
		inhibited water topped with 0.8 m^3 diesel. Land packer in 10,000 daN
		tension at 980 m K.B. Install wellhead. Pressure test tubing and
		wellhead to 29,000 kPa for 20 minutes, OK. Ran Gamma Ray CCL from 1319
		to 1100 m. Perforate, 1312.5 - 1317 m, 1300.5 - 1304.5 m, 1282.5 -
		1286 m, 1256.5 - 1261.5 m K.B. BHCS log intervals with 54 mm tubing
		gun at 13 JSPM. 1 misrun.
eb 26	1 332 m	0 m. Flowing well. Pull out of hole with Schlumberger. Shut well in
		for 1 1/4, pressure built to 2760 kPa. Open to flow, 78 m^3 in 21
		hours. Gassing slightly, H_2S, 100 ppm.
eb 27	1 332 m	0 m. Tearing out rig.
		Shut well in, injected 2 barrels of diesel down tubing. Shut in
		pressure after 6 hours, 2585 kPa. RIG RELEASED, 16:00 hours, 79 02 26.

COLUMBIA GAS DEVELOPMENTS CANADA LTD. ET AL

G E O L O G I C A L R E P O R T

COLUMBIA GAS ET AL KOTANEELEE YT M-17

February, 1979

Submitted by: B. MacTiernan
P. Hood

GEOLOGICAL SUMMARY

I FORMATION TOPS FOR KOTANEELEE YT M-17

Age	Formation	Depth	Sub-Sea Depth
Cretaceous	Spirit River	Spud	
Triassic	Toad-Grayling	Above Logged Interval	
Permian	Fantasque	745.6m.	-326.5m.
Mississipian	Mattson	948.5m.	-529.4m.

II CORRELATION OF FORMATION TOPS

For Kotaneelee YT #-37, Kotaneelee YT H-38, N. Beaver R. YT 1-27 and Kotaneelee YT M-17

Formation	E-37 Depth Sub Sea	H-38 Depth Sub Sea	1-27 Depth Sub Sea	M-17 Depth Sub Sea
Spirit River	Spud	Spud	Spud	Spud
Toad-Grayling		Above Logged Interval		
Fantasque	1,980' 38'	1318' 932'	2,320' -874'	2,446' -1071'
	603.6m 11.6m	401.8m 284m	707.3m -266.5m	745.6m -326.5m
Mattson	2,680' -642'	1,658' 592'	2,898' -1,452'	3,111' -1736
	817m -195.7m	505.5m 180.5m	883.5m -442.7m	948.5m -529.4m

III Water Flows On Kotaneelee YT M-17

Depth Interval	Lithology	Mud Weight	Flow Rate
664 - 713m	Sandstone Siltstone	1070kg/m^3	1 m^3/hr
909 - 924m	Siltstone	1080kg/m^3	0.5m^3/hr
1003 - 1005m	Sandstone	1070kg/m^3	10m^3/hr
1136 - 1140m	Sandstone	1065kg/m^3	2.5m^3/hr
1256 - 1260.8m	Sandstone	1070kg/m^3	6m^3/hr
1301 - 1305m	Sandstone	1175kg/m^3	1.5m^3/hr
1313 - 1316m	Sandstone	1200kg/m^3	0.5m^3/hr

SAMPLES DESCRIPTION

300-303m	Shale, 100% medium to dark grey-brown, moderately hard, fissile, non-calcareous, micromicaceous in part, locally becoming slightly silty.
303-318m	Shale, 90%, predominantly as above, Grading to Siltstone. Siltstone, 0-5% Sandstone, 5-10, white to light grey, moderately hard, friable,very fine to fine, subangular, containing 20% argillaceous filler, 10% non-calcareous cement.
318-321m	Shale, 100%, as above.
321-327m	Shale, 80% as above. Sandstone, 20%, white, soft to firm, occasionally hard, locally friable, moderately sorted, with clear subangular to subrounded, fine grained quartz, speckled with black mica in part, moderately calcareous with calcareous cement.
327-357m	Shale, 100% medium grey, moderately hard, subfissile, non calcareous, locally with abundant pyrite.
357-369m	Shale, 90%, as above. Siltstone, trade to 10%, medium grey, grading from Shale, as above.
369-372m	Shale, 100%, as above.
372-381m	Shale, 90%, as above. Dolomite, 10%, medium brown, hard, argillaceous, subfissile, cryptocrystalline.
381-405m	Shale, 90%, as above, occasionally with black-dark green glauconite(?) specks, chlorite(?). Siltstone, 10%, medium grey, grading from Shale.
405-420m	Shale, 0-10%, as above. Sandstone, 90-100%, light to medium grey, hard, friable, sacchroidal, with fine, clear, subangular to surrounded quartz, abundant green-light blue glauconite, micromicaceous, very silty, grading to Siltstone, moderately calcareous.
420-429m	Shale, 100%, medium grey, with some light brown, generally as above.
429-435m	Sandstone, 70%, generally as above with less glauconite. Shale, 30% as above.
435-438m	Shale, 80%, as above. Sandstone, 20%, as above.
438-441m	Sandstone, 80%, as above. Shale, 20%, as above.

441-447m Shale, 100%, light to medium grey, moderately hard, subfissile non calcareous.

447-450m Sandstone, 70%, as above.
Shale, 30%, as above.

450-456m Shale, 100%, light grey green, brick red, firm to moderately hard, subfissile, occasionally becoming silty, grading to Siltstone, very occasionally grading to sandy Siltstone non calcareous.

456-459m Shale, 40-60%, light grey and red brown (brick red), firm moderately hard, subfissile, non calcareous.
Siltstone, 10%, light blue, moderately hard, grading to Shale.
Sandstone, 30-50%, light grey to light blue grey, moderately hard, blocky, subrounded, very fine, subfissile, non calcareous, moderatly sorted.

459-465m Shale, 100%, generally as above

465-477m Shale, 20-60%, as above, locally grading to
Siltstone, trace-20%, as above.
Sandy Siltstone, 10-30%, grading from
Sandstone, 10-40%, argillaceous, generally as above.

477-480m Shale, 100%, locally silty, non calcareous, generally as above.

480-495m Shale, 20-50%, as above, occasionally grading to
Siltstone, 20-30%, generally red brown, hard.
Sandy Siltstone, trace-10%, very argillaceous, grading from
Sandstone, 20-50%, generally light grey, very fine, quartzitic, hard, occasionally pink grey, fine.

495-501m Shale, 60-80%, generally as above.
Siltstone, 10%, grading from Shale above.
Sandy Siltstone, 0-10%, grading from
Sandstone, 0-30%, as above

501-504m Shale, 10%, as above, grading to
Siltstone, 10%, as above.
Sandstone, 80%, as above.

504-522m Shale, 30-70%, generally brick red, also light and dark grey, firm to hard, non calcareous, occasionally micromicaceous, subfissile, locally blocky, silty, grading to
Siltstone, 10-20%, as above.
Sandstone, 10-50%, locally argillaceous, as above.

522-540m Shale, 20-70%, as above, grading to
Siltstone, 10-40%, as above.
Sandstone, 20-60%, as above

540-552m Shale, 80-100%, brick red, occasionally light blue-grey, moderately hard, subfissile, non calcareous.
Siltstone, 0-20%, light to medium grey, firm to moderately hard, grading to Shale.

558-567m	Shale, 30-50%, red-brown, as above, locally grading to Siltstone, 10-30%, generally medium grey, some red-brown, firm to hard, argillaceous, subfissile, non calcareous. Sandstone, 20-40%, medium grey, as above, locally grading to Siltstone.
567-591m	Sandstone, 90-100%, white to medium grey, moderately hard to hard, friable, moderately sorted, subangular to subrounded, fine, non to slightly calcareous, tight, clean, micromicaceous in part.
591-600m	Sandstone, 40-60%, generally medium grey, occasionally dark grey, generally very fine locally fine, firm, sacchroidal, blocky, moderately sorted, very slight to moderately calcareous, argillaceous in part. Siltstone, 20-50%, medium grey, occasionally dark grey, moderately hard to hard, grading from Sandstone. Shale, 0-10%, medium to dark grey, moderately hard, subfissile, non calcareous.
600-615m	Sandstone, 80-90%, medium grey, hard, blocky, very fine to fine, argillaceous, slightly calcareous, tight, grading to Siltstone, 10-20%, medium grey, hard, blocky, slight to moderate calcareous.
615-624m	Sandstone, 70-80%, as above. Siltstone, 30-40%, as above.
624-636m	Shale, 70-100%, brick red, locally medium grey, blocky-subfissile, moderately hard, slight to moderately calcareous. Siltstone, 0-10%, as above. Sandstone, 0-20%, as above.
636-663m	Shale, 70-90%, brick red, and medium grey, grey Shale increasing towards bottom, generally as above, moderately calcareous, locally grading to Siltstone, trace to 20%, medium grey, hard, occasionally grading to a very fine Sandstone. Sandstone, 10-30%, medium grey, occasionally white to light grey, hard, blocky, friable, very fine, moderately sorted, slight to moderately calcareous.
663-669m	Shale, 20-30%, red-brown, occasionally medium grey, firm to moderately hard, subfissile, non calcareous, with occasional very fine Sandstone laminations, 1-2mm thick. Siltstone, 10-40%, red-brown and light to medium grey, firm to hard, subfissile, slightly calcareous. Sandstone, 40-60%, medium grey, speckled, with black mica, hard, blocky, very fine to fine, slightly calcareous, occasionally grading to medium grey Siltstone.
669-684m	Shale, 20-40%, as above. Siltstone, 60-80%, generally medium grey, hard, locally very hard, blocky, occasionally splintery, locally subfissile, dolomitic in part.

684-690m Shale, 70-90%, medium grey and red brown, as above.
Siltstone, 10-20%, as above.
Sandstone, trace-10%, as above.

690-693m Shale, 40%, as above, becoming slightly dolomitic.
Siltstone, 50%, as above.
Sandstone, 10%, as above.

693 -711m Shale, 70-100%, generally medium grey, occasionally red brown, slightly to moderatly dolomitic, as above.
Siltstone, trace-10%, medium grey, hard, occasionally very hard, blocky speckled, slightly calcareous/dolomitic, grading to Dolomite, trace-10%, medium grey, hard to very hard, blocky, splintery, brittle, angular, very silty.

711-723 Shale, 100%, medium grey, occasionally medium brown and dark to very dark brown, moderately hard, subfissile to blocky, non to very slightly calcareous, micromicaceous in part.
Dolomite, trace, light to medium grey, very hard, blocky, splintery, angular, brittle, microcrystalline, very silty.

723-729 Shale, 60-50%, as above.
Siltstone, 30-40%, light to medium grey, subfissile soft to medium hard, very argellaceous, occasionally slightly sandy, slightly calcareous.
Sandstone, 10%, medium grey, blocky, hard, occasionally becoming slightly argillaceous, moderately calcareous,.

729-744m Shale, 90-100%, red brown and medium grey, interbedded generally as above.
Siltstone, trace-10%, medium grey, slightly dolomitic as above.
Dolomite, trace, medium grey, hard, blocky, angular, brittle.

744-747m Shale, 50-80%, generally as above.
Siltstone, trace-20%, as above.
Chert, 0-50%, first appearance in spot sample at 746m very dark grey to black, very hard mottled with quartz crystals, blocky, angular, splintery, translucent in part, very silty.

Note, drillers depth correction, new depth: 761m

762-768m Siltstone, 30%, medium grey and very dark grey, very hard, occasionally, hard, blocky, brittle, angular, siliceous, trace glauconite.
Chert, 70%, dark grey to black, very hard, blocky, angular, with quartz inclusions, generally very silty, locally grading to Siltstone.

768-774m Chert, 100%, as above.

774-777m Siltstone, 100%, as above.
Chert, trade, as above, brown/white mottled

777-786m Siltstone, 20-30%, medium to dark grey, firm to hard, siliceous, blocky, subfissile, brittle.
Chert, 70-80%, dark grey to black, locally translucent brown, very hard, blocky, angular, argillaceous, with quartz inclusions.

786-795m Siltstone, 40%, as above.
Chert, 60%, as above, locally vitreous and translucent, abundant clear quartz.

795-798m Siltstone, 20%, as above.
Chert, 80%, generally as above, generally dark brown/grey, locally translucent brown and white, locally clear, abundant glauconite.

798-801m Siltstone, 10%, as above.
Chert, 90%, as above.

801-804m Siltstone, 30%, as above, occasional glauconite
Chert, 70%, as above, occasionally white to light grey, translucent, occasional glauconite.

804-807m Siltstone, 50%, light to dark grey, medium to dark brown, hard, locally subfissile, siliceous
Chert, 50%, light to dark brown, very hard, vitreous, blocky.

807-810m Siltstone, 30%, as above.
Chert, 70%, as above, with abundant milky and clear quartz.

810-819m Siltstone, 40%, as above.
Chert, 60%, as above, with pyrite and glauconite locally very abundant, argillaceous.

819-828m Siltstone, 40-50%, as above.
Chert, 50-60%, as above, commonly translucent and white, also clear quartz, with needle like inclusions of mica occasional pyrite.

828-831m Chert, 50%, light-dark grey, very hard, vitreous, block, angular, quartz with inclusions, occasional glauconite, silty, grading to Siltstone, 50%, light-dark grey, medium to dark brown, soft to very hard, siliceous.

831-834m Siltstone, 30%, as above
Chert, 70%, as above.

834-840m Siltstone, 60-70%, dark brown, blocky, very hard, siliceous, as above.
Chert, 40-30%, as above.

840-843m Siltstone, 40%, as above.
Chert, 60%, generally clear to white to light brown, as above.

843-849m Siltstone, 70%, dark brown, very hard, blocky, siliceous.
Chert, 30%, light to dark brown, very hard, vitreous, blocky, angular, quartz with inclusions, common transparent fragments, trace pyrite, silty grading to Siltstone.

849-858m	Siltstone, 0-20%, as above. Chert, 80-100%, as above.
858-864m	Siltstone, 60%, generally as above, trace pyrite. Chert, 40%, generally as above, dark brown grading to Siltstone, and clear quartz fragments with inclusions.
864-888m	Siltstone, 0-30%, as above. Chert, 70-100%, as above.
888-891m	Siltstone, 50-70%, as above, with good trace pyrite. Chert, 30-50%, as above.
891-927m	Siltstone, 100%, dark drown, moderately to very hard, blocky to subfissile, locally siliceous, micromicaceous, occasionally slightly calcareous, trace pyrite.
927-949m	Siltstone, 100%, dark brown, moderately hard, to very hard, locally with conchoidal fracture, slightly siliceous, slightly calcareous, blocky to subfissile, with some pyrite, some silica fossil replacement.
949-981m	Sandstone, 100%, predominantly light to medium grey, also medium to dark brown, occasionally white, moderately hard, to hard, friable, blocky, very fine to fine grained, subangular to subrounded, well sorted, moderate to very calcareous, occasionally dirty, medium to dark brown, no shows.
981-984m	Sandstone, 80%, as above. Siltstone, 10%, medium to light brown, very hard, blocky, generally noncalcareous with siliceous cement. Limestone, 10%, medium brown, blocky, very hard, silty.
984-993m	Sandstone, 100%, white to light grey to dark grey, moderately hard to very hard, friable, blocky, very fine to fine grained, subangular to subrounded, calcareous matrix, 25% oil show at 987m, yellow flourescence, slightly streaming pale yellow cut fluorescence, blue-white crush cut fluorescence throughout.
993-996m	Sandstone, 80%, light to dark grey, some dark brown, moderately hard to hard, occasionally very hard, siliceous, friable in part, very fine to fine grained, subrounded, moderately sorted, calcareous cement, tight, pale yellow fluorescence with blue-white cut fluorescence. Siltstone, 20%, dark grey, very hard, sandy in part.
996-1005m	Sandstone, 100%, medium grey, some light and dark grey, hard, blocky to subfissile, very fine grained, subangular, moderately sorted, slightly to moderately calcareous, tight, yellow fluorescence with blue-white cut fluorescence.
1005-1008m	Sandstone, 100%, white to grey, moderately hard, very fine to fine grained, subangular, well sorted, moderately calcareous matrix, with mafic minerals present, whitish-yellow fluorescence with a blue-white crush cut.

1008-1014m Sandstone, 70-80%, as 1005-1008m interval.
Siltstone, 20-30%, grey, soft, fissile, very slightly calcareous, yellow fluorescence.

1014-1017m Sandstone, 10%, as above.
Siltstone, 90%, grey, hard, moderately calcareous, otherwise as above.

1017-1023m Sandstone, a trace.
Siltstone, 80%, dark grey, hard to very hard, subfissile to blocky, with occasional conchoidal fracture, slightly to moderately calcareous, argillaceous in part.
Limestone, 20% white to light grey, dirty, very argillaceous, firm to hard, silty, some dark grey-brown, microcrystalline, hard.

1023-1026m Sandstone, 40%, dark grey to brown, hard, blocky, moderately calcareous, slightly argillaceous, tight.
Siltstone, 40%, as above grading to very fine grained sandstone.
Limestone, 20%, as above.

1026-1029m Sandstone, 100%, light to medium grey, occasionally dark grey, hard, blocky, very fine grain angular to subangular, moderately sorted, tight, moderately to very calcareous, pale yellow fluorescence, no cut.

1029-1032m Sandstone, 90%, light to medium grey, occasional dark gray, hard, blocky, very fine grained, angular to subangular, moderately sorted, moderately calcareous, tight, pale yellow fluorescence, occasional blue-white cut fluorescence.
Siltstone, 10%, dark gray, moderately hard, slightly calcareous.

1032-1035m Sandstone, 10%, white to light to dark gray, moderately hard, blocky, very fine grained, subangular, well sorted, moderately calcareous cement.
Siltstone, 90%, dark gray, moderately hard, subfissile, slightly calcareous.

1035-1038m Sandstone, 65%, predominantly light gray, very calcareous grading in part to sandy limestone, otherwise as above.
Siltstone, 30%, as in 1032-1035m.
Limestone, 5%, medium brown to light gray, very argillaceous and sandy.

1038-1044m Sandstone, 70-90%, light to medium gray, occasional gray-brown, hard blocky, very fine grained, 30% having calcareous cement, subangular, moderately sorted, tight.
Siltstone, 10-30%, very dark brown-gray, hard, subfissile to blocky, slightly calcareous.

1044-1047m Sandstone, 50%, as above, no shows.
Siltstone, 50%, predominantly as above, occasionally becoming coarse grading to very fine grained sandstone, a trace of calcite veining.

1047-1050m Sandstone, 50%, as above, no shows.
Siltstone, 70%, as above with occasional microfossils replaced by calcite.
Limestone, 10%, white to light gray, firm to moderately hard, grading to sandstone, some dark gray, hard, micro crystalline.

1050-1053m Sandstone, 40%, white to light gray, hard, very fine grained, very calcareous occasionally grading to sandy limestone.
Siltstone, 30%, as above, very calcareous, occasional microfossils replaced by calcite.
Limestone, 30%, white to light to dark gray-brown, hard, microcrystalline, argillaceous, silty.

1053-1056m Sandstone, 100%, medium gray, hard, blocky, very fine grained, subangular, moderately sorted, moderately to very calcareous, tight, pale yellow fluorescence, occasional blue-white cut fluorescence.

1056-1071m Sandstone, 40-60%, white to medium gray, moderately hard, very fine grained, subangular to subrounded, moderately sorted, moderately to very calcareous, tight, 30-50% pale yellow sample fluorescence, occasional blue-white cut fluorescence.
Siltstone, 40-60%, medium to dark gray, moderately hard to hard, subfissile, occasionally fissile, slightly calcareous.

1071-1077m Sandstone, 60-70%, white to light gray (60%), moderately hard to hard, friable, blocky, very fine to fine grained. Occasionally medium grained, subangular, moderately sorted, moderately to very calcareous, no shows; dark gray, (40%), hard, blocky, argillaceous, grading to sandy siltstone.
Sandy Siltstone, 10%, slightly calcareous.
Siltstone, a trace to 10%, very dark gray to black, hard to very hard, subfissile, slightly calcareous.
Shale, 20%, some red-brown interbedded with dark grey very fine grained sandstone, hard, fissile, slightly calcareous.

1077-1080m Sandstone, 10%, as above.
Siltstone, 10%, as above.
Shale, 80%, very dark gray, hard, occasionally very hard, fissile to subfissile, slightly calcareous, occasionally blocky, black, slightly silty.

1080-1083m Sandstone, 60%, as above, becoming very calcareous in part, grading to sandy limestone.
Shale, 40%, dark gray and black, hard to very hard, fissile to blocky, slightly calcareous.

1083-1086m Sandstone, 40%, white to gray, fine to very fine grained, moderately hard, subangular to subrounded, moderately sorted, moderately calcareous matrix, moderately tight, a trace of pyrite, 70% yellow fluorescence.
Siltstone, 60%, light to dark gray, moderately soft to hard, subfissile, moderately calcareous matrix.

1086-1089m Sandstone, 20%, as above with mafic minerals, moderate porosity, 40% yellow fluorescence a trace of pyrite, a trace of chert, no cut.

1089-1092m Sandstone, 70%, as above.
Siltstone, 20%, as above.
Shale, 10%, dark gray, moderately hard, fissile to subfissile, slightly calcareous.

1092-1095m Sandstone, 70%, light gray to light brown, hard, friable, fine grained, occasionally very fine grained, angular to subangular, moderately sorted, slightly to very calcareous, pale yellow fluorescence.
Siltstone, 10%, as above.
Shale, 20%, as above with occasional blocky, occasional silty, very hard fragments.

1095-1101m Sandstone, 90%, as above.
Shale, 10% as above.

1101-1104m Shale, 90%, dark gray, moderately hard, subfissile to fissile, slightly calcarious.
Siltstone, 10%, very dark gray, hard, occasionally very hard, subfissile, slightly calcareous.
Sandstone, a trace.
This was a poor sample logged after a trip.

1104-1116m Sandstone, 90%, light gray, occasionally dark gray, hard, blocky, very fine to fine grained, very occasionally medium grained, friable in part, subangular to subrounded, moderately sorted, slightly to very calcareous, dominant clear quartz grains with some mafic and white calcite inclusions, tight, 20% yellow fluorescence, yellow streaming cut fluorescence.
Shale, 10%, dark gray, moderately hard, subfissile to fissile, slightly calcareous, occasionally becoming black, very hard, and silty.

1116-1119m Sandstone, 90%, light to dark gray, dominant clear quartz grains, very fine to fine grained, soft to firm occasionally hard to very hard, friable, subrounded to rounded, slightly to very calcareous matrix, argillaceous in part, mafic minerals common, 20% yellow fluorescence, yellow streaming cut fluorescence.
Shale, 10%, dark gray, moderately hard, subfissile to fissile, occasionally blocky, slightly silty, very hard.

1119-1125m Sandstone, 0-10%, as above.
Siltstone, 40-60%, brown to very dark brown, firm to moderately hard, highly calcareous, occasionally sandy, subfissile to blocky.
Limestone, 40-50%, white to brown, firm to hard, blocky, dirty, argillaceous, sandy in part, grading to siltstone.

1125-1131m Sandstone, 10-20%, gray to dark brown, subangular to subrounded, firm to hard very fine to fine grained, dirty, argillaceous, grading to sandy siltstone, very calcareous matrix.
Siltstone, 20-30%, dark brown, firm to hard, blocky to subfissile, slightly to very calcareous, sandy.
Limestone, 50-70%, as above.

1131-1149m Sandstone, 80-100%, light gray to medium brown, moderately hard to hard, friable, very fine to fine grained, occasionally becoming medium grained, subangular to subrounded, slightly argillaceous in part, very calcareous grading to sandy limestone, tight sandstone becoming friable, fine to medium grained, moderately to poorly sorted, with 20% calcareous cement, clear quartz dominant, poor porosity occasionally becoming fair porosity, (some calcite, up to 10%, white, soft) dark yellow fluorescence, with a very slow blue-white streaming cut fluorescence.
Limestone, 0-20%, white argillaceous, sandy, soft almost pure calcite.

1149-1167m Sandstone, 100%, white to light gray to brown, firm to hard, very fine to fine grained occasionally medium grained, angular to subrounded, friable, some dirty, argillaceous, predominantly clear quartz grains, non to very calcareous, moderately to well sorted, poor porosity, occasional pyrite, no cut.

1167-1170m Sandstone, 90%, as above becoming very calcareous in part grading to limestone.
Shale, 10%, dark gray, hard subfissile, slightly calcareous.

1170-1173m Sandstone, 70%, white to light gray, very fine to fine grained, predominantly as above.
Limestone, 30%, white to light gray (70%), cryptocrystalline, moderately hard to hard, argillaceous, blocky, locally becoming sandy grading to sandstone, bluish-gray (30%), hard, crystalline, blocky, containing fossil fragments.

1173-1176m Limestone, 80%, as above.
Sandstone, 20%, as above.

1176-1185m Limestone, 100%, brown, firm to hard, microcrystalline, blocky, dirty, trace of fossil fragments, trace siltstone.

1185-1188m Limestone, light brown, light grey to dark brown, mottled, hard, microcrystalline, blocky, argillaceous, sandy in part, occasionally grading to siltstone.

1188-1197m Limestone, 90-100%, as above, locally light brown grading to
Sandstone, trace to 10%, very calcareous, fine grained, dirty, trace of calcite veining.

1197-1200m Limestone, 100%, as above, with abundant fossil fragments.

1200-1206m Limestone, 60%, as above, locally grading to siltstone.
Sandstone, 40%, white to light brown, very fine to fine, occasionally medium, poor to well sorted, angular to subangular, firm, friable, very calcareous, grading to sandy limestone.

1206-1209m Limestone, 90%, white, soft to hard, sandy, abundant pure calcite, occasionally mylonite.
Chert, 10%, clear to translucent, very hard, vitreous, brittle.

1209-1218m Sandstone, 100%, white, soft to firm, angular to subrounded, very fine to medium, friable, dominantly clear quartz, very calcareous cement; trace limestone; trace chert.

1218-1224m Sandstone, 50%, white, soft to firm, dominantly clean clear quartz grains, subangular to rounded, very fine to medium, friable in part, very calcareous cement, tight.
Limestone, 50%, blue-grey, hard cryptocrystalline, blocky, some white, sandy in part, soft to hard.

1224-1248m Sandstone, 80-100%, white to light grey, firm to hard, blocky, well cemented, very calcareous, very fine to fine, subangular to subrounded, moderately sorted, poor porosity, occasionally grading to Limestone and/or siltstone.
Limestone, 0-20%, white, hard, very sandy, occasionally light brown, trace chert.
Siltstone, dark brown, soft to hard, blocky, calcareous.

1248-1254m Limestone, 70-80%, light brown to dark brown, mottled, hard, microcrystalline to crystalline, trace of fossil fragments.
Siltstone, 10%, a/a.
Sandstone, 10-20%, white to light grey to light brown, hard, blocky, brittle, very well cemented, calcareous, argillaceous in part, very fine to fine, subangular to subrounded, poor to moderately sorted, tight.

1254-1257m Limestone, 60%, as above, with abundant fossil fragments.
Sandstone, 40%, as above.

1257-1260m Sandstone, 100%, clear, soft to firm, friable, very fine to fine, subangular to rounded, totally clean clear quartz, non to slightly calcareous cement, fair to moderate porosity, 15-25% pore space, good interconnection of pores.

1260-1263m Sandstone, 100%, white to light grey to light brown, hard, blocky, friable, very well cemented, calcareous cement, very fine to fine, subangular to subrounded, poor to moderate sorting, argillaceous in part, tight.

1263-1269m Sandstone, 90-100%, white to light grey, occasionally light brown, firm to moderately hard, occasionally hard, friable, blocky, dominantly clear quartz grains, very fine to fine, subangular, moderately sorted, moderately calcareous, occasionally becoming slightly argillaceous, grading in part to sandy siltstone, occasionally becoming very calcareous grading to limestone, poor to fair porosity, 20% dark yellow to orange fluorescence, no cut fluorescence.
Limestone, 0-10%, light to dark brown, mottled, as above.

1269-1275m Sandstone, 100%, clear to white to light grey, generally as above, non to slightly calcareous, poor porosity, no show, trace kaolin, white, soft.

1275-1278m Sandstone, 100%, white, hard, friable, non to slightly calcareous, clean clear quartz, poor porosity.

1278-1281m Sandstone, 100%, clear to white (60%), hard, friable, well cemented, as above, light brown to medium brown (40%), hard, occasionally very hard, angular, brittle, occasionally friable. locally becoming argillaceous, soft to firm.

1281-1287m Sandstone, 100%, white to clear, as above, poor porosity, non to slightly dolomitic.

1287-1293m Limestone, 100%, white to light brown to medium brown, firm to hard, brittle, crypotocrystalline; trace siltstone, trace sandstone.

1293-1296m Sandstone, 70%, white to light grey, very fine to fine, occasionally medium, angular to subrounded, dominantly clear quartz, firm to hard, non calcareous, locally moderately calcareous.

1296-1299m Sandstone, 70%, as above.
Limestone, 30%, brown, hard, dirty, microcrystalline, containing chert fragments.

1299-1302m Sandstone, 70%, clear to white, (50%), soft to hard, friable, clean clear quartz grains, very fine to fine, subrounded, moderately sorted, non-calcareous, fair porosity; light grey (50%), hard, blocky, tight, becoming light brown, silty grading to sandy siltstone.
Sandy Siltstone, 20%, light to dark brown, hard, slightly calcareous.
Chert, 10%, very dark brown, to black, very hard with conchoidal fracture.

1302-1305m Sandstone, 100%, generally as above, 50% white, 50% light to dark grey.

1305-1308m Sandy Siltstone, 60%, dark brown, occasionally light to dark brown, mottled, firm to hard, occasionally very hard, non calcareous/dolomitic, poor porosity, occasionally becoming fair, soft, dark brown siltstone locally grading to siltstone.
Siltstone, 10%, dark brown, hard.
Sandstone, 30%, light grey, hard, tight, as above.

1308-1311m Limestone, 50%, light to dark brown, mottled, moderately hard, subfissile, silty in part, cryptocrystalline.
Sandy Siltstone, 20%, as above.
Siltstone, 20%, as above.
Sandstone, 10%, clear, occasionally dark brown, soft to hard, grading to siltstone.

1311-1317m Sandstone, 85%, clear to white, soft to hard, blocky, very fine to fine, subrounded, moderately sorted, poor porosity, no show.
Siltstone, 10%, dark brown, as above, poor porosity.
Limestone, light to dark brown, mottled, as above.

1317-1326m	Sandstone, 90-100%, generally as above Limestone, 5%, as above. Siltstone, 5%, as above.
1326-1333m	Sandstone, 100%, clear to white, moderately hard, friable subfissile, very fine to fine grained, subangular, poor porosity.
1333m	Total Depth.

PRESSURE DATA INTERPRETATION

As on Kotaneelee E-37 a pressure data log was prepared at the wellsite during drilling. In this report, since the purpose of the well was different, and the depth of the well shallower, the report will be divided into three sections based on the three formations drilled: the Toad-Grayling, the Fantasque and the Mattson, plus an additional section on water flows in the well.

The log was drawn on a scale 1 cm = 30m (1:3000) and was divided into five vertical columns:
--Engineering Data/Corrected Drilling Exponent (Dxc)
--Flowline Temperature (T^oC)
--Gas/Mud Weight
--Engineering Data/Shale Density
--Lithology/Remarks

SECTION 1: The Toad-Grayling 300m - 749m

The diameter of the hole drilled was 215.9mm, and since this is of a much smaller diameter than on the previous two wells a faster drilling rate was to be expected. An average drill rate of 4 m/hr was achieved, and a good bit life meant only three bits were used to reach the Fantasque. All bits were in gauge, however, deviation problems were encountered, and a deviation of 8^o was recorded at 708m.

The Corrected Drilling Exponent (Dxc) in this section was of very limited value in this section as a good Shale trend was not established. Value of Dxc ranged from 0.93 to 1.44.

The Flowline Temperature plot gave value of between 17 and 27^oC. No sharp gains or losses are seen, except those associated with trips and surveys.

A small background gas down to 560 meters increased markedly on drilling into a Sandstone sequence and connection gases of 400 - 500 units were recorded in the lower half of the Toad-Grayling.

A water flow was noticed whilst tripping at 713 meters, a gain of 1 m^3/hr was recorded for 3 hours. The mud weight was 1085 kg/hr. The water is thought to be coming from the Sandstone/Siltstone sequence between 664m and 683m. These formations are tight and the flow is probably insignificant.

Shale density measurements ranged from 2.42 to 2.66 gm/cm^3 and are not continuous due to Sandstone and Siltstone beds.

SECTION 2: The Fantasque 749m - 950m

The Fantasque was drilled at a slower average rate of 1.45 m/hr. The lower Siltstone sequence tended to drill faster than the Chert sequence overlying it. Hole deviation was controlled over

this section, the deviation being brought back slowly to 5¼° at the top of the Mattson.

Tight hole was encountered at 285 meters, when running in the hole with NB #10 at 848 meters. 11 Joints had to be reamed. Mud weight was 1080 and viscosity 40.

The Dxc plot after an initial shift due to running a tooth bit, settled into a slight trend, which remained steady throughout the Fantasque.

The temperature plot showed no unusual increases or decreases.

Gas reading increased in the lower half of the Fantasque from 851m onwards. There being an average background gas of 100 to 200 units.

A small pit volume gain was noticed between 909 and 924 meters, and a flow of $0.5m^3$/hr. was estimated, in all $7.5m^3$ of water were gained. The mud weight was 1090 and viscosity 40. Some doubt is placed on the presence of this flow and it may be that it was not a flow but just a transfer of mud between tanks. It stopped unexpectedly at 924 meters.

Shale densities were not recorded in this section as no Shale was encountered.

Section 3: The Mattson 949m - 1332m

An average drilling rate of 1.40m/hr. was recorded throughout the Mattson. Many drilling breaks were encountered in the Sandstone and some water flows were also encountered associated with these drilling breaks. These are discussed further in a later section.

The Dxc plot was unable to determine any deviation away from the general trend established in the Fantasque until 1215 meters. At 1215 meters, there is a slight lessening of gradient which continues until 1326 meters. This trend is not clear due to a tooth bit which was run between 1205 and 1220 meters. However, for the bit run from 1220 to 1328m. (NB#16), a lessening of gradient can be detected especially at 1251 meters where there is a sharp deviation to the left, this is indicative of entering an overpressure zone. At 1256m, a water flow was detected in a Sandstone. Over lying the overpressure zone is a Limestone cap rock.

The flowline temperature plot shows a steady increase, which is broken by drops in the temperature at new bit runs. At 1254m, there is a slight decrease in temperature, this may be connected with the water flow detected at 1256 meters.

A larger background gas of around 100 units total gas was detected in the Mattson, due to the abundance of Sandstone and drilling in an underbalanced situation.

Water flows were encountered in the Mattson at 1003-1005 meters, 1136-1140 meters and 1256-1259 meters. These flows were allowed to flow until 1291 meters then the mud weight was increased from 1070 to 1200 kg/m^3. A further two flows were detected at 1308 and 1315 meters with a mud weight of 1175 and 1200 kg/m^3 respectively. On pulling out of the hole at 1328 meters a flow was detected 12 stands off bottom, after running back to bottom the mud weight was increased to 1350 kg/m^3, which effectively killed the flow. A shut in pressure of 1328 kPa (150 psi) was recorded for the flow, with an 1190 kg/m^3 mud weight.

Shale densities were not taken in the Mattson, as not enough Shale was drilled to establish a trend.

Sloughing Shales between 285 and 340 meters caused tight hole conditions throughout the hole, an increase in viscosity from 40 to 90 alleviated the problem.

SECTION 4: WATER FLOWS IN M-17

Two good water flows were recorded in this well, with another possible four flows, of less importance.

The first of the major flows occured at 1138.5 meters and appears to be associated with the drilling break from 1136 to 1138.4 meters. The drilling break occured in a very fine to fine grained Sandstone, almost silty in part with angular to subangular, occasionally rounded grains. There is an estimated 15% visible pore space, and fair intergranular porosity. An initial flow of 2½ m^3/hr. was recorded with a mud weight of 1065 kg/m^3. The Sandstone continued to flow at an average rate of 1.6 m^3/hr, for 7 days until another water flow at 1256m obscured this flow. A very calcareous Sandstone/Limestone sequence overlies this Sandstone. The Sandstone exhibits poor to fair porosity down to 1143 meters after which it once again becomes hard, tight with a calcareous cement. There is an estimated 2 to 3 meters of fair porosity Sandstone over the interval 1134 to 1146m.

The other major water flow occured at 1256 meters, a drilling break between 1256.2m and 1260.8m produced an increase in the flow rate from 1.6 m^3/hr. to 6 m^3/hr. A shut in pressure of 160 psi (1100 kPa) was recorded at 1259 meters. The drilling break occured in a Sandstone, very fine to coarse, angular to subrounded, composed totally of clean clear quartz grains. The Sandstone had a 15 to 25% visible pore space, showing fair to good intergranular porosity. the pores appeared to be well interconnected. Overlying this Sandstone, is a well cemented, very calcareous Sandstone, with up to 5% porosity. There is an estimated 2 meters of good porosity Sandstone over the interval 1256 to 1261 meters. This Sandstone continued to flow at 4 m^3/hr. until an increase in mud weight from 1070 to 1200 kg/m^3 at 1291 meters. A pressure test at 1285 meters gave a shut in pressure of 950 kPa (138psi) after 20 minutes.

Numerous drilling breaks occured in the section below 1260 meters and further water flows from these breaks may have been obscured by the major flow at 1256 meters. Drilling breaks of note are 1264-1267.5 meters, 1271.5 to 1275 meters and 1281 to 1285 meters. These all occured in Sandstones, often hard but friable with estimated porosities of up to 10%.

Another drilling break occured at 1300 to 1303.4 meters, with a mud weight of 1175 kg/m^3 a small flow of 1.5m^3/hr was detected. Considering the high mud weight this could prove to be another substantial water zone. The drilling break revealed interbedded clear and light to dark gray Sandstones. The clear Sandstone is soft, friable and has a fair porosity, the light to dark gray Sandstone appears tight. An increased mud weight of 1200 kg/m^3 stopped this flow.

A flow of 0.5 m^3/hr. was recorded at 1316 meters and is probably associated with the drilling break between 1313 and 1316 meters. Again, there appears to be an interbedded soft, clear Sandstone and harder, tight, gray Sandstone sequence. Mud weight was 1200 kg/m^3. A shut in pressure of 1034 kg/m^3 (150 psi) was recorded at 1325m, when a flow occured whilst tripping, mud weight was 1190 kg/m^3.

Other water flows in M-17 are one recorded whilst tripping at 713 meters of 1 m^3/hr for 3 hours.This is probably coming from the Sandstone/Siltstone sequence between 664 meters and 683 meters and is probably insignificant. Another occured between 909 and 924 meters where a flow of 0.5 m^3/hr. was recorded with a total increase in volume of 7½ m^3. There is some doubt whether this actually was a flow, it may have been a redistribution of mud in the mud tanks.

A flow rate of 1.6 m^3 in 10 minutes was recorded at 1005 meters, which is equivalent to 10 m^3/hr. However, there was no shut in pressure. A drilling break occured between 1003 and 1005 meters, the flow could possibly be coming from a calcareous Sandstone, which is generally tight, but locally becoming friable with poor to fair porosity. It is probably a small zone of no more than 0.5 meter, probably between 1003.4 and 1003.9 meters.

DISCUSSION

This well followed a similar pattern to the two previous wells, except in its much greater deviation. This is obviously due to the smaller diameter of the hole. Since the object of the well was to look for a porous Sandstone which might be used for water disposal, comparison of flows on H-38 and E-37 to those on M-17 may be of some help.

On both E-37 and H-38 water flows were encountered in the Toad-Grayling, Fantasque and Mattson. On E-37, a water flow at 1300 feet produced a drop in mud temperature of 10°C. At 2283 feet, a significant flow leading to a 120 barrel rise in volume was obtained, both of these flows occured above the Mattson, in the Toad-Grayling and Fantasque respectively. On H-38 a water flow was seen between 1100 and 1200 feet, an increase in mud weight from 9.1 to 9.6 ppg (1090 to 1150 kg/m^3) failed to hold the flow back and it was not stopped until it was finally held back by a mud weight of 9.9 ppg (1190 kg/m^3) at 1350 feet. A further flow was encountered between 1600 and 1850 feet.

At 2550 feet on H-38, there was a significant increase in gas, with an associated water flow, a 10.2 ppg (1220 kg/m^3) was being used, this flow continued until 2900 feet. After setting 13 3/8" casing on H-38 at 3025 feet, the mud weight was reduced to 9.2 ppg. With this weight, there was a slight water flow suggesting that the Lower Mattson also held a water zone of high pressure and low volume.

Correlation between H-38 and M-17 in the Mattson is good, M-17 being 1595 feet deeper than H-38 (or 486 meters), on H-38 the water flow between 1600 and 1850 feet correlates with the flow seen at 1005 meters whilst the flow at 2550 feet is close to the position of the flow at 1259 m. on M-17 (2550 feet is at the equivalent formation depth of 1275 meters on M-17). E-37 does not correlate at all.

The well I-27 is situated only 500 meters from M-17 and the well logs for the two wells are very similar. I-27's formations are 61 meters shallower. Unfortunately, no water flow information is available.