Re. Sukunka 77(3)(a). BP 41

663

S B R DENSITY
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 41 Sukunka 77
STATE B.C. COUNTRY Canada
Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No / Depth Scale	1 / 1:20		
Date	26 Sept 77		
First Reading	67m		
Last Reading	53m		
Interval Measured	1 detail		
Casing BPB			
Casing Driller	TD		
Depth Reached	98.2m		
Bottom Driller	102.4m		
Mud Nature	Quik-Gel		
S G / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to TD	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	1½ hrs.		
Truck No.	V24/34		
Recorded By	R Bishop		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples

Date / Sample No				
Depth — Driller				
Type Fluid in Hole				
Dens / Visc.				
ph / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp.	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source: Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm	Sonde No	Source Number
SBRD	1	det.	2¼	2	out	119	M5567

Hole logged through rods

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 41 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77(3)4

BPB

L . S . DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP-T-38 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev ____ Ft.
Log measured from Ground level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. | Depth Scale	1 20:1			
Date	14 Sept 77			
First Reading	104m			
Last Reading	0			
Interval Measured	3 Details			
Casing BPB rods	TD			
Casing Driller	-			
Depth Reached	104.40m			
Bottom Driller	105.15m			
Mud Nature	Water			
S.G. | Viscosity	-			
Bit Size 1	NQ to TD	to	to	
2	to	to	to	
3	to	to	to	
Casing Size 1	4" to	to	to	
2	NQ to TD	to	to	
Rm @ Meas Temp	@	@	@	
Rmf @ Meas Temp	@	@	@	
Rmc @ Meas Temp.	@	@	@	
BHT	-			
Operating Time	2 hrs			
Truck No.	V24/34			
Recorded By	P.J.Waters			
Witness	P.Raymant			

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REMARKS

Changes in Mud Type or Additional Samples
Date | Sample No.
Depth — Driller
Type Fluid in Hole
Dens. | Visc.
ph | Fluid Loss ml
Source of Sample
Rm @ Meas Temp. @ °F @ °F
Rmf @ Meas Temp @ °F @ °F
Rmc @ Meas Temp @ °F @ °F
Source Rmf | Rmc
Rm @ BHT @ °F @ °F
Rmf @ BHT @ °F @ °F
Rmc @ BHT @ °F @ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C Sec	Norm.	Sonde No	Source Number
LSD	3 Details		9	1/3	-	90	LS2

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP-T-38
FIELD Sukunka 77
COUNTY Canada STATE BC.

MY 41485 R

PR- SUKUNKA 77 (3) A

GAMMA RAY L.S. DENSITY
GENERAL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP-T-38 Sukunka 77
STATE British Columbia **COUNTRY** Canada

Permanent Datum Ground level **Elev** ____ **Ft.**
Log measured from Ground level **Ft. above P.D.**
Drilling measured from Rig Floor **Ft. above P.D.**

Run No / Depth Scale	1 / 200:1		
Date	14 Sept 77		
First Reading	104.40m		
Last Reading	0		
Interval Measured	104.40m		
Casing BPB rods	TD		
Casing Driller	–		
Depth Reached	104.40m		
Bottom Driller	105.15m		
Mud Nature	Water		
S G / Viscosity	–		
Bit Size 1	NQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	NQ to TD	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	–		
Operating Time	2 hrs		
Truck No.	V 24/34		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples			
Date / Sample No.			
Depth – Driller			
Type Fluid in Hole			
Dens. / Visc.			
ph. / Fluid Loss		ml	
Source of Sample			
Rm @ Meas Temp.	@ °F	@ °F	
Rmf @ Meas Temp.	@ °F	@ °F	
Rmc @ Meas Temp.	@ °F	@ °F	
Source Rmf / Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

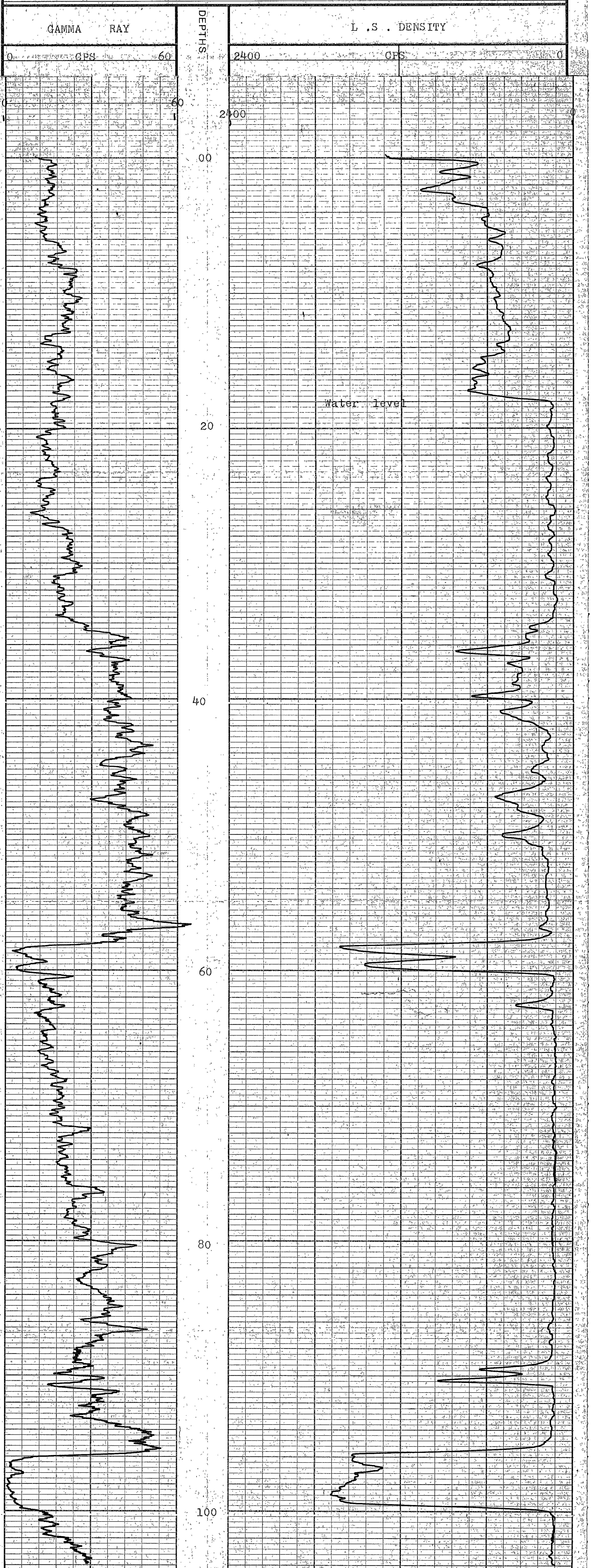
Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm	Sondé No	Source Number
Gamma	104	0	9	2	-	90	-
LSD	104	0	9	1	-	90	LS2



COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP-T-38
FIELD Sukunka 77
COUNTRY Canada STATE BC.

MY 41483 R

PR- SUKUNKA 77(3)A.

BPB

H . R . DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP-T-38 Sukunka 77
STATE British Columbia **COUNTRY** Canada

Permanent Datum Ground level **Elev** ____ Ft.
Log measured from Ground level Ft.above P.D.
Drilling measured from Rig Floor Ft.above P.D.

Run No | Depth Scale	1 | 20:1		
Date	14 Sept 77		
First Reading	104 m		
Last Reading	0		
Interval Measured	3 Details		
Casing BPB rods	TD		
Casing Driller	-		
Depth Reached	104.4Cm		
Bottom Driller	105.15m		
Mud Nature	Water		
S.G. | Viscosity	-		
Bit Size 1	NQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	NQ to TD	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	-		
Operating Time	2 hrs.		
Truck No	V 24/34		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.				
Depth — Driller					
Type Fluid in Hole					
Dens	Visc				
ph	Fluid Loss		ml		
Source of Sample					
Rm	@ Meas Temp	@	°F	@	°F
Rmf	@ Meas Temp.	@	°F	@	°F
Rmc	@ Meas Temp	@	°F	@	°F
Source. Rmf	Rmc				
Rm	@ BHT	@	°F	@	°F
Rmf	@ BHT	@	°F	@	°F
Rmc	@ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C Sec	Norm	Sonde No.	Source Number
HRD	3 Details		2¼	1	-	90	Hr2

	DEPTHS	H . R . DENSITY
		1800 CPS 800

	DEPTHS	1800 CPS 800
		H . R . DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP-T-38
FIELD Sukunka 77
COUNTRY Canada STATE BC.

MY 41485 R

PR-SUKUNKA 77(3)A

H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 28 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev.____m.
Log measured from Ground level m. above P.D.
Drilling measured from Top of casing m. above P.D.

GRID REF. E______ N______ RL______

Run No / Depth Scale	1 / 20:1		
Date	6 Sept 77		
First Reading	57.5m		
Last Reading	0		
Interval Measured	3 Details		
Casing BPB	12.5m		
Casing Driller	-		
Depth Reached	59.08m		
Bottom Driller	59.43m		
Mud Nature	Quik-Gel		
SG. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	1½ hrs		
Truck No	V 24/34		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No.				
Depth – Driller				
Type Fluid in Hole				
Dens. / Visc				
ph / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@ °F		@ °F	
Rmf @ Meas Temp	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source . Rmf / Rmc				
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm.	Sonde No	Source No
HRD	3 Details		2¼	1	-	90	Hr2

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 28 Sukunka 77
STATE British Columbia
COUNTRY Canada

PR-SUKUNKA 77(3)A

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SLS DENSITY GAMMA RAY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 28 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level m. above P.D.
Drilling measured from Top of casing m. above P.D.

GRID REF. E ____ N ____ R.L. ____

Run No	Depth Scale	1	20:1
Date		6 Sept 77	
First Reading		57.5 m	
Last Reading		0	
Interval Measured		2 Details	
Casing BPB		12.5 m	
Casing Driller		-	
Depth Reached		59.08m	
Bottom Driller		59.43m	
Mud Nature		Quik-Gel	
SG	Viscosity	-	
Bit Size	1	HQ to TD	to
	2	to	to
	3	to	to
Casing Size	1	4" to	to
	2	to	to
Rm @ Meas Temp.		@	@
Rmf @ Meas Temp.		@	@
Rmc @ Meas Temp.		@	@
BHT		-	
Operating Time		1½ hrs	
Truck No		V 24/34	
Recorded By		P.J. Waters	
Witness		P.Raymant	

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REMARKS ____

Changes in Mud Type or Additional Samples				
Date	Sample No			
Depth - Driller				
Type Fluid in Hole				
Dens	Visc.			
ph.	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp.		@ °F	@ °F	
Rmf @ Meas Temp		@ °F	@ °F	
Rmc @ Meas Temp		@ °F	@ °F	
Source. Rmf	Rmc			
Rm @ BHT		@ °F	@ °F	
Rmf @ BHT		@ °F	@ °F	
Rmc @ BHT		@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C. Sec	Norm.	Sonde No	Source No
Gamma	2 Details		2¼	2	1.36	119	-
SLSD	2 Details		2¼	1	0.70	119	M5567

DEPTHS

150 - - - - - - - API - - - - - - - 0
GAMMA RAY
S.L.S. DENSITY
6000 SDU 0

DEPTHS

150 API 0
GAMMA RAY
6000 - - - - - - SDU - - - - - - - 0
S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 28 Sukunka 77
STATE British Columbia
COUNTRY Canada

PR-SUKUNKA 77(3)A

S.B.R. DENSITY CALIPER
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 28 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Top of casing m. above P.D.

GRID REF E N R.L.

Run No / DepthScale	1 20:1		
Date	6 Sept 77		
First Reading	57.5m		
Last Reading	0		
Interval Measured	2 Details		
Casing BPB	12.5m		
Casing Driller	-		
Depth Reached	59.08m		
Bottom Driller	59.43m		
Mud Nature	Quik-Gel		
S.G / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	1½ hrs		
Truck No.	V24/34		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No	
Depth-Driller		
Type Fluid in Hole		
Dens.	Visc.	
ph.	Fluid Loss	ml
Source of Sample		
Rm @ Meas Temp	@	°F
Rmf @ Meas Temp.	@	°F
Rmc @ Meas Temp	@	°F
Source Rmf	Rmc	
Rm @ BHT	@	°F
Rmf @ BHT	@	°F
Rmc @ BHT	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm.	Sonde No	Source No
SBRD	2 Details		2¼	1	-	119	M 5567
Caliper	3 Details		2¼	1	-	119	-

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 28 Sukunka 77
STATE British Columbia
COUNTRY Canada

BP 29

PR-SUKUNKA 77(3)A

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GAMMA RAY SLS DENSITY
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ____ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. | Depth Scale	1 | 1:20		
Date	22 Sept 77		
First Reading	628m		
Last Reading	114m		
Interval Measured	11 details		
Casing BPB	49.8m		
Casing Driller	50.3m		
Depth Reached	641.8m		
Bottom Driller	641.6m		
Mud Nature	Quik-Gel		
S.G. | Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 50.3m	to	to
2	to	to	to
3	to	to	to
Rm @ Meas.Temp.	@	@	@
Rmf @ Meas.Temp	@	@	@
Rmc @ Meas.Temp.	@	@	@
BHT			
Operating Time	8 hrs.		
Truck No.	V24/34		
Recorded By	R.Bishop		
Witness			

fold here

REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth – Driller				
Type Fluid in Hole				
Dens	Visc.			
ph.	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp.	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source. Rmf | Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm	Sonde No	Source Number
Gamma	11	dets.	2¼	2	1.36	119	
SLSD	11	dets.	2¼	1	0.79	119	M5567

DEPTHS

150 API 0
GAMMA RAY
6000 SDU 0
SLS DENSITY

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485

R. Sukunka 77 (3) 4 BP-29

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GAMMA RAY SLS DENSITY CALIPER LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level ___ Ft. above P.D.
Drilling measured from Rig Floor ___ Ft. above P.D.

Run No.	Depth Scale 1	1:200	
Date	22 Sept 77		
First Reading	641m		
Last Reading	0		
Interval Measured	641m		
Casing BPB	46.3m		
Casing Driller	50.3m		
Depth Reached	641.8m		
Bottom Driller	641.6m		
Mud Nature	Quik-Gel		
S G / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 50.3m	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	8 hrs.		
Truck No.	V24/34		
Recorded By	R.Bishop		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples

Date / Sample No		
Depth — Driller		
Type Fluid in Hole		
Dens / Visc		
ph / Fluid Loss	ml	
Source of Sample		
Rm @ Meas Temp	@ °F	@ °F
Rmf @ Meas Temp.	@ °F	@ °F
Rmc @ Meas Temp.	@ °F	@ °F
Source Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm.	Sonde No.	Source Number
Gamma	640	0	9	1	1.36	119	
SLSD	641	0	9	0.3	0.79	119	M5567
Cal.	641	0	9	0.3	out	119	

GAMMA RAY	DEPTHS	SLS DENSITY	CALIPER
0 API 150		6000 SDU	0 7" 2"

CALIBRATION DATA

Jig No. 012 Value 400 @ 2" Diam.
Jig mark shown at above value ×0.3

CALIBRATION DATA

Jig Cal. date 25 Aug 77 Jig value 395 SDU @ 1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.79
6000 SDU o

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc

GAMMA RAY	DEPTHS	SLS DENSITY	CALIPER
0 API 150		6000 SDU	0 7" 2"

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77 (3)A

SONIC LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level ___ Ft. above P.D.
Drilling measured from Rig Floor ___ Ft. above P.D.

Run No. | Depth Scale	1 | 1:200		
Date	22 Sept 77		
First Reading	640m		
Last Reading	80m		
Interval Measured	560m		
Casing BPB	49.8m		
Casing Driller	50.3m		
Depth Reached	641.8m		
Bottom Driller	641.5m		
Mud Nature	Quik-Gel		
SG | Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 50.3m	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	8 hrs.		
Truck No	V24/34		
Recorded By	R.Bishop		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples				
Date | Sample No.				
Depth — Driller				
Type Fluid in Hole				
Dens | Visc.				
ph | Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp.	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source Rmf | Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T C sec	Norm	Sonde No.	Source Number
Sonic	640	80	9	1			

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77 (3)A

663

SONIC DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ____ Ft.
Log measured from Ground Level ____ Ft. above P.D.
Drilling measured from Rig Floor ____ Ft. above P.D.

Run No.	1		
Depth Scale	1:20		
Date	22 Sept 77		
First Reading	628m		
Last Reading	114m		
Interval Measured	11 details		
Casing BPB	49.8m		
Casing Driller	50.3m		
Depth Reached	641.8m		
Bottom Driller	641.6m		
Mud Nature	Quik-Gel		
S.G. / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 50.3m	to	to
2	to	to	to
3	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	8 hrs.		
Truck No.	V24/34		
Recorded By	R.Bishop		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth — Driller				
Type Fluid in Hole				
Dens	Visc			
ph.	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp		@ °F		@ °F
Rmf @ Meas Temp.		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T C. sec	Norm	Sonde No.	Source Number
Sonic	11 dets.		5	0.3			

DEPTHS

SONIC

956 CPS 273

956 CPS 273

DEPTHS

SONIC

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77(3)A

663

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
STATE B.C. COUNTRY Canada

H R DENSITY
DETAIL LOG

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. / Depth Scale	1 / 1:20		
Date	22 Sept 77		
First Reading	628m		
Last Reading	114m		
Interval Measured	11 details		
Casing BPB	49.8m		
Casing Driller	50.3m		
Depth Reached	641.8m		
Bottom Driller	641.6m		
Mud Nature	Quik-Gel		
S.G / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 50.3m	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	8 hrs.		
Truck No	V24/34		
Recorded By	R.Bishop		
Witness			

fold here

REMARKS

Changes in Mud Type or Additional Samples		
Date / Sample No		
Depth — Driller		
Type Fluid in Hole		
Dens / Visc		
ph / Fluid Loss	ml	
Source of Sample		
Rm @ Meas Temp.	@ °F	@ °F
Rmf @ Meas Temp.	@ °F	@ °F
Rmc @ Meas Temp	@ °F	@ °F
Source. Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T C sec	Norm	Sonde No.	Source Number
HRD	11 dets.		2¼	1	out	90	HR2

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77(3)A.

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SBR DENSITY CALIPER
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. / Depth Scale	1 1:20		
Date	22 Sept 77		
First Reading	628m		
Last Reading	114m		
Interval Measured	11 details		
Casing BPB	49.8m		
Casing Driller	50.3m		
Depth Reached	641.8m		
Bottom Driller	641.6m		
Mud Nature	Quik-Gel		
S.G. Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3		to	to
Casing Size 1	4" to 50.3m	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	8 hrs.		
Truck No.	V24/34		
Recorded By	R.Bishop		
Witness			

fold here

REMARKS

Changes in Mud Type or Additional Samples		
Date Sample No		
Depth — Driller		
Type Fluid in Hole		
Dens. Visc.		
ph Fluid Loss	ml	
Source of Sample		
Rm @ Meas Temp.	@ °F	@ °F
Rmf @ Meas Temp.	@ °F	@ °F
Rmc @ Meas Temp	@ °F	@ °F
Source Rmf Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C sec	Norm	Sonde No.	Source Number
SBRD	11 dets.		2¼	1	out	119	M5567
Cal.	11 dets.		2¼	1	out	119	

CALIPER | DEPTHS | S B R DENSITY

7" 2" | | 700 CPS 350

7" 2" | | 700 CPS 350

CALIPER | DEPTHS | S B R DENSITY

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 29 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

Re-SUKUNKA 77(3)A

BPB

GAMMA RAY SLS DENSITY
GENERAL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 30 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level ___ Ft. above P.D.
Drilling measured from Rig Floor ___ Ft. above P.D.

Run No. / Depth Scale	1 / 1:200		
Date	23 Sept 77		
First Reading	684m		
Last Reading	0		
Interval Measured	684m		
Casing BPB			
Casing Driller			
Depth Reached	694.8m		
Bottom Driller	695.2m		
Mud Nature	Quik-Gel		
S.G. / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to TD	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	4 hrs.		
Truck No	Y24/34		
Recorded By	R. Bishop		
Witness			

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fold here

REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No				
Depth — Driller				
Type Fluid in Hole				
Dens. / Visc				
ph. / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source. Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C sec	Norm	Sonde No.	Source Number
Gamma	683	0	9	1	out	119	
SLSD	684	0	9	1	out	119	M5567

Hole logged through rods

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 30 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

BP-30

R-SUKUNKA 77 (3)A

663

BPB

H R DENSITY

DETAIL LOG

COMPANY BP Canada Ltd - Coal Group

BOREHOLE BP # 30 Sukunka 77

STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ____ Ft.

Log measured from Ground Level Ft. above P.D.

Drilling measured from Rig Floor Ft. above P.D.

Run No.	Depth Scale	1	1:20	
Date		23 Sept 77		
First Reading		681m		
Last Reading		297m		
Interval Measured		6 details		
Casing BPB				
Casing Driller				
Depth Reached		604.8m		
Bottom Driller		695.2m		
Mud Nature		Quik-Gel		
S.G.	Viscosity			
Bit Size 1		HQ to TD	to	to
2		to	to	to
3		to	to	to
Casing Size 1		HQ to TD	to	to
2		to	to	to
Rm @ Meas Temp.		@	@	@
Rmf @ Meas Temp.		@	@	@
Rmc @ Meas Temp.		@	@	@
BHT				
Operating Time		4 hrs.		
Truck No		V24/34		
Recorded By		R.Bishop		
Witness				

fold here

REMARKS

Changes in Mud Type or Additional Samples					
Date	Sample No.				
Depth — Driller					
Type Fluid in Hole					
Dens	Visc.				
ph	Fluid Loss		ml		
Source of Sample					
Rm @ Meas Temp		@	°F	@	°F
Rmf @ Meas Temp.		@	°F	@	°F
Rmc @ Meas Temp.		@	°F	@	°F
Source Rmf	Rmc				
Rm @ BHT		@	°F	@	°F
Rmf @ BHT		@	°F	@	°F
Rmc @ BHT		@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm	Sonde No	Source Number
HRD	6 dets.		2¼	1	out	119	HR2

Hole logged through rods above 342m

COMPANY BP Canada Ltd - Coal Group

BOREHOLE BP # 30 Sukunka 77

FIELD

COUNTY B.C. STATE Canada

MY-41485-R

PR-SUKUNKA 77(3)A

BPB

S B R DENSITY
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 30 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No / Depth Scale	1 1:20		
Date	23 Sept 77		
First Reading	681m		
Last Reading	297m		
Interval Measured	6 details		
Casing BPB			
Casing Driller			
Depth Reached	694.8m		
Bottom Driller	695.2m		
Mud Nature	Quik-Gel		
S.G / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to TD	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	4 hrs.		
Truck No.	V24/34		
Recorded By	R.Bishop		
Witness			

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fold here

REMARKS

Changes in Mud Type or Additional Samples		
Date		
Sample No		
Depth – Driller		
Type Fluid in Hole		
Dens. / Visc.		
ph / Fluid Loss	ml	
Source of Sample		
Rm @ Meas Temp	@ °F	@ °F
Rmf @ Meas Temp	@ °F	@ °F
Rmc @ Meas Temp.	@ °F	@ °F
Source Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes			
Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data			
Run No	Tool Type	Tool Position	Other

Logging Data							
Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm	Sonde No.	Source Number
SBRD	6 dets.		2½	2	out	119	M5567

Hole Logged through drill rods

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 30 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77(3)A

GAMMA RAY SLS DENSITY DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 30 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. | Depth Scale	1 | 1:20		
Date	23 Sept 77		
First Reading	681m		
Last Reading	297m		
Interval Measured	6 details		
Casing BPB			
Casing Driller			
Depth Reached	604.8m		
Bottom Driller	605.2m		
Mud Nature	Quik-Gel		
S.G. | Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to TD	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	4 hrs.		
Truck No.	V24/34		
Recorded By	R.Bishop		
Witness			

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fold here

REMARKS

Changes in Mud Type or Additional Samples

Date | Sample No			
Depth — Driller			
Type Fluid in Hole			
Dens. | Visc.			
ph | Fluid Loss		ml	
Source of Sample			
Rm @ Meas Temp	@ °F		@ °F
Rmf @ Meas Temp.	@ °F		@ °F
Rmc @ Meas Temp	@ °F		@ °F
Source Rmf | Rmc			
Rm @ BHT	@ °F		@ °F
Rmf @ BHT	@ °F		@ °F
Rmc @ BHT	@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T C. sec	Norm	Sonde No.	Source Number
Gamma	6 dets.		2¼	2	out	119	
SLSD	6 dets.		2¼	1	out	119	M5567

Hole logged through rods

DEPTHS

90 CPS 0
GAMMA RAY
SLS DENSITY
3000 CPS 0

DEPTHS

90 CPS 0
GAMMA RAY
3000 CPS 0
SLS DENSITY

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 30 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77(3)A.

S.L.S. DENSITY
S.B.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP# 2a SUKUNKA 77 (Diversion)
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 1 m. above P.D.

GRID REF. E N RL

Run No / DepthScale	1 / 20:1			
Date	27.7.77			
First Reading	378 m			
Last Reading	372 m			
Interval Measured	6 m			
Casing BPB	-			
Casing Driller	-			
Depth Reached	382.48			
Bottom Driller	384.75			
Mud Nature	Quik - Gel			
SG. / Viscosity	-			
Bit Size 1	HQ to TD	to	to	
2	to	to	to	
3	to	to	to	
Casing Size 1	- to	to	to	
2	to	to	to	
Rm @ Meas Temp.	- @	@	@	
Rmf @ Meas Temp	@	@	@	
Rmc @ Meas Temp.	@	@	@	
BHT	-			
Operating Time	2½ hrs			
Truck No	RV28/42			
Recorded By	P.J.Waters			
Witness	A.Chowdry			

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fold here

REMARKS T.G.L. add 20 cms. (SLSD)

Changes in Mud Type or Additional Samples		
Date	Sample No	
Depth - Driller		
Type Fluid in Hole		
Dens.	Visc.	
ph	Fluid Loss	ml
Source of Sample		
Rm @ Meas.Temp.	@ °F	@ °F
Rmf @ Meas.Temp	@ °F	@ °F
Rmc @ Meas.Temp	@ °F	@ °F
Source Rmf	Rmc	
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	TC Secs	Norm.	SondeNo	Source No
SLSD	378	322	3	1	0.80	119	M5567
SBRD	378	373	3	1	-	119	M5567
Caliper	378	373	3	1	-	119	-

COMPANY B.P. Canada Ltd-Coal Group
BOREHOLE BP#2a SUKUNKA 77 (Diversion)
STATE BRITISH COLUMBIA
COUNTRY CANADA

MY (B) 38360 E

PR-SUKUNKA 77(3)4.

S.L.S. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP#2 SUKUNKA 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E N R.L.

Run No	I		
Depth Scale	20:1		
Date	20.7.77		
First Reading	670 m		
Last Reading	I m		
Interval Measured	II Details		
Casing BPB	II m		
Casing Driller	40'		
Depth Reached	671 m		
Bottom Driller	220I'		
Mud Nature	QUIK - GEL		
SG / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4½" to 40'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	8 hrs		
Truck No.	RV28/42		
Recorded By	P.J. Waters		
Witness	A. Bowler		

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fold here

REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.		
Depth – Driller			
Type Fluid in Hole			
Dens	Visc		
ph.	Fluid Loss ml		
Source of Sample			
Rm @ Meas. Temp.		@ °F	@ °F
Rmf @ Meas. Temp.		@ °F	@ °F
Rmc @ Meas. Temp		@ °F	@ °F
Source . Rmf	Rmc		
Rm @ BHT		@ °F	@ °F
Rmf @ BHT		@ °F	@ °F
Rmc @ BHT		@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	TC Sec	Norm.	Sonde No	Source No
SLSD	II Details		3	I	0.76	II9	M5567

DEPTHS | S.L.S. DENSITY
6000 SDU 0

DEPTHS | 6000 SDU 0
S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP#2 SUKUNKA 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

MY (8) 5836

PR-SUKUNKA 77 (3)A.

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BPB

S.B.R. DENSITY CALIPER
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP#2 SUKUNKA 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E N R.L.

Run No	I		
DepthScale	20:I		
Date	20.7.77		
First Reading	670 m		
Last Reading	I m		
Interval Measured	II Details		
Casing-BPB	II m		
Casing Driller	40'		
Depth Reached	671 m		
Bottom Driller	220I'		
Mud Nature	QUIK-GEL		
S.G.			
Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4½" to 40'	to	to
2	to	to	to
3	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	8 hrs		
Truck No	RV28/42		
Recorded By	P.J. Waters		
Witness	A. Bowler		

fold here

REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth-Driller				
Type Fluid in Hole				
Dens / Visc.				
ph / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp		@ °F		@ °F
Rmf @ Meas Temp		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source Rmf / Rmc				
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm	Sonde No	Source No
SBRD	II Details		3	I	-	II9	M5567
Caliper	II Details		3	I	-	II9	-

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP#2 SUKUNKA 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

MY (8) 58360 R

PR-SUKUNKA 77(3)A

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SBR DENSITY CALIPER
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 16 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor 0.6 m. above P.D.

GRID REF. E ____ N ____ RL ____

Run No	1		
DepthScale	20:1		
Date	31 Aug 77		
First Reading	610 m		
Last Reading	0		
Interval Measured	9 Details		
Casing BPB	39 m		
Casing Driller	130'		
Depth Reached	611 m		
Bottom Driller	611.12 m		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 130'	to	to
2	to	to	to
Rm. @ Meas Temp	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5¼ hrs		
Truck No.	RV 28/42		
Recorded By	F.J. Waters		
Witness	P. Raymant		

fold here

REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No.				
Depth-Driller				
Type Fluid in Hole				
Dens / Visc				
ph. / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp.	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C. Sec	Norm	Sonde No	Source No
SBRD	9 Details		2¼	1	-	119	M5567
Caliper	" " " " " "		2¼	1	-	119	-

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 16 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

BP- SUKUNKA 77 (3/3)
BP. 16.

663

GAMMA RAY SLS DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 16 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.6 m. above P.D.

GRID REF. E N RL

Run No	1	
Depth Scale	20:1	
Date	31 Aug 77	
First Reading	610 m	
Last Reading	0	
Interval Measured	9 Details	
Casing Driller	30 m	
Casing BPB	130'	
Depth Reached	611 m	
Bottom Driller	611.12m	
Mud Nature	Quik-Gel	
SG	-	
Viscosity	-	
Bit Size 1	HQ to TD	to
2	to	to
3	to	to
Casing Size 1	4" to 130'	to
2	to	to
3	to	to
Rm @ Meas Temp	@	@
Rmf @ Meas Temp	@	@
Rmc @ Meas Temp	@	@
BHT	-	
Operating Time	5½ hrs	
Truck No.	RV 28/42	
Recorded By	P.J. Waters	
Witness	P.Raymant	

fold here

REMARKS

Changes in Mud Type or Additional Samples			
Date	Sample No.		
Depth - Driller			
Type Fluid in Hole			
Dens	Visc		
ph	Fluid Loss	ml	
Source of Sample			
Rm @ Meas Temp	@ °F	@ °F	
Rmf @ Meas Temp	@ °F	@ °F	
Rmc @ Meas Temp	@ °F	@ °F	
Source: Rmf	Rmc		
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm.	Sonde No.	Source No
Gamma	9 Details		2¼	2	1.36	119	-
SLSD	9 Details		2¼	1	0.77	119	M5567

DEPTHS

150 GAMMA API RAY 0
S.L.S. DENSITY
6000 SDU 0

DEPTHS

150 API 0
GAMMA RAY
6000 SDU 0
S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 16 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58340

R-SUKUNKA 77 (3)A

S.L.S. DENSITY GAMMA RAY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 17 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground Level Elev ____ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. | Depth Scale	1 | 20:1		
Date	26 Aug 77		
First Reading	410 m		
Last Reading	0		
Interval Measured	5 Details		
Casing BPB	35m		
Casing Driller	-		
Depth Reached	412 m		
Bottom Driller	411.78 m		
Mud Nature	Quik-Gel		
S.G. | Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	4½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples				
Date | Sample No				
Depth – Driller				
Type Fluid in Hole				
Dens. | Visc.				
ph. | Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp.	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source: Rmf | Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm	Sonde No.	Source Number
Gamma	5 Details		2¼	2	1.36	119	-
SLSD	5 Details		2¼	1	0.78	119	M5567

DEPTHS		
	150 GAMMA RAY API	0
	6000 S.L.S. DENSITY SDU	0

DEPTHS		
	150 GAMMA RAY API	0
	6000 S.L.S. DENSITY SDU	0

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 17 Sukunka 77
~~FIELD~~ British Columbia
COUN~~TY~~try Canada STATE ____

MY 41485 R

PR-SUKUNKA 77(3)A.

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S.B.R. DENSITY CALIPER
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 17 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev ___ Ft.
Log measured from Ground level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No.	Depth Scale	1 20:1		
Date		26 Aug 77		
First Reading		410 m		
Last Reading		0		
Interval Measured		410m		
Casing BPB		35 m		
Casing Driller		-		
Depth Reached		412 m		
Bottom Driller		411.78 m		
Mud Nature		Quik-Gel		
S.G.	Viscosity	-		
Bit Size	1	HQ to td	to	to
	2	to	to	to
	3	to	to	to
Casing Size	1	4" to	to	to
	2	to	to	to
Rm @ Meas Temp.		@	@	@
Rmf @ Meas Temp.		@	@	@
Rmc @ Meas Temp.		@	@	@
BHT		-		
Operating Time		4½ hrs.		
Truck No.		RV 28/42		
Recorded By		P.J.Waters		
Witness		P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples				
Date	Sample No.			
Depth — Driller				
Type Fluid in Hole				
Dens.	Visc			
ph.	Fluid Loss		ml	
Source of Sample				
Rm @ Meas Temp		@ °F		@ °F
Rmf @ Meas Temp		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source. Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C. Sec	Norm.	Sonde No.	Source Number
SBRD	5 Details		2¼	1	-	119	M5567
Caliper	" " " "		2¼	1	-	119	-

CALIPER	DEPTHS	S.B.R. DENSITY	
7" ---------- 2"		680	CPS 360

7" ---------- 2"	DEPTHS	680	CPS 360
CALIPER		S.B.R. DENSITY	

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 17 Sukunka 77
~~FIELD~~ British Columbia
COUNTRY Canada STATE

PR-SUKUNKA 77 (3) A

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GAMMA RAY SLS DENSITY
CALIPER LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 20 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ____ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No.	Depth Scale 1	1:200		
Date	19 Sept 77			
First Reading	700m			
Last Reading	0			
Interval Measured	700m			
Casing BPB				
Casing Driller	609.6m			
Depth Reached	701.2m			
Bottom Driller	701.9m			
Mud Nature	Quik-Gel			
S.G. / Viscosity				
Bit Size 1	HQ to TD	to	to	to
2	to	to	to	to
3	to	to	to	to
Casing Size 1	HQ to 609.6	to	to	to
2	to	to	to	to
Rm @Meas Temp.	@	@	@	
Rmf @Meas Temp.	@	@	@	
Rmc @Meas Temp.	@	@	@	
BHT				
Operating Time	6 hrs.			
Truck No.	V24/34			
Recorded By	P. Waters			
Witness				

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REMARKS

Changes in Mud Type or Additional Samples			
Date / Sample No.			
Depth — Driller			
Type Fluid in Hole			
Dens. / Visc.			
ph. / Fluid Loss		ml	
Source of Sample			
Rm @ Meas Temp.	@ °F	@ °F	
Rmf @ Meas Temp.	@ °F	@ °F	
Rmc @ Meas Temp.	@ °F	@ °F	
Source: Rmf / Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm.	Sonde No.	Source Number
Gamma	700	0	9	2	1.36	119	
SLSD	701	0	9	0.3	0.80	119	M5567
Cal.	701	618	9	1	out	119	

Hole logged through rods above 618m
Density graticule only applies below 610m.

GAMMA RAY	DEPTHS	SLS DENSITY	CALIPER
0 API 150		6000 0	7" 2"

CALIBRATION DATA

Jig No. 012 Value 100 @2"Diam.
Jig mark shown at above value ±0.3

CALIBRATION DATA

Jig Cal. date 25 Aug 77 Jig value 395 SDU @1.47 gr/cc
Jig No. 011 Span 0.50 NORM SDU/CPS = 0.80
6000 SDU 0

GAMMA RAY	DEPTHS	SLS DENSITY	CALIPER
0 API 150		6000 SDU 0	7" 2"

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 20 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-Sukunka 77(3)A.

SBR DENSITY CALIPER
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 20 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No / Depth Scale	1 / 1:20		
Date	19 Sept 77		
First Reading	698m		
Last Reading	249m		
Interval Measured	9 details		
Casing BPB			
Casing Driller	609.6m		
Depth Reached	701.2m		
Bottom Driller	701.9m		
Mud Nature	Quik-Gel		
S.G. / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to 609.6m	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	6 hrs.		
Truck No.	V24/34		
Recorded By	P.Waters		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples				
Date	Sample No			
Depth — Driller				
Type Fluid in Hole				
Dens.	Visc			
ph	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp	@ °F		@ °F	
Rmf @ Meas Temp.	@ °F		@ °F	
Rmc @ Meas Temp.	@ °F		@ °F	
Source: Rmf	Rmc			
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T C sec	Norm	Sonde No	Source Number
SBRD	9 dets.		2¼	2	out	119	M5567
Cal.	9 dets.		2¼	1	out	119	

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 20 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 4185 R

PR-SUKUNKA 77(3)A

GAMMA RAY SLS DENSITY
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 20 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. / Depth Scale	1 / 1:20		
Date	19 Sept 77		
First Reading	698m		
Last Reading	249m		
Interval Measured	9 details		
Casing BPB			
Casing Driller	609.6m		
Depth Reached	701.2m		
Bottom Driller	701.9m		
Mud Nature	Quik-Gel		
S G / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to 609.6	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	6 hrs.		
Truck No.	V24/34		
Recorded By	P. Waters		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples					
Date					
Depth — Driller					
Type Fluid in Hole					
Dens. / Visc					
ph / Fluid Loss		ml			
Source of Sample					
Rm @ Meas Temp	@ °F	@ °F			
Rmf @ Meas Temp	@ °F	@ °F			
Rmc @ Meas Temp.	@ °F	@ °F			
Source: Rmf / Rmc					
Rm @ BHT	@ °F	@ °F			
Rmf @ BHT	@ °F	@ °F			
Rmc @ BHT	@ °F	@ °F			

Scale Changes				
Type Log	Depth	Scale Up Hole	Scale Down	

Equipment Data			
Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C sec	Norm.	Sonde No.	Source Number
Gamma	9 dets.		2¼	2	1.36	119	
SLSD	9 dets.		2¼	1	0.80	119	M5567

Hole logged through rods above 618m

GAMMA RAY
API
SLS DENSITY
CPS

GAMMA RAY	API
150	0
SLS DENSITY	SDU
6000	0
DEPTHS	

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 20 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77(3)A.

BP 20

H R DENSITY
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 20 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No	Depth Scale	1	1:20	
Date		10 Sept 77		
First Reading		700m		
Last Reading		649m		
Interval Measured		4 details		
Casing BPB				
Casing Driller		609.5m		
Depth Reached		701.2m		
Bottom Driller		701.9m		
Mud Nature		Quik-Gel		
S.G.	Viscosity			
Bit Size 1		HQ to TD	to	to
2		to	to	to
3		to	to	to
Casing Size 1		HQ to 609.6m	to	to
2		to	to	to
Rm @ Meas Temp		@	@	@
Rmf @ Meas Temp		@	@	@
Rmc @ Meas Temp		@	@	@
BHT				
Operating Time		6 hrs.		
Truck No		V24/34		
Recorded By		P. Waters		
Witness				

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth — Driller				
Type Fluid in Hole				
Dens.	Visc			
ph.	Fluid Loss		ml	
Source of Sample				
Rm @ Meas Temp		@ °F	@ °F	
Rmf @ Meas Temp.		@ °F	@ °F	
Rmc @ Meas Temp.		@ °F	@ °F	
Source. Rmf	Rmc			
Rm @ BHT		@ °F	@ °F	
Rmf @ BHT		@ °F	@ °F	
Rmc @ BHT		@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T C. sec	Norm	Sonde No	Source Number
HRD	4 dets.		2¼	1	out	119	HR2

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 20 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

PR-SUKUNKA 77(3)A

GAMMA RAY SLS DENSITY
CALIPER GENERAL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No.	1		
Depth Scale	1:200		
Date	17 Sept 77		
First Reading	707m		
Last Reading	0		
Interval Measured	707m		
Casing BPB	9.8m		
Casing Driller	10.7m		
Depth Reached	707.3m		
Bottom Driller	707.4m		
Mud Nature	Quik-Gel		
S.G. / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas.Temp.	@	@	@
Rmf @ Meas.Temp.	@	@	@
Rmc @ Meas.Temp.	@	@	@
BHT			
Operating Time	10 hrs.		
Truck No.	V 24/34		
Recorded By	R. Waters		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples		
Date / Sample No.		
Depth – Driller		
Type Fluid in Hole		
Dens / Visc		
ph / Fluid Loss	ml	
Source of Sample		
Rm @ Meas Temp.	@ °F	@ °F
Rmf @ Meas Temp.	@ °F	@ °F
Rmc @ Meas Temp.	@ °F	@ °F
Source Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C sec	Norm	Sonde No	Source Number
Gamma	706	0	9	2	1.36	119	
SLSD	707	0	9	0.3	0.80	119	M5567
Cal	707	0	9	1		119	

GAMMA RAY	DEPTHS	SLS DENSITY	CALIPER
0 API 150		6000 SDU	0 7" 2"

CALIBRATION DATA

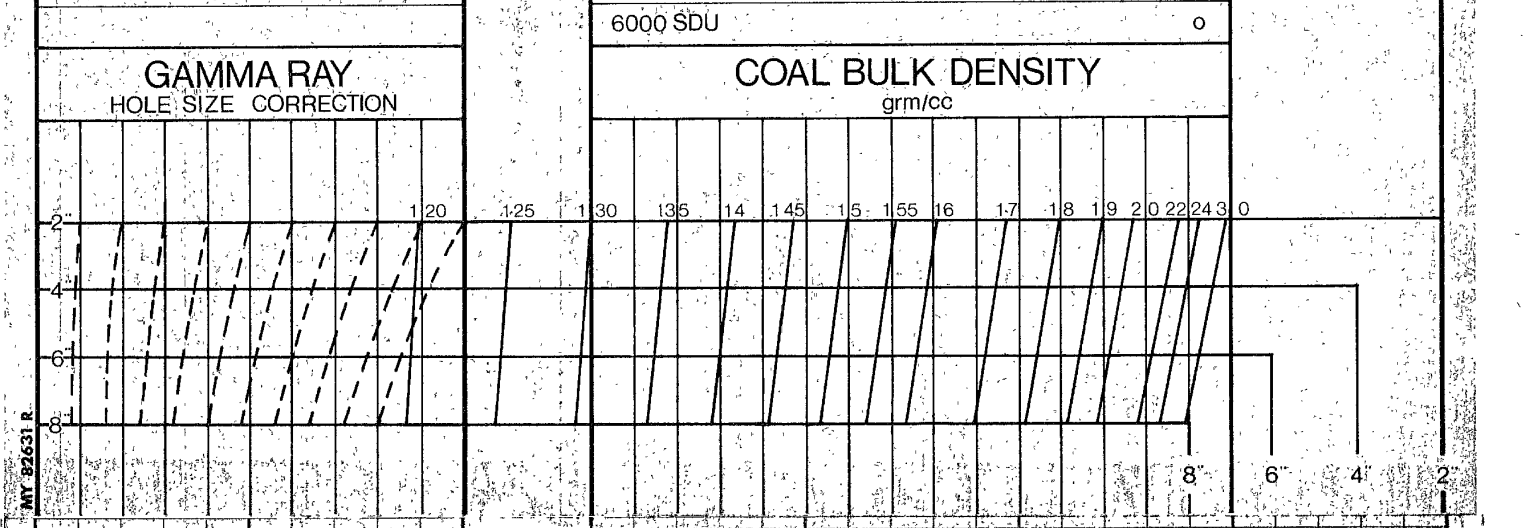
Jig No. 012 Value 400 @2" Diam.
Jig mark shown at above value x03

CALIBRATION DATA

Jig Cal. date 25 Aug 77 Jig value 395 SDU @1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.80
6000 SDU

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc



GAMMA RAY	DEPTHS	SLS DENSITY	CALIPER
0 API 150		6000 SDU	0 7" 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka 77
FIELD Sukunka 77
COUNTY B.C. STATE Canada

MY 41485 R

BP-SUKUNKA 77 (3) 4

B4 21

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COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka 77
STATE B.C. **COUNTRY** Canada

H.R.DENSITY
DETAIL LOG

Permanent Datum Ground Level **Elev** ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No.	Depth Scale	1 1:20		
Date		17 Sept 77		
First Reading		676m		
Last Reading		189m		
Interval Measured		9 details		
Casing BPB		9.8m		
Casing Driller		10.7m		
Depth Reached		707.3m		
Bottom Driller		707.4m		
Mud Nature		Gulf-Gel		
S.G.	Viscosity			
Bit Size 1		HQ to TD	to	to
2		to	to	to
3		to	to	to
Casing Size 1		to	to	to
2		to	to	to
3		to	to	to
Rm @ Meas Temp.		@	@	@
Rmf @ Meas Temp.		@	@	@
Rmc @ Meas Temp.		@	@	@
BHT				
Operating Time		10 hrs.		
Truck No		V24/34		
Recorded By		P. Waters		
Witness				

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REMARKS

Changes in Mud Type or Additional Samples				
Date	Sample No			
Depth — Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss		ml	
Source of Sample				
Rm @ Meas Temp		@ °F		@ °F
Rmf @ Meas Temp.		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source: Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C sec	Norm.	Sonde No	Source Number
HRD	9 dets.		2¼	1		90	Hr2

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka
FIELD
COUNTY B.C. **STATE** Canada

MY 41485 R

BP-SUKUNKA 77(3)A

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GAMMA RAY SLS DENSITY DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level ___ Ft. above P.D.
Drilling measured from Rig Floor ___ Ft. above P.D.

Run No.	1		
Depth Scale	1:20		
Date	17 Sept 77		
First Reading	675m		
Last Reading	189m		
Interval Measured	9 details		
Casing BPB	9.8m		
Casing Driller	10.7m		
Depth Reached	707.3m		
Bottom Driller	707.4m		
Mud Nature	Quik-Gel		
S.G. | Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
3	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	10 hrs.		
Truck No.	V24/34		
Recorded By	P. Waters		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.		
Depth – Driller			
Type Fluid in Hole			
Dens.	Visc.		
ph.	Fluid Loss ml		
Source of Sample			
Rm @ Meas Temp	@ °F	@ °F	
Rmf @ Meas Temp	@ °F	@ °F	
Rmc @ Meas Temp	@ °F	@ °F	
Source: Rmf Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

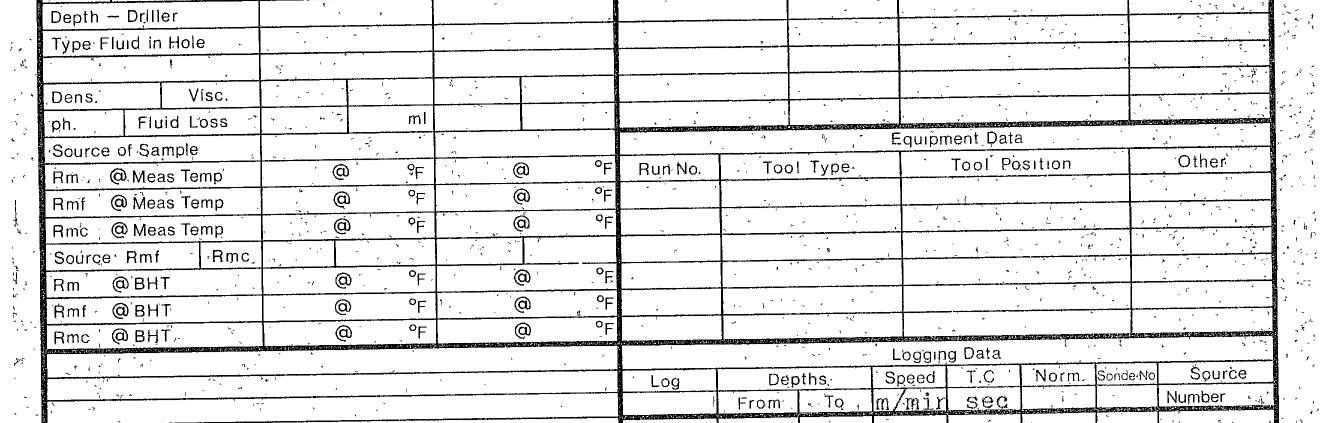
Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C sec	Norm.	Sonde No	Source Number
Gamma	9 dets		2¼	1	1.36	119	
SLSD	9 dets		2¼	1	0.80	119	M5567

	DEPTHS	
		150 GAMMA RAY API 0
		6000 SLS DENSITY SDU 0



	DEPTHS	
		150 API 0 GAMMA RAY
		6000 SDU 0 SLS DENSITY

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485-R

PR-SUKUNKA 77(3)A

663

SONIC
GENERAL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka 77
STATE B.C. COUNTRY Canada
Permanent Datum Ground Level Elev ____ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No	1		
Depth Scale	1:200		
Date	12 Sept 77		
First Reading	706m		
Last Reading	0		
Interval Measured	706m		
Casing BPB	9.8m		
Casing Driller	16.2m		
Depth Reached	707.3m		
Bottom Driller	707.4m		
Mud Nature	Quik-Gel		
S.G | Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
3			
Rm @ Meas. Temp.	@	@	@
Rmf @ Meas. Temp.	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time.	10 hrs.		
Truck No	V24/34		
Recorded By	P. Waters		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth — Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss		ml	
Source of Sample				
Rm @ Meas Temp		@ °F		@ °F
Rmf @ Meas Temp.		@ °F		@ °F
Rmc @ Meas Temp.		@ °F		@ °F
Source: Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C sec	Norm	Sonde No	Source Number
Sonic	706	0	9	2			

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP #21 Sukunka
FIELD
COUNTY B.C. STATE Canada

MY 41485-R

PR-SUKUNKA 77(3)A.
BP-21

SONIC
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev. ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. / Depth Scale	1 1:20		
Date	17 Sept 77		
First Reading	676m		
Last Reading	189m		
Interval Measured	9 details		
Casing BPB	9.8m		
Casing Driller	10.7m		
Depth Reached	707.3m		
Bottom Driller	707.4m		
Mud Nature	Quik-Gel		
S.G. / Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	10 hrs		
Truck No	V24/34		
Recorded By	P. Waters		
Witness			

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fold here

REMARKS

Changes in Mud Type or Additional Samples		
Date / Sample No		
Depth – Driller		
Type Fluid in Hole		
Dens. / Visc		
ph. / Fluid Loss	ml	
Source of Sample		
Rm @ Meas Temp	@ °F	@ °F
Rmf @ Meas Temp.	@ °F	@ °F
Rmc @ Meas Temp	@ °F	@ °F
Source Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C sec	Norm.	Sonde No	Source Number
Sonic	9 dets.		5	1			

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP #21 Sukunka
FIELD
COUNTY B.C. STATE Canada

MY 41485 R

PR-SUKUNKA 77(3)A

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SBR DENSITY CALIPER
DETAIL LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka '77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level ___ Ft. above P.D.
Drilling measured from Floor of Rig ___ Ft. above P.D.

Run No. | Depth Scale	1 | 1:20		
Date	17 Sept 77		
First Reading	676m		
Last Reading	189m		
Interval Measured	9 details		
Casing BPB	9.8m		
Casing Driller	10.7m		
Depth Reached	707.3m		
Bottom Driller	707.4m		
Mud Nature	Quik-Gel		
S.G. | Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	10 hrs.		
Truck No.	V24/34		
Recorded By	P. Waters		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples				
Date | Sample No				
Depth — Driller				
Type Fluid in Hole				
Dens. | Visc				
ph. | Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source Rmf | Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm	Sonde No.	Source Number
SBRD	9 dets.		2¼	1		119	M5567
Cal.	9 dets.		2¼	1		119	

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 21 Sukunka
FIELD
COUNTY B.C. STATE Canada

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PR-SUKUNKA 77(3)A

BPB

GAMMA RAY SLS DENSITY
CALIPER LOG

COMPANY B.P. Canada Ltd - Coal group
BOREHOLE BP # 22 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.5 m. above P.D.

GRID REF. E N R.L.

Run No. / Depth Scale	1 / 200:1		
Date	29 Aug 77		
First Reading	135m		
Last Reading	0		
Interval Measured	135m		
Casing BPB	17 m		
Casing Driller	-		
Depth Reached	136 m		
Bottom Driller	-		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	2½ hrs		
Truck No.	Rv 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples		
Date	Sample No.	
Depth-Driller		
Type Fluid in Hole		
Dens	Visc	
ph	Fluid Loss	ml
Source of Sample	@ °F	@ °F
Rm @ Meas Temp	@ °F	@ °F
Rmf @ Meas Temp	@ °F	@ °F
Rmc @ Meas Temp	@ °F	@ °F
Source Rmf	Rmc	
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm.	Sonde No.	Source No.
Gamma	134	0	9	2	1.36	119	-
SLSD	135	1	9	1/3	0.77	119	M5567
Caliper	135	15	9	1	-	119	-

GAMMA RAY
0 API 150

DEPTHS

S.L.S. DENSITY
6000 SDU 0

CALIPER
7" 2"

CALIBRATION DATA

Jig No. 012 Value 400@2"Diam.
Jig mark shown at above value x0.3

GAMMA RAY
HOLE SIZE CORRECTION

CALIBRATION DATA

Jig Cal. date 25 Aug77 Jig value 395 SDU@1.47gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.79
6000 SDU 0

COAL BULK DENSITY
grm/cc

GAMMA RAY
0 API 150

DEPTHS

S.L.S. DENSITY
6000 SDU 0

CALIPER
7" 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 22 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

PR-SUKUNKA 77(3)A.

SBR DENSITY CALIPER
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 22 Sukunka 77
STATE British Columbia COUNTRY Canada
Permanent Datum Ground Level Elev. m.
Log measured from Ground Level m. above P.D.
Drilling measured from Rig Floor 0.5 m. above P.D.

GRID REF E N R.L.

Run No.	1			
Depth Scale	20:1			
Date	29 Aug 77			
First Reading	135 m			
Last Reading	0			
Interval Measured	4 Details			
Casing BPB	17 m			
Casing Driller	-			
Depth Reached	136 m			
Bottom Driller	-			
Mud Nature	Quik-Gel			
S.G / Viscosity	-			
Bit Size 1	HQ to TD	to	to	
2	to	to	to	
3	to	to	to	
Casing Size 1	4" to	to	to	
2	to	to	to	
Rm @ Meas Temp	@	@	@	
Rmf @ Meas Temp	@	@	@	
Rmc @ Meas Temp	@	@	@	
BHT	-			
Operating Time	$2\frac{1}{2}$ hrs			
Truck No.	RV 28/42			
Recorded By	P.J. Waters			
Witness	P. Raymant			

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc.			
ph	Fluid Loss		ml	
Source of Sample				
Rm @ Meas.Temp		@ °F	@ °F	
Rmf @ Meas Temp		@ °F	@ °F	
Rmc @ Meas Temp		@ °F	@ °F	
Source Rmf	Rmc			
Rm @ BHT		@ °F	@ °F	
Rmf @ BHT		@ °F	@ °F	
Rmc @ BHT		@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m. From	To	Speed m/min	T.C. Sec	Norm	Sonde No	Source No.
SBRD	4 Details		$2\frac{1}{4}$	1	-	119	M5567
Caliper	" " " "		$2\frac{1}{4}$	1	-	119	-

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 22 Sukunka 77
STATE British Columbia
COUNTRY CANADA

MY (8) 58360 R

PR-SUKUNKA 77(3)A
BP-22

SLS DENSITY GAMMA RAY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 22 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.5 m. above P.D.

GRID REF E ____ N ____ R L ____

Run No. / Depth Scale	1 20:1		
Date	29 Aug 77		
First Reading	135 m		
Last Reading	0		
Interval Measured	4 Details		
Casing BPB	17 m		
Casing Driller	-		
Depth Reached	136 m		
Bottom Driller	-		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	-		
Operating Time	2½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date			
Sample No			
Depth-Driller			
Type Fluid in Hole			
Dens / Visc			
ph. / Fluid Loss			ml
Source of Sample			
Rm @ Meas Temp	@ °F	@ °F	
Rmf @ Meas Temp	@ °F	@ °F	
Rmc @ Meas Temp	@ °F	@ °F	
Source Rmf / Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C Sec	Norm	Sonde No	Source No
SLSD	4 Details		2¼	1	0.77	119	M5567
Gamma	4 Details		2¼	2	1.36	119	-

150 GAMMA RAY API 0
6000 SLS DENSITY SDU 0

DEPTHS

150 API 0
GAMMA RAY
6000 SDU 0
S.L.S. DENSITY

DEPTHS

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 22 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

PR-SUKUNKA 77(3)A.

H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 22 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor 0.5 m. above P.D.

GRID REF E ____ N ____ R.L ____

Run No / Depth Scale	1 / 20:1		
Date	29 Aug 77		
First Reading	135 m		
Last Reading	0		
Interval Measured	5 Details		
Casing BPB	17 m		
Casing Driller	-		
Depth Reached	136 m		
Bottom Driller	-		
Mud Nature	Quik-Gel		
SG. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	2½ hrs		
Truck No	RV 28/42		
Recorded By	P.J. Waters		
Witness	P. Raymant		

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REMARKS ____

Changes in Mud Type or Additional Samples				
Date	Sample No			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc			
ph.	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp	@ °F	@ °F		
Rmf @ Meas Temp	@ °F	@ °F		
Rmc @ Meas Temp	@ °F	@ °F		
Source Rmf	Rmc			
Rm @ BHT	@ °F	@ °F		
Rmf @ BHT	@ °F	@ °F		
Rmc @ BHT	@ °F	@ °F		

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C. Sec	Norm	Sonde No	Source No.
HRD	5 Details		2¼	1	-	15	HR2

DEPTHS

H.R. DENSITY

7200 CPS 4200

DEPTHS

7200 CPS 4200

H.R. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 22 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 5830 ★

PR- SUKUNKA 77(3)A
BP 23

GAMMA RAY SLS DENSITY
GENERAL LOG

BPB

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 23 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev ___ Ft.
Log measured from Ground level Ft. above P.D.
Drilling measured from Rig Floor 4 Ft. above P.D.

Run No.	Depth Scale		
1	200:1		
Date	28 Aug 77		
First Reading	24.88m		
Last Reading	0		
Interval Measured	24.88m		
Casing BPB	-		
Casing Driller	8"		
Depth Reached	26.44m		
Bottom Driller	90°		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 8"	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	-		
Operating Time	½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J. Waters		
Witness	P.Raymant		

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REMARKS bh caved in below casing - rods inserted to TD.

Changes in Mud Type or Additional Samples

Date	Sample No				
Depth — Driller					
Type Fluid in Hole					
Dens	Visc				
ph	Fluid Loss	ml			
Source of Sample					
Rm	@ Meas Temp.	@ °F	@ °F	@ °F	
Rmf	@ Meas Temp.	@ °F	@ °F	@ °F	
Rmc	@ Meas Temp.	@ °F	@ °F	@ °F	
Source Rmf	Rmc				
Rm	@ BHT	@ °F	@ °F	@ °F	
Rmf	@ BHT	@ °F	@ °F	@ °F	
Rmc	@ BHT	@ °F	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

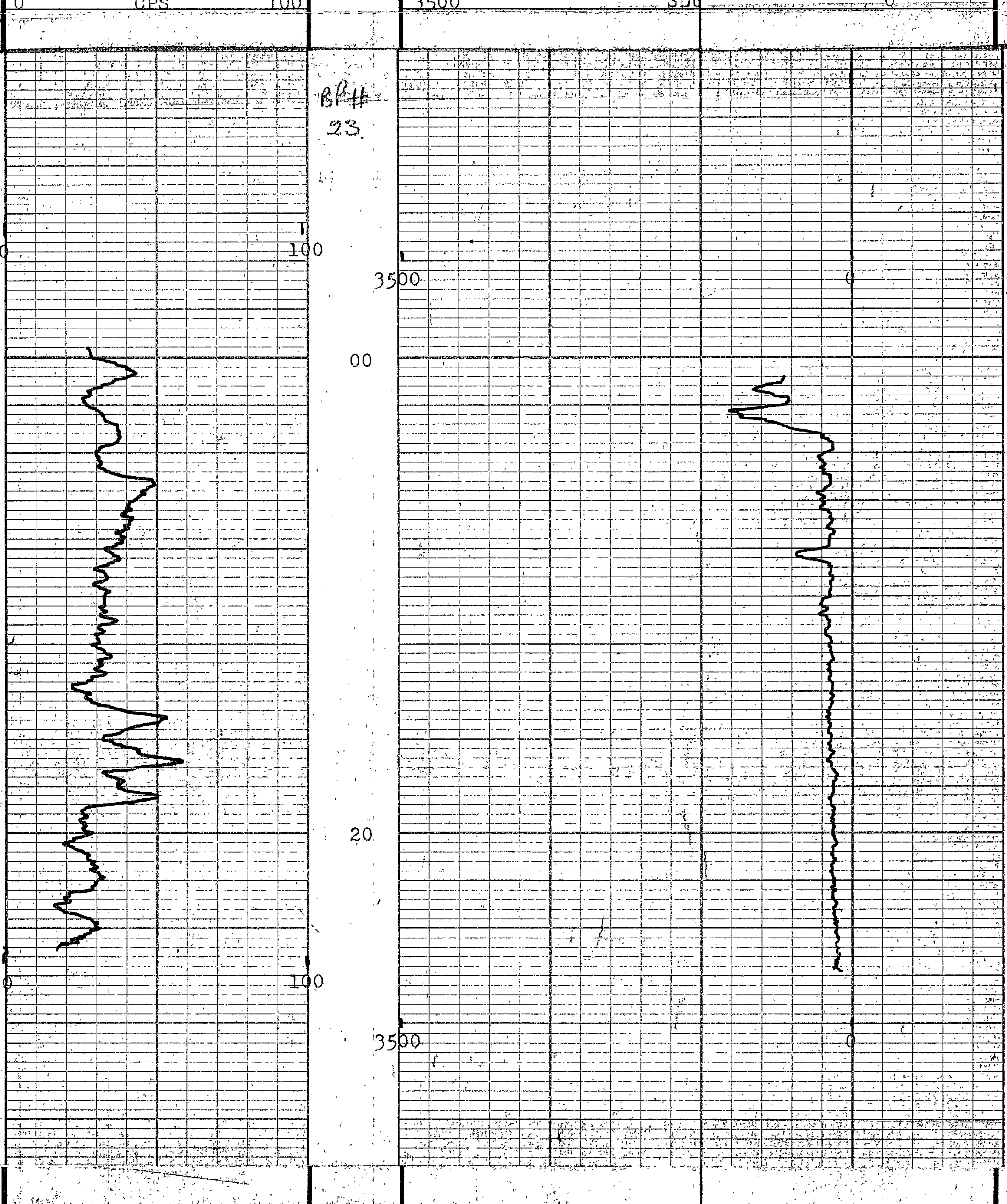
Equipment Data

Run No.	Tool Type	Tool Position	Other
1	CCS	SIDEWALL	-

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm.	Sonde No.	Source Number
Gamma	24.88	0	9	2	-	119	-
SLSD	25.5	1	9	1/3	0.78	119	M5567

GAMMA RAY	DEPTHS	S.L.S. DENSITY
0 CPS 100		3500 SDU 0



GAMMA RAY	DEPTHS	S.L.S. DENSITY
0 CPS 100		3500 SDU 0

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 23 Sukunka 77
FIELD British Columbia
COUNTY Canada STATE ___

MT 41483 R

PR-SUKUNKA 77(3)A

GAMMA RAY SLS DENSITY CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 24 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor 1.2m. above P.D.

GRID REF E ____ N ____ R.L. ____

Run No	1		
Depth Scale	200:1		
Date	29 Aug 77		
First Reading	55.5 m		
Last Reading	0		
Interval Measured	55.5 m		
Casing BPB rods	36.4 m		
Casing Driller rods	120'		
Depth Reached	56.16m		
Bottom Driller	185'		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 40'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	1½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date / Sample No.				
Depth – Driller				
Type Fluid in Hole				
Dens / Visc				
ph / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@ °F		@ °F	
Rmf @ Meas Temp	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source Rmf / Rmc				
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm.	Sonde No	Source No.
gamma	54.4	0	9	2	1.36	119	-
SLSD	55.5	1	9	1/3	0.77	119	M5567
Caliper	55	28	9	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ---- 2"

CALIBRATION DATA

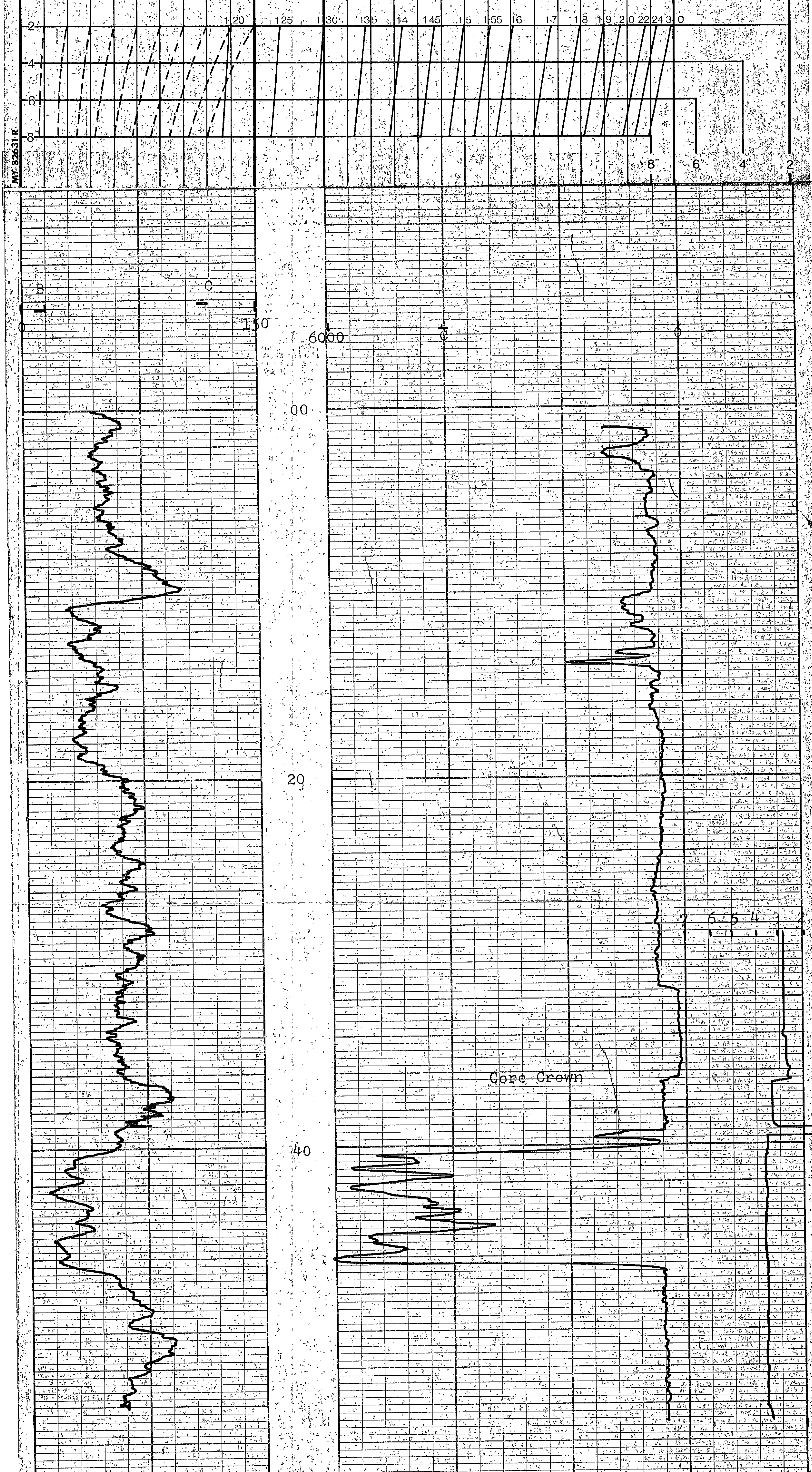
Jig No. 012 Value 400 @ 2" Diam.
Jig mark shown at above value ×0.3

CALIBRATION DATA

Jig Cal. date 25 Aug 77 Jig value 395 SDU @ 1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.79
6000 SDU 0

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc



0 API 150	DEPTHS	6000 SDU 0	7" ---- 2"
GAMMA RAY		S.L.S. DENSITY	CALIPER

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 24 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 583

PR-SUKUNKA 77(3)A

24

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GAMMA RAY SLS DENSITY
CALIPER SBR DENSITY
H.R. DENSITY DETAIL LOGS.

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 24 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 1.2m. above P.D.

GRID REF. E. N. RL.

Run No.	1			
Depth Scale	20:1			
Date	29 Aug 77			
First Reading	55.5 m			
Last Reading	0			
Interval Measured	3 x 1 Detail			
Casing BPB	36.4 m			
Casing Driller rods	120'			
Depth Reached	56.16 m			
Bottom Driller	185'			
Mud Nature	Quik-Gel			
SG. / Viscosity	—			
Bit Size 1	HQ to TD	to	to	to
2	to	to	to	to
3	to	to	to	to
Casing Size 1	4" to 40'	to	to	to
2	to	to	to	to
Rm @ Meas Temp	@	@	@	@
Rmf @ Meas Temp	@	@	@	@
Rmc @ Meas Temp	@	@	@	@
BHT	—			
Operating Time	1½ hrs			
Truck No.	RV 28/42			
Recorded By	P.J. Waters			
Witness	P.Raymant			

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth - Driller				
Type Fluid in Hole				
Dens. Visc				
ph. Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@ °F		@ °F	
Rmf @ Meas Temp	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source Rmf Rmc				
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

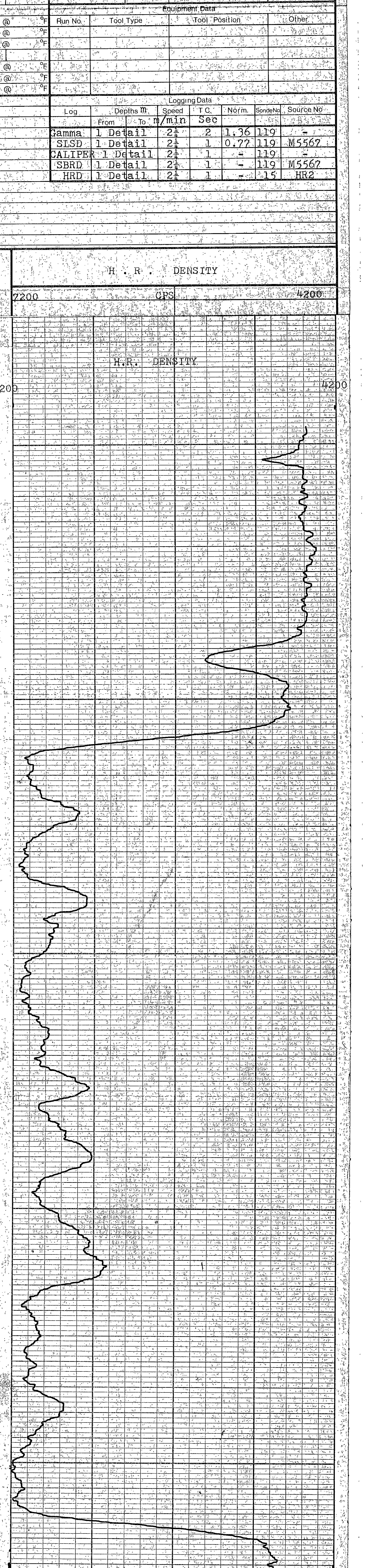
Run No.	Tool Type	Tool Position	Other

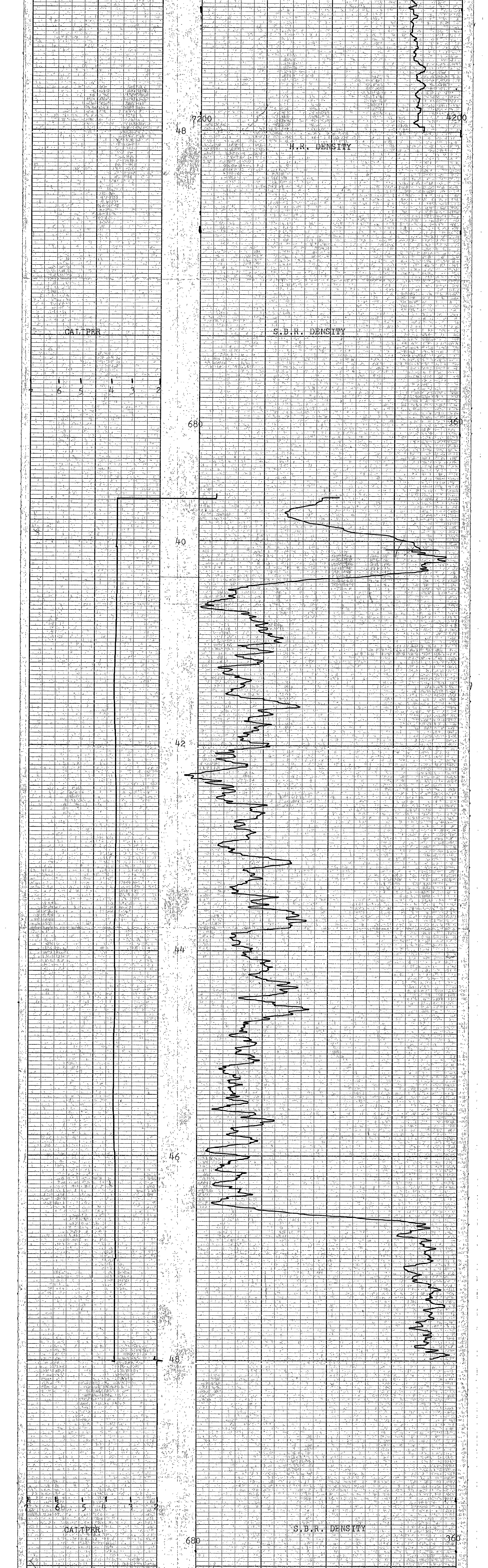
Logging Data

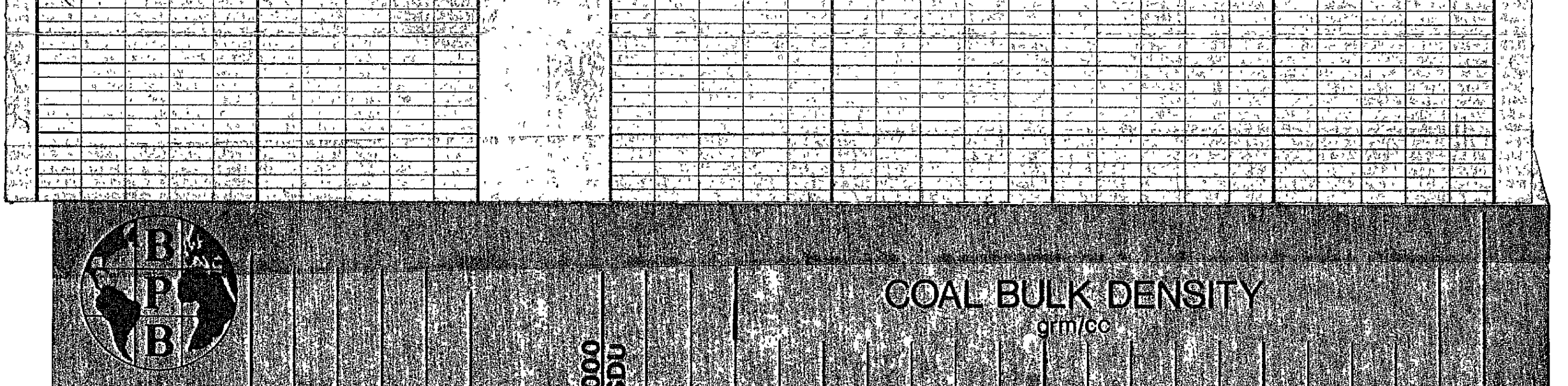
Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm.	Sonde No	Source No
Gamma	1 Detail		2¼	2	1.36	119	-
SLSD	1 Detail		2¼	1	0.77	119	M5567
CALIPER	1 Detail		2¼	1	-	119	-
SBRD	1 Detail		2¼	1	-	119	M5567
HRD	1 Detail		2¼	1	-	15	HR2

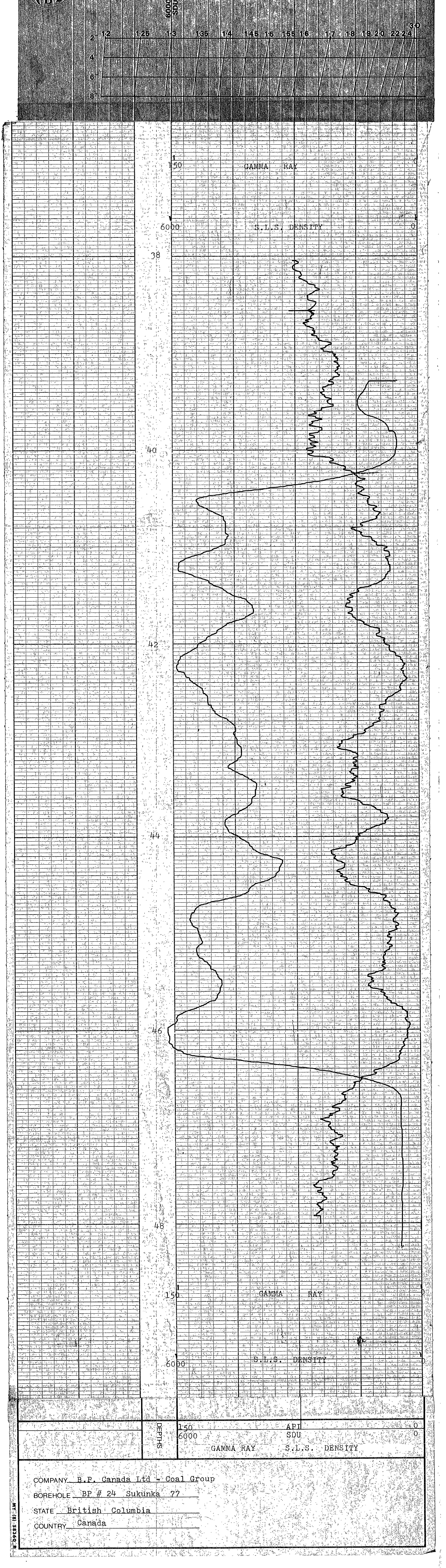
DEPTHS

H . R . DENSITY
7200 CPS 4200









DEPTHS
150 API 0
6000 SDU 0
GAMMA RAY S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 24 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

PR-SUKUNKA 77(3)A.

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BPB

GAMMA RAY SLS DENSITY
CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 10 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor ____ m. above P.D.

GRID REF. E ____ N ____ R.L. ____

Run No	1		
Depth Scale	200:1		
Date	14 Aug 77		
First Reading	687 m		
Last Reading	0		
Interval Measured	687 m		
Casing BPB	Rods 580 m		
Casing Driller	580 m		
Depth Reached	687.51m		
Bottom Driller	687.32m		
Mud Nature	Quik-Gel		
SG	-		
Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to 580m	to	to
2	to	to	to
3			
Rm @ Meas Temp	- @	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	6 hrs		
Truck No	RV 28/42		
Recorded By	P.J. Waters		
Witness	P.Raymant		

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REMARKS Graticule does not apply in rods.

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc.			
ph.	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp	@ °F		@ °F	
Rmf @ Meas Temp	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source: Rmf	Rmc			
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

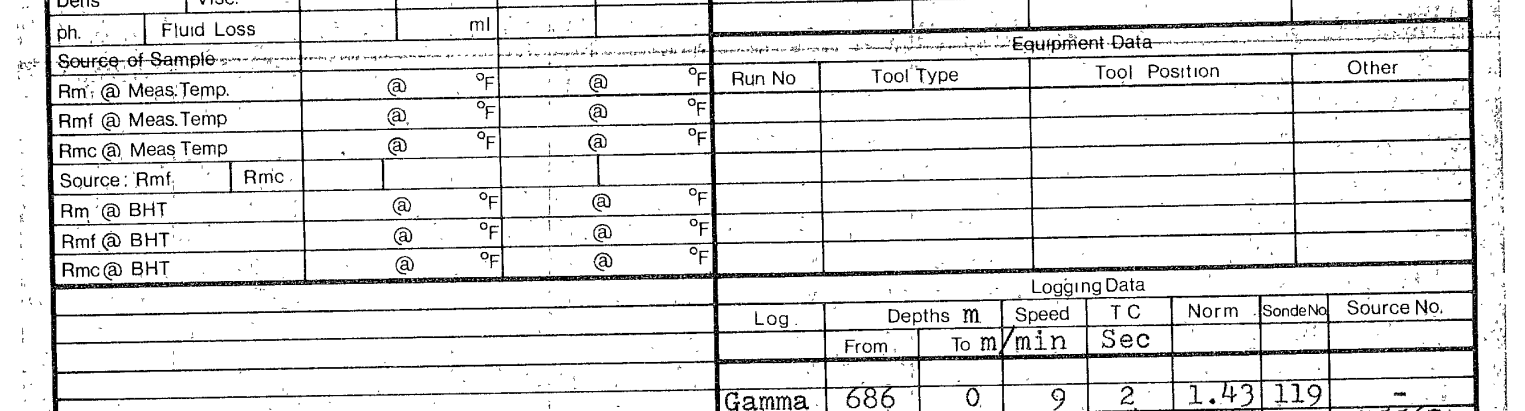
Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm	Sonde No	Source No.
Gamma	686	0	9	2	1.43	119	-
SLSD	687	1	9	1/3	0.65	119	M5567
Caliper	687	580	9	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ----- 2"

CALIBRATION DATA
Jig No. 012 Value 400@2"Diam.
Jig mark shown at above value x0.3

CALIBRATION DATA
Jig Cal. date 31.7.77 Jig value 410 SDU @ 1.46 gr/cc
Jig No 011 Span 1000 NORM SDU/CPS = 0.71
6000 SDU 0


GAMMA RAY HOLE SIZE CORRECTION

COAL BULK DENSITY grm/cc

MY 82631 R

0 API 150	DEPTHS	6000 SDU 0	7" ----- 2"
GAMMA RAY		S.L.S. DENSITY	CALIPER

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 10 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

BP-SUKUNKA 77 (3)A

GAMMA RAY S.L.S. DENSITY CALIPER LOG

BPB

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP#7 SUKUNKA 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF. E ____ N ____ R.L. ____

Run No.	I		
Depth Scale	200:1		
Date	22/7/77		
First Reading	429 m		
Last Reading	0		
Interval Measured	429 m		
Casing BPB	37 m		
Casing Driller	128'		
Depth Reached	430.11m		
Bottom Driller	430.7 m		
Mud Nature	QUIK - GEL		
SG | Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 128'	to	to
2	to	to	to
Rm @ Meas.Temp.	@	@	@
Rmf @ Meas.Temp.	@	@	@
Rmc @ Meas.Temp.	@	@	@
BHT			
Operating Time	5 hrs		
Truck No.	RV28/42		
Recorded By	P.J. Waters		
Witness	A. Bowler		

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REMARKS ____

Changes in Mud Type or Additional Samples				
Date | Sample No				
Depth – Driller				
Type Fluid in Hole				
Dens | Visc				
ph. | Fluid Loss		ml		
Source of Sample				
Rm @ Meas.Temp	@	°F	@	°F
Rmf @ Meas.Temp	@	°F	@	°F
Rmc @ Meas.Temp	@	°F	@	°F
Source: Rmf | Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm	Sonde No.	Source No.
Gamma	428	0	9	2	1.36	119	-
SLSD	429	1	9	1/3	0.675	119	M5567
Caliper	429	36	15	1/3	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ----- 2"

CALIBRATION DATA

Jig No. 012 Value 400 @2" Diam.
Jig mark shown at above value *0.3

CALIBRATION DATA

Jig Cal date 7jul 77 Jig value 398 SDU @ 1.47 gr/cc
Jig No 011 Span 600 NORM SDU/CPS = 0.675
6000 SDU o

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ----- 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP#7 SUKUNKA 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

PR-SUKUNKA 77(3)A.

GAMMA RAY SLS DENSITY
CALIPER LOG

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 38 Sukunka 77
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft.above P.D.
Drilling measured from Rig Floor Ft.above P.D.

Run No.	1		
Depth Scale	1:200		
Date	24 Sept 77		
First Reading	119m		
Last Reading	0		
Interval Measured	119m		
Casing BPB			
Casing Driller	21.3m		
Depth Reached	120.2m		
Bottom Driller	120.7m		
Mud Nature	Quik-Gel		
S.G. Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 21.3m	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	2 hrs.		
Truck No	V24/34		
Recorded By	R.Bishop		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth — Driller				
Type Fluid in Hole				
Dens	Visc.			
ph.	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp.	@ °F	@ °F		
Rmf @ Meas Temp	@ °F	@ °F		
Rmc @ Meas Temp.	@ °F	@ °F		
Source Rmf	Rmc			
Rm @ BHT	@ °F	@ °F		
Rmf @ BHT	@ °F	@ °F		
Rmc @ BHT	@ °F	@ °F		

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm	Sonde No	Source Number
Gamma	118	0	9	1	1.36	119	
SLSD	119	0	9	0.3	0.79	119	M5567
Cal.	118	0	9	0.3	out	119	

GAMMA RAY	DEPTHS	S L S DENSITY	CALIPER
0 API 150		6000 SDU	0 7" 2"

CALIBRATION DATA

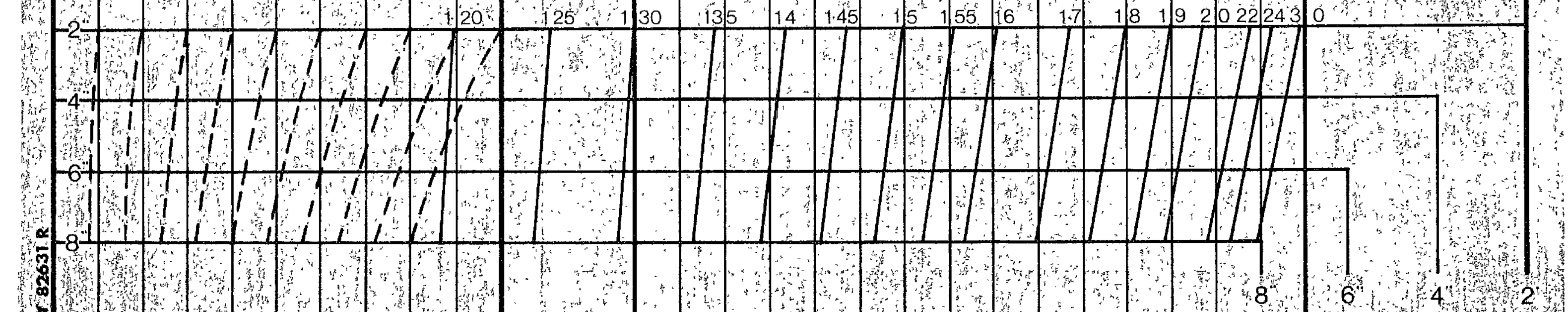
Jig No. 012 Value 100 @2" Diam.
Jig mark shown at above value ×0.3

CALIBRATION DATA

Jig Cal. date 25 Aug 77 Jig value 395 SDU @ 1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.79
6000 SDU 0

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc



GAMMA RAY	DEPTHS	S L S DENSITY	CALIPER
0 API 150		6000 SDU	0 7" 2"

COMPANY BP Canada Ltd - Coal Group
BOREHOLE BP # 38 Sukunka 77
FIELD
COUNTY B.C. STATE Canada

MY 41485-R

BP-38

PR-SUKUNKA 77(3)A.

SONIC LOG

COMPANY BP Canada Ltd - Coal Group

BOREHOLE BP # 38 Sukunka 77

STATE B.C. **COUNTRY** Canada

Permanent Datum Ground Level **Elev** ___ **Ft.**

Log measured from Ground Level **Ft. above P.D.**

Drilling measured from Rig Floor **Ft. above P.D.**

Run No. | Depth Scale	1 | 1:200		
Date	24 Sept 77		
First Reading	44m		
Last Reading	10m		
Interval Measured	25m		
Casing BPB			
Casing Driller	21.3m		
Depth Reached	120.2m		
Bottom Driller	120.7m		
Mud Nature	Quik-Gel		
S.G | Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 21.3m	to	to
2	to	to	to
Rm @Meas Temp	@	@	@
Rmf @Meas Temp.	@	@	@
Rmc @Meas Temp.	@	@	@
BHT			
Operating Time	2 hrs.		
Truck No.	V24/34		
Recorded By	R.Bishop		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples

Date | Sample No.			
Depth — Driller			
Type Fluid in Hole			
Dens | Visc.			
ph. | Fluid Loss	ml		
Source of Sample			
Rm @ Meas Temp.	@ °F	@ °F	
Rmf @ Meas Temp.	@ °F	@ °F	
Rmc @ Meas Temp.	@ °F	@ °F	
Source Rmf | Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

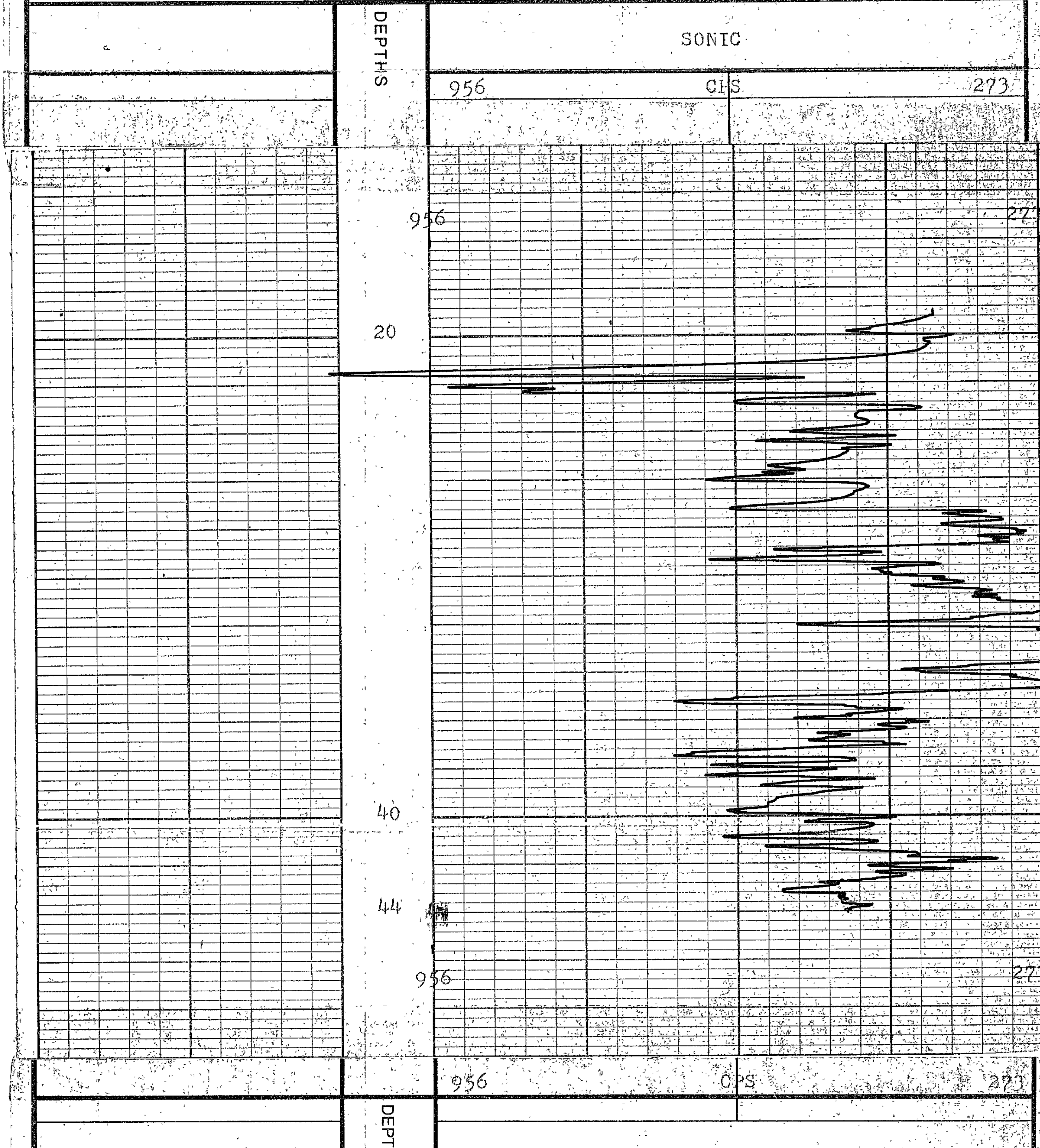
Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm.	Sonde No.	Source Number
Sonic	44	19	9	1			

Sonde would not drop below 45m



COMPANY BP Canada Ltd - Coal Group

BOREHOLE BP # 38 Sukunka 77

FIELD

COUNTY B.C. STATE Canada

MY 41485

PR-SUKUNKA 77(3)A

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BPB

GAMMA RAY SLS DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 26 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No.	1		
Depth Scale	20:1		
Date	13 Sept 77		
First Reading	483m		
Last Reading	0		
Interval Measured	8 Details		
Casing BPB	15m		
Casing Driller	–		
Depth Reached	484.45m		
Bottom Driller	481.89m		
Mud Nature	Water-Gel		
S.G. / Viscosity	–		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	4 3/4 hrs		
Truck No.	24/34		
Recorded By	F.T. Waters		
Witness	P. Reymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth – Driller				
Type Fluid in Hole				
Dens. Visc.				
ph Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source: Rmf Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

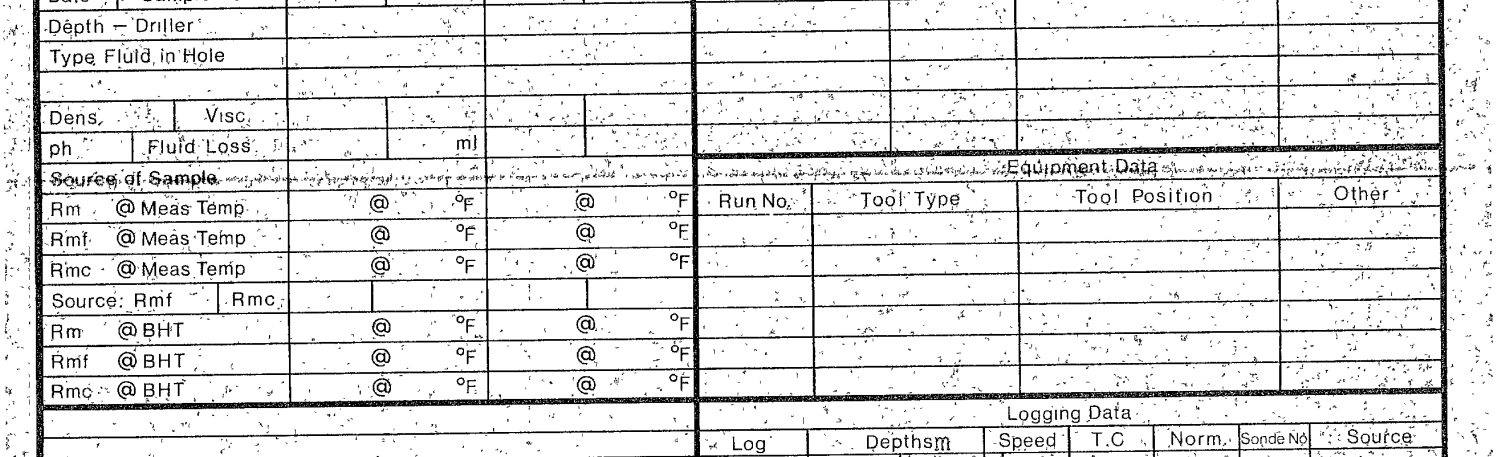
Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C Sec	Norm.	Sonde No	Source Number
Gamma	8 Details		2¼	2	1.36	119	
SLSD	8 Details		2¼	1	0.80	119	M5567

DEPTHS
150 GAMMA RAY API 0
S.L.S. DENSITY
6000 SDU 0



DEPTHS
150 API 0
GAMMA RAY
6000 SDU 0
S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 26 Sukunka 77
FIELD Sukunka 77
COUNTRY Canada STATE BC.

MY 41485-R

BP-25A.

PR-SUKUNKA 77(3)A.

S.B.R. DENSITY
DETAIL LOG

COMPANY B.P Canada Ltd - Coal Group
BOREHOLE BP # 25a Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Top of casing m. above P.D.

GRID REF E N R L

Run No / Depth Scale	1 / 20:1			
Date	2 Sept 77			
First Reading	59.6 m			
Last Reading	0			
Interval Measured	3 Details			
Casing BPB	TD			
Casing Driller rods	TD			
Depth Reached	60.26m			
Bottom Driller	59.43m			
Mud Nature	Quik-Gel			
SG / Viscosity	-			
Bit Size 1	HQ to TD	to	to	
2	to	to	to	
3	to	to	to	
Casing Size 1	rods to	to	to	
2	to	to	to	
Rm @ Meas Temp.	@	@	@	
Rmf @ Meas Temp	@	@	@	
Rmc @ Meas Temp.	@	@	@	
BHT	-			
Operating Time	1½ hrs			
Truck No.	RV 28/42			
Recorded By	P.J.Waters			
Witness	P.Raymant			

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REMARKS

Changes in Mud Type or Additional Samples		
Date / Sample No		
Depth-Driller		
Type Fluid in Hole		
Dens / Visc.		
ph / Fluid Loss	ml	ml
Source of Sample		
Rm @ Meas Temp	@ °F	@ °F
Rmf @ Meas Temp.	@ °F	@ °F
Rmc @ Meas Temp	@ °F	@ °F
Source Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C Sec	Norm.	Sonde No	Source No.
SBRD	3 Details		2¼	2	-	119	M5567

COMPANY B.P. Canada LTD - Coal Group
BOREHOLE BP# 25a Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

PR-SUKUNKA 77(3)A

BPB

GAMMA RAY SLS DENSITY
GENERAL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 25a Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level m. above P.D.
Drilling measured from Top of casing m. above P.D.

GRID REF E ____ N ____ R.L. ____

Run No	Depth Scale	1	200:1				
Date		2 Sept 77					
First Reading		59.60m					
Last Reading		0					
Interval Measured		59.60m					
Casing BPB		TD					
Casing Driller rods		TD					
Depth Reached		60.26 m					
Bottom Driller		59.43 m					
Mud Nature		Quik-Gel					
S.G	Viscosity	-					
Bit Size 1		HQ to TD		to		to	
2		to		to		to	
3		to		to		to	
Casing Size 1		rods to		to		to	
2		to		to		to	
Rm @ Meas Temp		@		@		@	
Rmf @ Meas Temp.		@		@		@	
Rmc @ Meas Temp		@		@		@	
BHT		-					
Operating Time		1½ hrs					
Truck No		RV 28/42					
Recorded By		P.J.Waters					
Witness		P.Raymant					

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REMARKS

Changes in Mud Type or Additional Samples
Date Sample No.
Depth–Driller
Type Fluid in Hole
Dens Visc
ph. Fluid Loss ml
Source of Sample
Rm @ Meas Temp @ °F @ °F
Rmf @ Meas Temp @ °F @ °F
Rmc @ Meas Temp. @ °F @ °F
Source Rmf Rmc
Rm @ BHT @ °F @ °F
Rmf @ BHT @ °F @ °F
Rmc @ BHT @ °F @ °F

Scale Changes

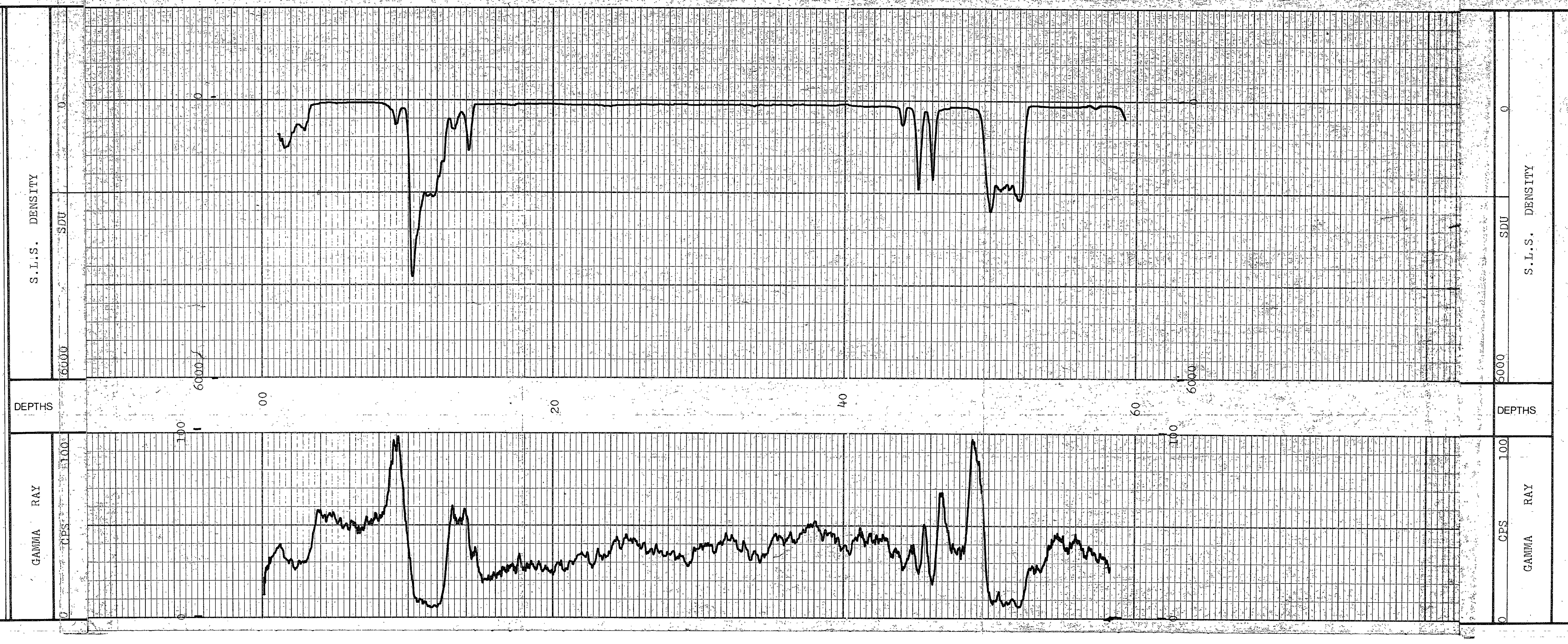
Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C Sec	Norm	Sonde No.	Source No.
Gamma	58.4	0	9	2	-	119	-
SLSD	59.6	1	9	1/3	0.77	119	M5567



COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 25a Sukunka 77
STATE British Columbia
COUNTRY Canada

MT (B) 58360 R

PR-SUKUNKA 77(3)A

H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 25a Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Top of casing m. above P.D.

GRID REF. E N R.L.

Run No.	1		
Depth Scale	20:1		
Date	2 Sept 77		
First Reading	59.6 m		
Last Reading	0		
Interval Measured	3 Details		
Casing BPB	TD		
Casing Driller	TD		
Casing Driller	rods		
Depth Reached	60.26 m		
Bottom Driller	59.43 m		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	rods to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	-		
Operating Time	1¼ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples			
Date / Sample No			
Depth–Driller			
Type Fluid in Hole			
Dens / Visc			
ph. / Fluid Loss	ml		
Source of Sample			
Rm @ Meas.Temp.	@ °F	@ °F	
Rmf @ Meas Temp	@ °F	@ °F	
Rmc @ Meas Temp.	@ °F	@ °F	
Source. Rmf / Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C. SEC	Norm	Sonde No	Source No.
HRD	3 Details		2¼	1	-	15	HR2

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 25a Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360

R2-SUKUNKA 77(3)A.

B P B

GAMMA RAY SLS DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 25a Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Top of casing m. above P.D.

GRID REF E N RL.

Run No	DepthScale	1	20:1		
Date		2 Sept 77		
First Reading		59.6 m		
Last Reading		0		
Interval Measured		3 Details		
Casing BPB		TD		
Casing Driller		rods TD		
Depth Reached		60.26m		
Bottom Driller		59.43m		
Mud Nature		Quik- Gel		
SG	Viscosity	-		
Bit Size 1		HQ to TD	to	to
2		to	to	to
3		to	to	to
Casing Size 1		rods to	to	to
2		to	to	to
Rm @ Meas Temp		@	@	@
Rmf @ Meas Temp		@	@	@
Rmc @ Meas Temp		@	@	@
BHT		-		
Operating Time		1½ hrs		
Truck No.		RV 28/42		
Recorded By		P.J.Waters		
Witness		P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples					
Date	Sample No				
Depth-Driller					
Type Fluid in Hole					
Dens	Visc				
ph.	Fluid Loss		ml		
Source of Sample					
Rm @ Meas Temp.		@ °F		@ °F	
Rmf @ Meas Temp		@ °F		@ °F	
Rmc @ Meas Temp		@ °F		@ °F	
Source Rmf	Rmc				
Rm @ BHT		@ °F		@ °F	
Rmf @ BHT		@ °F		@ °F	
Rmc @ BHT		@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C Sec	Norm.	Sonde No	Source No.
Gamma	3 Details		2¼	2	-	119	-
SLSD	3 Details		2¼	1	0.77	119	M5567

DEPTHS
100 GAMMA RAY CPS 0
S.L.S. DENSITY
3500 SDU 0

DEPTHS
100 CPS 0
GAMMA RAY
3500 SDU 0
S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 25a Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

PR-SUKUNKA 77(3)A BP-26.

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SBR DENSITY CALIPER
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 26 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground Level Elev ____ Ft.
Log measured from Ground Level ____ Ft. above P.D.
Drilling measured from Rig Floor ____ Ft. above P.D.

Run No. | Depth Scale	1 | 20:1			
Date	15 Sept 77			
First Reading	483m			
Last Reading	0			
Interval Measured	8 Details			
Casing BPB				
Casing Driller	16m			
Depth Reached	484.15m			
Bottom Driller	481.80m			
Mud Nature	Quik-Gel			
S.G. | Viscosity	-			
Bit Size 1	HQ to TD	to	to	to
2	to	to	to	to
3	to	to	to	to
Casing Size 1	4" to	to	to	to
2	to	to	to	to
Rm @ Meas Temp	@	@	@	@
Rmf @ Meas Temp	@	@	@	@
Rmc @ Meas Temp	@	@	@	@
BHT	-			
Operating Time	4 3/4 hrs			
Truck No.	W 24/34			
Recorded By	P.J. Waters			
Witness	P. Raymant			

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REMARKS

Changes in Mud Type or Additional Samples				
Date | Sample No.				
Depth — Driller				
Type Fluid in Hole				
Dens. | Visc				
ph. | Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp.	@	°F	@	°F
Rmf @ Meas Temp.	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source. Rmf | Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm.	Sonde No	Source Number
SBRD	8 Details		2¼	1	-	119	M5567
Caliper	8 Details		2¼	1	-	119	-

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 26
FIELD Sukunka 77
COUNTRY Canada STATE BC.

MY 41485 R

PR-SUKUNKA 77(3)A

BPB

GAMMA RAY SLS DENSITY
CALIPER GENERAL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 26 Sukunka 77
STATE British Columbia COUNTRY Canada
Permanent Datum Ground Level Elev ____ Ft.
Log measured from Ground Level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

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Run No.	Depth Scale	1	20:1
Date		13 Sept 77	
First Reading		483m	
Last Reading		0	
Interval Measured		483m	
Casing BPB		16m	
Casing Driller		-	
Depth Reached		484.45m	
Bottom Driller		481.80m	
Mud Nature		Quik-Gel	
SG | Viscosity		-	
Bit Size 1		NQ to TD	
2		to	
3		to	
Casing Size 1		4" to	
2		to	
Rm @ Meas Temp.		@	
Rmf @ Meas Temp.		@	
Rmc @ Meas Temp.		@	
BHT		-	
Operating Time		4 3/4 hrs	
Truck No		V 24/34	
Recorded By		P.J. Waters	
Witness		P. Raymant	

fold here

REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.		
Depth – Driller			
Type Fluid in Hole			
Dens,	Visc		
ph.	Fluid Loss	ml	
Source of Sample			
Rm @ Meas Temp		@ °F	@ °F
Rmf @ Meas Temp.		@ °F	@ °F
Rmc @ Meas Temp.		@ °F	@ °F
Source: Rmf	Rmc		
Rm @ BHT		@ °F	@ °F
Rmf @ BHT		@ °F	@ °F
Rmc @ BHT		@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C Sec	Norm	Sonde No	Source Number
Gamma	483	0	9	2	1.36	119	-
SLSD	484	1	9	1/3	0.80	119	M5567
Caliper	484	5	9	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" 2"

CALIBRATION DATA

Jig No. 012 Value 400 @2" Diam.
Jig mark shown at above value ≠ 0.3

CALIBRATION DATA

Jig Cal. date 25 Aug77 Jig value 395 SDU @ 1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.80
6000 SDU 0

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 26 Sukunka 77
FIELD Sukunka 77
COUNTYY Canada STATE BC.

PR-SUKUNKA 77(3)A.

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H. R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd. - Coal Group
BOREHOLE BP # 26 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground Level Elev ____ Ft.
Log measured from Ground level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. | Depth Scale	1 | 20:1		
Date	13 Sept 77		
First Reading	483m		
Last Reading	0		
Interval Measured	8 Details		
Casing BPB	-		
Casing Driller	16m		
Depth Reached	484.45m		
Bottom Driller	481.89m		
Mud Nature	Quik gel		
S.G. | Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2			
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	4 3/4 hrs		
Truck No.	V 24/34		
Recorded By	P.J. Waters		
Witness	P.Raymant		

fold here

REMARKS

Changes in Mud Type or Additional Samples				
Date | Sample No.				
Depth — Driller				
Type Fluid in Hole				
Dens | Visc				
ph | Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp.	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source: Rmf | Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C Sec	Norm	Sonde No	Source Number
HRD	8 Details		2¼	1	-	90	Hr2

DEPTHS

H . R . DENSITY

3400 CPS 2000

3400 CPS 2000

DEPTHS

H . R . DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 26
FIELD Sukunka 77
COUNTRY Canada STATE BC.

PR-SUKUNKA 77(3)A

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GAMMA RAY SLS DENSITY
GENERAL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 27 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E ____ N ____ RL ____

Run No / Depth Scale	1 / 200:1		
Date	4 Sept 77		
First Reading	44.4 m		
Last Reading	0		
Interval Measured	44.4 m		
Casing BPB	TD		
Casing Driller rods	TD		
Depth Reached	45.37 m		
Bottom Driller	45.72 m		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to TD	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	½ hr.		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No.				
Depth – Driller				
Type Fluid in Hole				
Dens / Visc				
ph / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@ °F		@ °F	
Rmf @ Meas. Temp.	@ °F		@ °F	
Rmc @ Meas Temp.	@ °F		@ °F	
Source Rmf / Rmc				
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

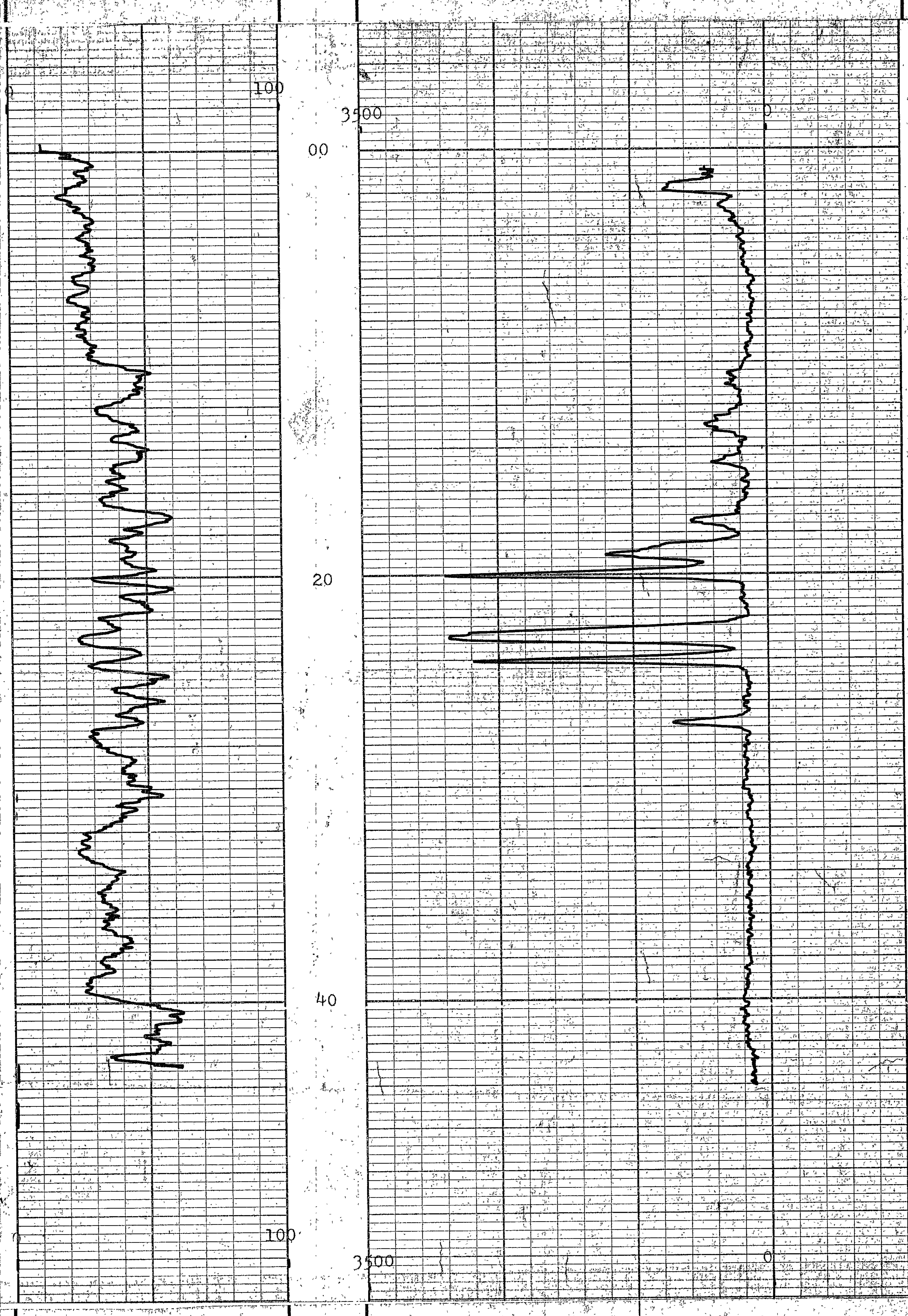
Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C Sec	Norm.	Sonde No	Source No
Gamma	43.2	0	9	2	-	119	-
SLSD	44.4	1	9	1/3	-	119	M5567

GAMMA RAY	DEPTHS	S. L. S. DENSITY
0 CPS 100		3500 CPS 0



GAMMA RAY	DEPTHS	S. L. S. DENSITY
0 CPS 100		3500 CPS 0

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 27 Sukunka 77
STATE British Columbia
COUNTRY Canada

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PR-SUKUNKA 77(3)A.

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GAMMA RAY SLS DENSITY
CALIPER LOG

BP

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 28 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level m. above P.D.
Drilling measured from Top of casing m. above P.D.

GRID REF. E ____ N ____ RL ____

Run No.	Depth Scale	1	200:1
Date		6 Sept 77	
First Reading		57.5 m	
Last Reading		0	
Interval Measured		57.5m	
Casing BPB		12.5m	
Casing Driller		-	
Depth Reached		59.08m	
Bottom Driller		59.43m	
Mud Nature		Quik-Gel	
S.G.	Viscosity	-	
Bit Size 1		HQ to TD	to
2		to	to
3		to	to
Casing Size 1		4" to	to
2		to	to
Rm @ Meas Temp.		@	@
Rmf @ Meas Temp.		@	@
Rmc @ Meas Temp.		@	@
BHT		-	
Operating Time		$1\frac{1}{2}$hrs	
Truck No.		V 24/34	
Recorded By		P.J. Waters	
Witness		P. Raymant	

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REMARKS ____

Changes in Mud Type or Additional Samples

Date	Sample No.		
Depth - Driller			
Type Fluid in Hole			
Dens.	Visc.		
ph.	Fluid Loss	ml	
Source of Sample			
Rm @ Meas. Temp.		@ °F	@ °F
Rmf @ Meas. Temp		@ °F	@ °F
Rmc @ Meas Temp		@ °F	@ °F
Source: Rmf	Rmc		
Rm @ BHT		@ °F	@ °F
Rmf @ BHT		@ °F	@ °F
Rmc @ BHT		@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C. Sec	Norm	Sonde No.	Source No.
Gamma	57	0	9	2	1.36	119	-
SLSD	58	1	9	1/3	0.70	119	M 5567
Caliper	58	1	9	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY		CALIPER
0 API 150		6000 SDU	0	7" - - - 2"

CALIBRATION DATA

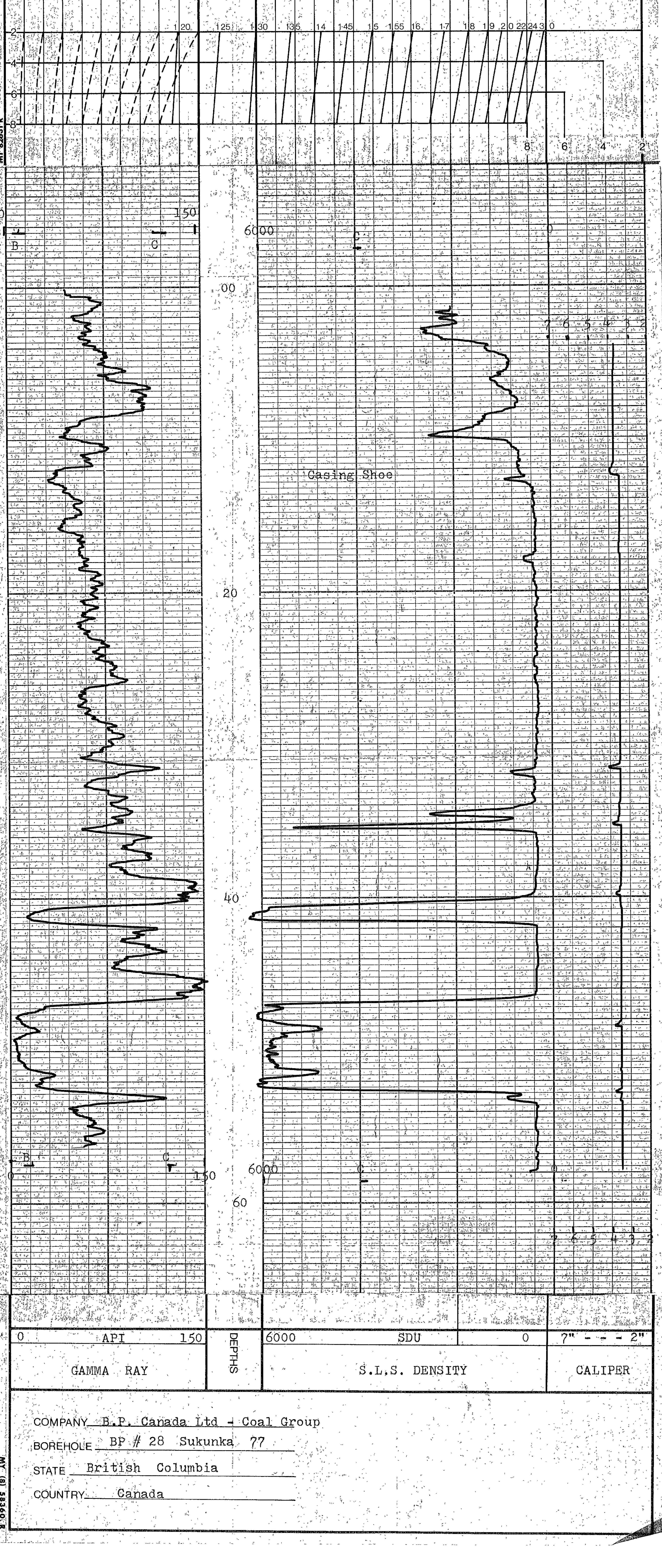
Jig No. 012 Value 400 @ 2" Diam.
Jig mark shown at above value x0.3

CALIBRATION DATA

Jig Cal date 25 Aug 77 Jig value 395 SDU @ 1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.69
6000 SDU o

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc



GAMMA RAY	DEPTHS	S.L.S. DENSITY		CALIPER
0 API 150		6000 SDU	0	7" - - - 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 28 Sukunka 77
STATE British Columbia
COUNTRY Canada

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PR-SUKUNKA 77(3)A.

BPB

S.B.R. DENSITY
CALIPER DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 11 Sukunka 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev.____m.
Log measured from GROUND LEVEL m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E____ N____ R.L.____

Run No.	1		
Depth Scale	20:1		
Date	5.8.77		
First Reading	375 m		
Last Reading	0		
Interval Measured	5 Details		
Casing BPB	19 m		
Casing Driller	65'		
Depth Reached	375.5 m		
Bottom Driller	1240'		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4¼" to 65'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5½ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	A. Bowler		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth-Driller				
Type Fluid in Hole				
Dens.	Visc.			
ph.	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp.		@ °F		@ °F
Rmf @ Meas Temp.		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C. SEC	Norm	Sonde No	Source No.
Caliper	5 DETAILS		3	1	-	119	-
SBRD	5 DETAILS		3	1	-	119	M5567

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 11 Sukunka 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

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PR-SUKUNKA 77 (3) A

GAMMA RAY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 11 Sukunka 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev.____m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF. E.____ N.____ R.L.____

Run No. | Depth Scale	1 | 20:1		
Date	5.8.77		
First Reading	375 m		
Last Reading	0		
Interval Measured	5 Details		
Casing BPB	19 m		
Casing Driller	65'		
Depth Reached	375.5 m		
Bottom Driller	1240'		
Mud Nature	Quik-Gel		
SG. | Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4¼" to 65'	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	5½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J. Waters		
Witness	A. Bowler		

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REMARKS____

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth-Driller				
Type Fluid in Hole				
Dens. | Visc.				
ph. | Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source: Rmf | Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C Sec	Norm	Sonde No	Source No.
Gamma	5 DETAILS		3	2	1.36	119	-

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 11 Sukunka 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

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PR-SUKUNKA 77(3)A

S.L.S. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 11 Sukunka 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF. E N R.L.

Run No.	1		
Depth Scale	20:1		
Date	5.8.77		
First Reading	375 m		
Last Reading	0		
Interval Measured	5 Details		
Casing BPB	19 m		
Casing Driller	65'		
Depth Reached	375.5 m		
Bottom Driller	1240'		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4¼" to 65'	to	to
2	to	to	to
Rm @ Meas.Temp.	@	@	@
Rmf @ Meas.Temp.	@	@	@
Rmc @ Meas.Temp.	@	@	@
BHT	-		
Operating Time	5½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	A. Bowler		

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REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No				
Depth - Driller				
Type Fluid in Hole				
Dens. / Visc				
ph / Fluid Loss		ml		
Source of Sample				
Rm @ Meas.Temp.	@	°F	@	°F
Rmf @ Meas.Temp.	@	°F	@	°F
Rmc @ Meas.Temp.	@	°F	@	°F
Source Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm.	Sonde No	Source No
SLSD	5 DETAILS		3	1	0.71	119	M5567

DEPTHS

S.L.S. DENSITY

6000 SDU 0

DEPTHS

6000 SDU 0

S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 11 Sukunka 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

MY (8) 58360 R

PR-SUKUNKA 77 (3) A.

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GAMMA RAY S.L.S.DENSITY CALIPER LOG

COMPANY B.P Canada Ltd - Coal Group
BOREHOLE BP #12 Sukunka 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor 0.3 m. above P.D.

GRID REF: E ____ N ____ RL ____

Run No.	1		
Depth Scale	200:1		
Date	12.8.77		
First Reading	475 m		
Last Reading	0		
Interval Measured	475 m		
Casing BPB	18.4 m		
Casing Driller	18.90m		
Depth Reached	475.71m		
Bottom Driller	475.18m		
Mud Nature	Quik-Gel		
SG / Viscosity	- / -		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4 to 62'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	7 hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS T.G.L. add 40 cms.

Changes in Mud Type or Additional Samples				
Date / Sample No				
Depth-Driller				
Type Fluid in Hole				
Dens. / Visc				
ph / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm.	Sonde No	Source No.
Gamma	474	0	9	2	1.29	119	-
SLSD	475	1	9	1/3	0.71	119	M5567
Caliper	475	1	10	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S.DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ----- 2"

CALIBRATION DATA

Jig No. 012 Value 400 @ 2 Diam.
Jig mark shown at above value x0.3

CALIBRATION DATA

Jig Cal. date 31.7.77 Jig value 410 SDU @ 1.46 gr/cc
Jig No. 011 Span 1000 NORM $\frac{SDU}{CPS}$ = 0.71
6000 SDU 0

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc

GAMMA RAY	DEPTHS	S.L.S.DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ----- 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 12 Sukunka 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

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PR-SUKUNKA 77 (3) A BP-12

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S.B.R. DENSITY CALIPER
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 12 Sukunka 77
STATE British Columbia COUNTRY Canada
Permanent Datum Ground level Elev. ___ m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.3 m. above P.D.
GRID REF. E ___ N ___ R.L. ___

Run No.	Depth Scale	1	20:1	
Date		12.8.77		
First Reading		475 m		
Last Reading		0		
Interval Measured		7 Details		
Casing BPB		18.4 m		
Casing Driller		18.9 m		
Depth Reached		475.71m		
Bottom Driller		475.18m		
Mud Nature		Quik-Gel		
S.G.	Viscosity	-		
Bit Size	1	HQ to TD	to	to
	2	to	to	to
	3	to	to	to
Casing Size	1	4" to 62'	to	to
	2	to	to	to
Rm @ Meas.Temp.		- @	@	@
Rmf @ Meas.Temp.		@	@	@
Rmc @ Meas.Temp.		@	@	@
BHT		-		
Operating Time		7 hrs		
Truck No.		RV 28/42		
Recorded By		P.J. Waters		
Witness		P. Raymant		

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REMARKS

Changes in Mud Type or Additional Samples			
Date	Sample No		
Depth - Driller			
Type Fluid in Hole			
Dens	Visc		
ph	Fluid Loss ml		
Source of Sample			
Rm @ Meas.Temp	@ °F	@ °F	
Rmf @ Meas.Temp	@ °F	@ °F	
Rmc @ Meas.Temp	@ °F	@ °F	
Source Rmf	Rmc		
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C Sec	Norm	Sonde No	Source No.
Caliper	7 DETAILS		2¼	1	-	119	-
SBRD	7 DETAILS		2¼	1	-	119	M5567

CALIPER	DEPTHS	S.B.R. DENSITY	
7" ---------- 2"		680 CPS	360

7" ---------- 2"		680 CPS	360
CALIPER	DEPTHS	S.B.R. DENSITY	

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 12 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

PR-SUKUNKA 77(3)A

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H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 12 Sukunka 77
STATE British Columbia **COUNTRY** Canada

Permanent Datum Ground level **Elev.** m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.3 m. above P.D.

GRID REF E N RL

Run No.	1		
Depth Scale	20:1		
Date	12.8.77		
First Reading	475 m		
Last Reading	0		
Interval Measured	7 Details		
Casing BPB	18.4 m		
Casing Driller	18.9 m		
Depth Reached	475.71m		
Bottom Driller	475.18m		
Mud Nature	Quik-Gel		
SG. Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 62'	to	to
2	to	to	to
Rm @ Meas Temp	- @	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	-		
Operating Time	7 hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

fold here

REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth-Driller				
Type Fluid in Hole				
Dens.	Visc.			
ph.	Fluid Loss		ml	
Source of Sample				
Rm @ Meas.Temp.	@ °F		@ °F	
Rmf @ Meas.Temp.	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source : Rmf	Rmc			
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down
HRD	115	9200-6200	7200-4200

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm	Sonde No	Source No
HRD	7 DETAILS		2¼	1	-	15	HR2

DEPTHS H.R. DENSITY

9200 CPS 6200

DEPTHS 7200 CPS 4200

H.R. DENSITY

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BOREHOLE BP # 12 Sukunka 77
STATE British Columbia
COUNTRY Canada

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PR. SUKUNKA 77(3)A.

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S.L.S. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 12 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor 0.3m. above P.D.

GRID REF E ____ N ____ RL ____

Run No. | Depth Scale	1 | 20:1		
Date	12.8.77		
First Reading	475 m		
Last Reading	0		
Interval Measured	7 Details.		
Casing BPB	18.4 m		
Casing Driller	18.9 m		
Depth Reached	475.71m		
Bottom Driller	475.18m		
Mud Nature	Quik-Gel		
S.G. | Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 62'	to	to
2	to	to	to
Rm @ Meas Temp	- @	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	7 hrs.		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date | Sample No.		
Depth - Driller		
Type Fluid in Hole		
Dens. | Visc.		
ph. | Fluid Loss	ml	
~~Source of Sample~~		
Rm @ Meas Temp	@ °F	@ °F
Rmf @ Meas.Temp.	@ °F	@ °F
Rmc @ Meas.Temp	@ °F	@ °F
Source : Rmf | Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm	Sonde No	Source No
SLSD	7 DETAILS		2¼	1	0.71	119	M5567
GAMMA	7 DETAILS		2¼	2	1.29	119	-

DEPTHS

S.L.S. DENSITY

6000 SDU 0

DEPTHS

6000 SDU 0

S.L.S. DENSITY

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BOREHOLE BP # 12 Sukunka 77
STATE British Columbia
COUNTRY CANADA

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GAMMA RAY SLS. DENSITY
SBR. DENSITY DETAIL LOGS

COMPANY B.P. Canada Ltd. - Coal Group
BOREHOLE BP # 13 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.5 m. above P.D.

GRID REF. E ____ N ____ R.L ____

Run No. / Depth Scale	1 / 20:1		
Date	17 Aug 77		
First Reading	329m		
Last Reading	0		
Interval Measured	1&1 Details		
Casing BPB	Rods in bh.		
Casing Driller	1084'		
Depth Reached	329 m		
Bottom Driller	1200'		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to 330m	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	2 hrs.		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS Details on depth.

Changes in Mud Type or Additional Samples

Date	Sample No		
Depth-Driller			
Type Fluid in Hole			
Dens. / Visc.			
ph / Fluid Loss		ml	
Source of Sample			
Rm @ Meas.Temp.	@ °F	@ °F	
Rmf @ Meas.Temp.	@ °F	@ °F	
Rmc @ Meas.Temp.	@ °F	@ °F	
Source Rmf / Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm.	Sonde No.	Source No.
Gamma	1 Detail		2½	2	1.33	119	-
slsd	1 Detail		2½	1	0.66	119	M5567
sbrd	I Detail		2½	2	-	119	M5567

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GAMMA RAY S.LS. DENSITY
CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 13 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ___ m.
Log measured from Ground level m. above P.D
Drilling measured from Rig Floor m above P.D.

GRID REF E ___ N ___ RL ___

Run No	1		
Depth Scale	200:1		
Date	17 Aug 77		
First Reading	329 m		
Last Reading	0		
Interval Measured	329 m		
Casing BPB.	Rods in bh.		
Casing Driller	1084'		
Depth Reached	329m		
Bottom Driller	1200'		
Mud Nature	Quik-Gel		
SG	-		
Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	HQ to 1084'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	2 hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS Log required to Bird seam, outside rods if safe.

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss		ml	
Source of Sample				
Rm @ Meas Temp	@ °F		@ °F	
Rmf @ Meas Temp	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source Rmf	Rmc			
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm	Sonde No	Source No
Gamma	328	0	9	2	1.33	119	-
SLSD	329	1	9	1/3	0.66	119	M5567
Caliper- in rods.							

DEPTH ERROR AT SURFACE: Please add one metre to all depths.

GAMMA RAY	DEPTHS	S.L.S. DENSITY
0 API 100		3500 SDU 0

DEPTHS		
0 API 100		3500 SDU 0
GAMMA RAY		S.L.S. DENSITY

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GAMMA RAY L.S. DENSITY
GENERAL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 14a Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev ___ Ft.
Log measured from Ground level Ft above P.D.
Drilling measured from Rig Floor 1 Ft.above P.D.

Run No	1		
Depth Scale	200:1		
Date	25 Aug 77		
First Reading	509 m		
Last Reading	0		
Interval Measured	509 m		
Casing BPB	20 m		
Casing Driller	-		
Depth Reached	509.76m		
Bottom Driller	510.33m		
Mud Nature	Quik-Gel		
S G	-		
Viscosity			
Bit Size 1	HQ to 505.5	to	to
2	BQ to TD	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	rods to td	HQ to 452.5	BQ to TD
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	4½ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth — Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss	ml		
~~Source of Sample~~				
Rm @ Meas Temp		@ °F	@ °F	
Rmf @ Meas Temp		@ °F	@ °F	
Rmc @ Meas Temp		@ °F	@ °F	
Source Rmf	Rmc			
Rm @ BHT		@ °F	@ °F	
Rmf @ BHT		@ °F	@ °F	
Rmc @ BHT		@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down
L.S.D.	500m	1300-0	3500-0
L.S.D.	492m	3500-500	1300-0
L.S.D.	164m	6500-2500	3500-500

~~Equipment Data~~

Run No	Tool Type	Tool Position	Other
1	Gamma	Free	-

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C Sec	Norm	Sonde No	Source Number
Gamma	509	0	9	2	-	15	-
LSD	509	1	9	1/3	-	15	LS2

HQ Core Barrel still IN borehole - Driller cored thro' it to obtain floor of seam (chamberlain).

GAMMA RAY	DEPTHS	L.S. DENSITY
0 CPS 100		6500 CPS 2500

GAMMA RAY	DEPTHS	L.S. DENSITY
0 CPS 100		3500 CPS 0

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BOREHOLE BP # 14a Sukunka 77
~~FIELD~~ British Columbia
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GAMMA RAY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 14a Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev ___ Ft.
Log measured from Ground level Ft. above P.D.
Drilling measured from Rig Floor 1 Ft. above P.D.

Run No. / Depth Scale	1 / 20:1		
Date	25 Aug 77		
First Reading	509 m		
Last Reading	0		
Interval Measured	10 Details		
Casing BPB	20 m		
Casing Driller	-		
Depth Reached	509.76 m		
Bottom Driller	510.33 m		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to 505.5m	to	to
2	BQ to TD	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	-		
Operating Time	4¼ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

fold here

REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No.				
Depth — Driller				
Type Fluid in Hole				
Dens / Visc				
ph / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp.	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source. Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other
1	Gamma	Free	-

Logging Data

Log	Depths m From	To m	Speed m/min	T C Sec	Norm	Sonde No.	Source Number
Gamma	10 DETAILS		2¼	2	-	15	-

GAMMA Detail in Chamberlain in-correct, perhaps due to HQ core barrel.

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BOREHOLE BP # 14a Sukunka 77
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BPB

H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 14a Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground Level Elev ___ Ft.
Log measured from Ground Level ___ Ft. above P.D.
Drilling measured from Rig Floor 1 Ft. above P.D.

Run No.	1		
Depth Scale	20:1		
Date	25 Aug 77		
First Reading	509 m		
Last Reading	0		
Interval Measured	10 Details		
Casing BPB	20 m		
Casing Driller	-		
Depth Reached	509.76m		
Bottom Driller	510.33m		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to 505.5	to	to
2	BQ to TD	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	4½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

fold here

REMARKS

Changes in Mud Type or Additional Samples

Date / Sample No		
Depth — Driller		
Type Fluid in Hole		
Dens / Visc.		
ph / Fluid Loss	ml	
~~Source of Sample~~		
Rm @ Meas Temp	@ °F	@ °F
Rmf @ Meas Temp.	@ °F	@ °F
Rmc @ Meas Temp	@ °F	@ °F
Source. Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down
HRD	500	2000-1000	3000-1000
HRD	450	4000-2400	2000-1000
HRD	170	5100-3500	4000-2400

Equipment Data

Run No	Tool Type	Tool Position	Other
1	Gamma	Free	-

Logging Data

Log	Depths m From	To	Speed m/min	T.C Sec	Norm	Sonde No.	Source Number
HRD	10 DETAILS		2¼	2	-	15	HR2

DEPTHS

H.R. DENSITY

5100 CPS 3500

DEPTHS

3000 CPS 1000

H.R.DENSITY

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~~FIELD~~ British Columbia
COUNT~~Y~~ry Canada STATE

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L.S. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 14a Sukunka 77
STATE British Columbia COUNTRY Canada
Permanent Datum Ground level Elev ___ Ft.
Log measured from Ground Level Ft. above P.D
Drilling measured from Rig Floor 1 Ft. above P.D.

Run No.	1		
Depth Scale	20:1		
Date	25 Aug 77		
First Reading	509 m		
Last Reading	0		
Interval Measured	10 Details		
Casing BPB	20 m		
Casing Driller	-		
Depth Reached	509.76m		
Bottom Driller	510.33m		
Mud Nature	Quik-Gel		
S.G. Viscosity			
Bit Size 1	HQ to 505.5m	to	to
2	BQ to TD	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	4½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J. Waters		
Witness	P. Raymant		

fold here

REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No				
Depth – Driller					
Type Fluid in Hole					
Dens.	Visc				
ph	Fluid Loss		ml		
~~Source of Sample~~					
Rm @ Meas Temp		@	°F	@	°F
Rmf @ Meas Temp		@	°F	@	°F
Rmc @ Meas Temp		@	°F	@	°F
Source Rmf	Rmc				
Rm @ BHT		@	°F	@	°F
Rmf @ BHT		@	°F	@	°F
Rmc @ BHT		@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down
L.S.D.	500m	1200-0	2400-0
L.S.D.	450m	2900-500	1200-0
L.S.D.	170m	6500-2500	2900-500

~~Equipment Data~~

Run No	Tool Type	Tool Position	Other
1	Gamma	Free	-

Logging Data

Log	Depths From	Depths To m	Speed m/min	T C Sec	Norm	Sonde No	Source Number
L.S.D	10 Details		2¼	1	-	15	1s2

COMPANY B.P. Canada Ltd - Coal Group
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~~FIELD~~ British Columbia
COUNTRY Canada STATE

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GAMMA RAY SLS DENSITY
CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 15 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D
Drilling measured from Rig Floor m. above P.D.

GRID REF E N RL

Run No	1		
Depth Scale	200:1		
Date	16 Aug 77		
First Reading	549 m		
Last Reading	0		
Interval Measured	549 m		
Casing BPB	7 m		
Casing Driller	7.62 m		
Depth Reached	550.1 m		
Bottom Driller	1475'		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 25'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5½ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss	ml		
~~Source of Sample~~				
Rm @ Meas Temp		@ °F	@ °F	
Rmf @ Meas Temp		@ °F	@ °F	
Rmc @ Meas Temp		@ °F	@ °F	
Source Rmf	Rmc			
Rm @ BHT		@ °F	@ °F	
Rmf @ BHT		@ °F	@ °F	
Rmc @ BHT		@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm	Sonde No	Source No
Gamma	548	0	9	2	1.36	119	-
SLSD	549	1	9	1/3	0.65	119	M5567
Caliper	549	5	9	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ----- 2"

CALIBRATION DATA

Jig No 012 Value 400 @2"Diam.
Jig mark shown at above value x0.3

CALIBRATION DATA

Jig Cal. date 31.7.77 Jig value 410 SDU @ 1.46 gr/cc
Jig No. 011 Span 1000 NORM $\frac{SDU}{CPS}$ = 0.71
6000 SDU o

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ----- 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 15 Sukunka 77
STATE British Columbia
COUNTRY Canada

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H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 15 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev.___m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E___ N___ RL___

Run No	1		
Depth Scale	20:1		
Date	16 Aug 77		
First Reading	549 m		
Last Reading	0		
Interval Measured	9 Details		
Casing BPB	7 m		
Casing Driller	7.62m		
Depth Reached	550.1 m		
Bottom Driller	1475'		
Mud Nature	Quik-Gel		
SG	-		
Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 25'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5½ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS___

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss	ml		
Source of Sample				
Rm @ Meas.Temp		@ °F		@ °F
Rmf @ Meas Temp		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm	Sonde No	Source No
HRD	9 Details		2½	1	-	15	HR2

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S.B.R. DENSITY
CALIPER DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 15 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E N R.L

Run No / Depth Scale	1 / 20:1		
Date	16 Aug 77		
First Reading	549 m		
Last Reading	0		
Interval Measured	9 Details		
Casing BPB	7 m		
Casing Driller	7.62m		
Depth Reached	550.1m		
Bottom Driller	1475'		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 25'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	5½ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

fold here

REMARKS

Changes in Mud Type or Additional Samples

Date / Sample No				
Depth-Driller				
Type Fluid in Hole				
Dens / Visc				
ph / Fluid Loss		ml		
~~Source of Sample~~				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source . Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C. Sec	Norm	Sonde No	Source No
Caliper	9 Details		2¼	1	-	119	-
SBRD	9 Details		2¼	1	-	119	M5567

CALIPER	DEPTHS	S.B.R. DENSITY
7" ---------------- 2"		680 CPS 360

CALIPER	DEPTHS	S.B.R. DENSITY
7" ---------------- 2"		680 CPS 360

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 15 Sukunka 77
STATE British Columbia
COUNTRY Canada

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PR-SUKUNKA 77(3)A.

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S.L.S. DENSITY
GAMMA RAY DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 15 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum GROUND LEVEL Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E N RL

Run No / Depth Scale	1 / 20:1		
Date	16 Aug 77		
First Reading	549 m		
Last Reading	0		
Interval Measured	9 Details		
Casing BPB	7 m		
Casing Driller	7.62m		
Depth Reached	550.1 m		
Bottom Driller	1475'		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to td	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 25'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT			
Operating Time	5½ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth-Driller				
Type Fluid in Hole				
Dens. Visc.				
ph. Fluid Loss	ml			
Source of Sample				
Rm @ Meas.Temp	@ °F		@ °F	
Rmf @ Meas.Temp	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source. Rmf Rmc				
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	TC Sec	Norm	Sonde No	Source No
Gamma	9 Details		2¼	2	1.36	119	-
SLSD	9 Details		2¼	1	0.65	119	M5567

DEPTHS

GAMMA RAY
150 ---- API ---- 0
S.L.S. DENSITY
6000 SDU 0

[redacted]

DEPTHS

150 API 0
GAMMA RAY
6000 ---- SDU ---- 0
S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 15 Sukunka 77
STATE British Columbia
COUNTRY Canada

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GAMMA RAY SLS DENSITY CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 16 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.6m. above P.D.

GRID REF E N RL.

Run No	DepthScale	1 200:1	
Date		31 Aug 77	
First Reading		610 m	
Last Reading		0	
Interval Measured		610 m	
Casing BPB		39 m	
Casing Driller		130'	
Depth Reached		611 m	
Bottom Driller		611.12m	
Mud Nature		Quik-Gel	
SG	Viscosity	-	
Bit Size 1		HQ to TD	to
2		to	to
3		to	to
Casing Size 1		4" to 130'	to
2		to	to
Rm @ Meas Temp		@	@
Rmf @ Meas Temp		@	@
Rmc @ MeasTemp		@	@
BHT		-	
Operating Time		5½ hrs	
Truck No		RV 28/42	
Recorded By		P.J.Waters	
Witness		P.Raymant	

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss		ml	
Source of Sample				
Rm @ Meas Temp		@ °F	@ °F	
Rmf @ Meas Temp		@ °F	@ °F	
Rmc @ Meas Temp		@ °F	@ °F	
Source Rmf	Rmc			
Rm @ BHT		@ °F	@ °F	
Rmf @ BHT		@ °F	@ °F	
Rmc @ BHT		@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm	Sonde No.	Source No.
Gamma	609	0	9	2	1.36	119	-
SLSD	610	1	9	1/3	0.77	119	M5567
Caliper	610	35	9	1	-	119	-

Excessive caving at top of bh has disrupted log.
Chart paper slip at 120 m rendering slsd-gamma 40cm too deep, caliper on depth.

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU	0 7" ---- 2"

CALIBRATION DATA
Jig No. 012 Value 400 @ 2" Diam.
Jig mark shown at above value ×0.3

CALIBRATION DATA
Jig Cal date 25Aug77 Jig value 395 SDU @ 1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.79
6000 SDU 0

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU	0 7" ---- 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 16 Sukunka 77
STATE British Columbia
COUNTRY Canada

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H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 16 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.6 m. above P.D.

GRID REF E N RL

Run No	1		
DepthScale	20:1		
Date	31 Aug 77		
First Reading	610 m		
Last Reading	0		
Interval Measured	9 Details		
Casing BPB	39 m		
Casing Driller	130'		
Depth Reached	611m		
Bottom Driller	611.12 m		
Mud Nature	Quik-Gel		
SG	Viscosity -		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to 130'	to	to
2	to	to	to
3	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5½ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No		
Depth-Driller			
Type Fluid in Hole			
Dens	Visc		
ph	Fluid Loss	ml	
~~Source of Sample~~			
Rm @ Meas Temp	@ °F	@ °F	
Rmf @ Meas Temp	@ °F	@ °F	
Rmc @ Meas Temp	@ °F	@ °F	
Source Rmf	Rmc		
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C. Sec	Norm	Sonde No	Source No
HRD	9 Details		2¼	1	-	15	HR2

DEPTHS

H.R. DENSITY

7200 CPS 4200

7200 CPS 4200

H.R. DENSITY

DEPTHS

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 16 Sukunka 77
STATE British Columbia
COUNTRY Canada

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H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 17 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev ___ Ft.
Log measured from Ground level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No / Depth Scale	1 / 20:1			
Date	26 Aug 77			
First Reading	410 m			
Last Reading	0			
Interval Measured	5 Details			
Casing BPB	35 m			
Casing Driller	-			
Depth Reached	412 m			
Bottom Driller	411.78m			
Mud Nature	Quik-Gel			
SG / Viscosity	-			
Bit Size 1	HQ to TD	to	to	
2	to	to	to	
3	to	to	to	
Casing Size 1	4" to	to	to	
2	to	to	to	
Rm @ Meas Temp	@	@	@	
Rmf @ Meas Temp	@	@	@	
Rmc @ Meas Temp	@	@	@	
BHT	-			
Operating Time	4½ hrs			
Truck No	RV 28/42			
Recorded By	P.J.Waters			
Witness	P.Raymant			

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth — Driller				
Type Fluid in Hole				
Dens	Visc			
ph.	Fluid Loss		ml	
~~Source of Sample~~				
Rm @ Meas Temp		@ °F		@ °F
Rmf @ Meas Temp.		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source. Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

~~Equipment Data~~

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T.C. Sec	Norm	Sonde No.	Source Number
HRD	5 Details		2¼	1	-	15	hr2

	DEPTHS	H.R. DENSITY
		9200 CPS 6200

	DEPTHS	H.R. DENSITY
		7200 CPS 4200

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 17 Sukunka 77
~~FIELD~~ British Columbia
COUNTry Canada STATE________

MY 41485 R

RE. SUKUNKA 77 (3)A.

GAMMA RAY SLS DENSITY CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 17 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev ____ Ft.
Log measured from Ground level Ft. above P.D.
Drilling measured from Rig Floor Ft. above P.D.

Run No. / Depth Scale	1 / 200:1		
Date	26 Aug 77		
First Reading	410m		
Last Reading	0		
Interval Measured	410m		
Casing BPB	35 m		
Casing Driller	-		
Depth Reached	412 m		
Bottom Driller	411.78m		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	-		
Operating Time	4½ hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.		
Depth — Driller			
Type Fluid in Hole			
Dens	Visc		
ph.	Fluid Loss ml		
Source of Sample			
Rm @ Meas Temp.	@ °F	@ °F	
Rmf @ Meas Temp.	@ °F	@ °F	
Rmc @ Meas Temp	@ °F	@ °F	
Source Rmf	Rmc		
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C Sec	Norm.	Sonde No.	Source Number
Gamma	410	0	9	2	1.36	119	-
SLSD	411	1	9	1/3	0.78	119	M5567
Caliper	411	28	9	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" --- 2"

CALIBRATION DATA
Jig No. 012 Value 400 @ 2 Diam.
Jig mark shown at above value ±0.3

CALIBRATION DATA
Jig Cal. date 25 AUG77 Jig value 395 SDU @ 1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.79
6000 SDU 0

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDu 0	7" --- 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 17 Sukunka 77
~~xxxxx~~ British Columbia
COUNTry Canada STATE ____

MY 41485 R

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H. R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 18 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground Level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E N RL

Run No / Depth Scale	1 / 20:1		
Date	5 Sept 77		
First Reading	680m		
Last Reading	0		
Interval Measured	8 Details		
Casing BPB	rods 471m		
Casing Driller	-		
Depth Reached	681.8m		
Bottom Driller	681.23m		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	rods to 467.87	to	to
3	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5 3/4hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples				
Date Sample No				
Depth–Driller				
Type Fluid in Hole				
Dens Visc				
ph Fluid Loss ml				
Source of Sample				
Rm @ Meas.Temp	@ °F		@ °F	
Rmf @ Meas Temp	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source Rmf Rmc				
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down
HRD	470m	4000-2400	7200-4200

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C. Sec	Norm	Sonde No	Source No
HRD	8 Details		2¼	1	-	15	Hr2

DEPTHS | H. R. DENSITY
4000 CPS 2400

7200 CPS 4200
DEPTHS | H. R. DENSITY

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STATE British Columbia
COUNTRY Canada

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BPB

GAMMA RAY SLS DENSITY
CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 18 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E N RL

Run No.	1		
Depth Scale	200:1		
Date	5 Sept 77		
First Reading	680m		
Last Reading	0		
Interval Measured	680m		
Casing BPB	rods 471m		
Casing Driller	-		
Depth Reached	681.8m		
Bottom Driller	681.23m		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	rods to 467.87	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5 3/4 hrs		
Truck No.	Ry 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth–Driller				
Type Fluid in Hole				
Dens	Visc.			
ph	Fluid Loss	ml		
~~Source of Sample~~				
Rm @ Meas Temp	@	°F	@	°F
Rmf @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source Rmf	Rmc			
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm	Sonde No	Source No
gamma	680	0	9	2	1.36	119	-
SLSD	681	1	9	1/3	0.77	119	M5567
Caliper	681	460	9	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU	0

CALIBRATION DATA

Jig No. 012 Value 400 @ 2 Diam.
Jig mark shown at above value x 0.3

GAMMA RAY
HOLE SIZE CORRECTION

CALIBRATION DATA

Jig Cal. date 25 Aug77 Jig value 395 SDU @ 1.47 gr/cc
Jig No. 011 Span 0.50 NORM $\frac{SDU}{CPS}$ = 0.79
6000 SDU 0

COAL BULK DENSITY
grm/cc

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" - - - 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 18 Sukunka 77
STATE British Columbia
COUNTRY Canada

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GAMMA RAY SLS DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group

BOREHOLE BP # 18 Sukunka 77

STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.

Log measured from Ground level m. above P.D.

Drilling measured from Rig Floor m. above P.D.

GRID REF E N R.L.

Run No. / Depth Scale	1 / 20:1		
Date	5 Sept 77		
First Reading	680 m		
Last Reading	0		
Interval Measured	8 Details		
Casing BPB	rods 471m		
Casing Driller	-		
Depth Reached	681.8m		
Bottom Driller	681.23m		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	rods to 467.87	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5 3/4 hrs		
Truck No	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth – Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp		@ °F		@ °F
Rmf @ Meas Temp		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down
SLSD	470m	3500-0 SDU	6000-0

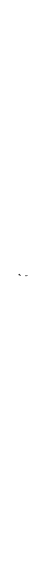
Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T.C. Sec	Norm	Sonde No	Source No
Gamma	8 Details		2¼	2	1.36	119	-
SLSD	8 Details		2¼	1	0.77	119	M5567

	DEPTHS	
		GAMMA RAY 150 - - - - - - API - - - - - - - 0 S. L. S. DENSITY
		3500 SDU 0



	DEPTHS	
		150 API 0
		GAMMA RAY 6000 - - - - - - - SDU - - - - - - - 0 S. L. S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group

BOREHOLE BP # 18 Sukunka 77

STATE British Columbia

COUNTRY Canada

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SBR DENSITY CALIPER DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 18 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. ____ m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor ____ m. above P.D.

GRID REF E ____ N ____ RL ____

Run No / Depth Scale	1 20:1		
Date	5 Sept 77		
First Reading	680m		
Last Reading	0		
Interval Measured	8 Details		
Casing BPB	rods 471 m		
Casing Driller	-		
Depth Reached	681.0m		
Bottom Driller	681.23m		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	rods to 467.87	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5 3/4 hrs		
Truck No.	RV 28/42		
Recorded By	P.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth - Driller				
Type Fluid in Hole				
Dens.	Visc			
ph	Fluid Loss	ml		
Source of Sample				
Rm @ Meas Temp	@ °F		@ °F	
Rmf @ Meas Temp	@ °F		@ °F	
Rmc @ Meas Temp	@ °F		@ °F	
Source Rmf	Rmc			
Rm @ BHT	@ °F		@ °F	
Rmf @ BHT	@ °F		@ °F	
Rmc @ BHT	@ °F		@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down
SBRD	470m	400-220cps	680-360

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm	Sonde No	Source No
SBRD	8 Details		2¼	1, 2*	-	119	M5567
Caliper	8 Details		2¼	1	-	119	-

* SBRD has Time Constant of 2 in rods.

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 18 Sukunka 77
STATE British Columbia
COUNTRY Canada

MY (8) 58360 R

PR-SUKUNKA 77(3)A

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GAMMA RAY SLS DENSITY
CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 19 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground Level Elev. ____ m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor 0.3 m. above P.D.

GRID REF. E ____ N ____ RL ____

Run No.	1		
Depth Scale	200:1		
Date	4 Sept 77		
First Reading	666m		
Last Reading	0		
Interval Measured	666m		
Casing BPB	22.2m		
Casing Driller	-		
Depth Reached	666.2m		
Bottom Driller	666.21m		
Mud Nature	Quik-Gel		
S.G.	-		
Viscosity			
Bit Size	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	6½ hrs		
Truck No.	RV 28/42		
Recorded By	P.C. Waters		
Witness	F.Rayment		

fold here

REMARKS

Changes in Mud Type or Additional Samples				
Date	Sample No			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss		ml	
Source of Sample				
Rm @ Meas Temp		@ °F		@ °F
Rmf @ Meas Temp		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm.	Sonde No	Source No
Gamma	666	0	9	2	1.36	119	-
SLSD	667	1	9	1/3	0.77	119	M5567
Caliper	667	20	9	1	-	119	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" --- 2"

CALIBRATION DATA

Jig No 012 Value 400 @2" Diam.
Jig mark shown at above value x0.3

CALIBRATION DATA

Jig Cal. date 25 Aug 77 Jig value 395 SDU @ 1.47 gr/cc
Jig No 011 Span 0.50 NORM SDU/CPS = 0.79
6000 SDU o

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" --- 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 19 Sukunka 77
STATE British Columbia
COUNTRY Canada

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GAMMA RAY SLS DENSITY DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 19 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground Level Elev. ____ m.
Log measured from Ground Level ____ m. above P.D.
Drilling measured from Rig Floor 0.3 m. above P.D.

GRID REF. E ____ N ____ RL ____

Run No	1		
Depth Scale	20:1		
Date	4 Sept 77		
First Reading	666m		
Last Reading	0		
Interval Measured	9 Details		
Casing BPB	22.2m		
Casing Driller	-		
Depth Reached	668.2m		
Bottom Driller	667.23m		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	3" to	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	6¼ hrs		
Truck No.	BV 28/42		
Recorded By	P.J. Waters		
Witness	P. Raymant		

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REMARKS

Changes in Mud Type or Additional Samples		
Date / Sample No		
Depth - Driller		
Type Fluid in Hole		
Dens / Visc		
ph / Fluid Loss	ml	
Source of Sample		
Rm @ Meas Temp	@ °F	@ °F
Rmf @ Meas Temp	@ °F	@ °F
Rmc @ Meas.Temp	@ °F	@ °F
Source Rmf / Rmc		
Rm @ BHT	@ °F	@ °F
Rmf @ BHT	@ °F	@ °F
Rmc @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm.	Sonde No	Source No.
Gamma	9 Details		2¼	2	1.36	119	-
SLSD	9 Details		2¼	1	0.77	119	M5567

DEPTHS
150 GAMMA API RAY 0
S.L.S. DENSITY
6000 SDU 0

DEPTHS
150 API 0
GAMMA RAY
6000 SDU 0
S.L.S. DENSITY

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 19 Sukunka 77
STATE British Columbia
COUNTRY Canada

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PR-Sukunka 77(3)A

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H.R. DENSITY
DETAIL LOG

COMPANY B.P. Canada Ltd- Coal Group
BOREHOLE BP # 19 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev. m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor 0.3m. above P.D.

GRID REF E N RL

Run No	1		
Depth Scale	20:1		
Date	4 Sept 77		
First Reading	666m		
Last Reading	0		
Interval Measured	9 Details		
Casing BPB	22.2m		
Casing Driller	-		
Depth Reached	668.2m		
Bottom Driller	667.21m		
Mud Nature	Quik-Gel		
SG / Viscosity	-		
Bit Size 1	5⅝ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	6½ hrs		
Truck No	RV 28/42		
Recorded By	E.J.Waters		
Witness	P.Raymant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No		
Depth-Driller			
Type Fluid in Hole			
Dens	Visc		
ph	Fluid Loss	ml	
Source of Sample			
Rm @ Meas.Temp	@ °F	@ °F	
Rmf @ Meas Temp	@ °F	@ °F	
Rmc @ Meas Temp	@ °F	@ °F	
Source Rmf	Rmc		
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	To	Speed m/min	T C Sec	Norm	Sonde No	Source No
HRD	9 Details		2¼	1	-	15	HR2

COMPANY B.P. Canada Ltd - Coal Group
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STATE British Columbia
COUNTRY Canada

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PR-SUKUNKA 77(3)A.
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S.B.R. DENSITY CALIPER
DETAIL LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 19 Sukunka 77
STATE British Columbia COUNTRY Canada

Permanent Datum Ground level Elev.____m.
Log measured from Ground level ____ m. above P.D.
Drilling measured from Rig Floor 0.3 m. above P.D.

GRID-REF E____ N____ RL____

Run No | DepthScale	1 | 20:1		
Date	6 Sept 77		
First Reading	666m		
Last Reading	0		
Interval Measured	9 Details		
Casing BPB	22.2 m		
Casing Driller	-		
Depth Reached	668.2m		
Bottom Driller	637.21m		
Mud Nature	Quik-Gel		
S.G. | Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT	-		
Operating Time	5½ hrs		
Truck No.	RV 28/42		
Recorded By	P.J. Waters		
Witness	P. Rajmant		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No			
Depth-Driller				
Type Fluid in Hole				
Dens	Visc			
ph	Fluid Loss		ml	
Source of Sample				
Rm @ Meas.Temp.		@ °F		@ °F
Rmf @ Meas Temp		@ °F		@ °F
Rmc @ Meas Temp		@ °F		@ °F
Source Rmf	Rmc			
Rm @ BHT		@ °F		@ °F
Rmf @ BHT		@ °F		@ °F
Rmc @ BHT		@ °F		@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C Sec	Norm	Sonde No	Source No
SBRD	9 Details		2¼	1	-	119	M5567
Caliper	9 Details		2¼	1	-	119	-

CALIPER	DEPTHS	S. B. R. DENSITY
7" - - - - - - - - - 2"		680 CPS 360

CALIPER	DEPTHS	S. B. R. DENSITY
7" - - - - - - - - - 2"		680 CPS 360

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 19 Sukunka 77
STATE British Columbia
COUNTRY Canada

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RE-SUKUNKA 77(3)A. BP-3

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BPB

GAMMA RAY L.S.DENSITY
CALIPER LOG

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 3 SUKUNKA 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev. m.
Log measured from Rig Floor .3 m. above P.D.
Drilling measured from Rig Floor .3 m. above P.D.

GRID REF. E N RL

Run No	I		
Depth Scale	200:I		
Date	I9.7.77		
First Reading	496 m		
Last Reading	0		
Interval Measured	496m		
Casing BPB	I8m		
Casing Driller	-		
Depth Reached	496.5m		
Bottom Driller	I630'		
Mud Nature	Quik-Gel		
S.G. / Viscosity	-		
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4½" to	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	5 hrs		
Truck No.	RV28/42		
Recorded By	P.J.Waters		
Witness	A. Bowler		

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REMARKS Repeat Section not on depth

Changes in Mud Type or Additional Samples			
Date / Sample No			
Depth - Driller			
Type Fluid in Hole			
Dens. / Visc.			
ph. / Fluid Loss	ml		
Source of Sample			
Rm @ Meas Temp	@ °F	@ °F	
Rmf @ Meas Temp	@ °F	@ °F	
Rmc @ Meas Temp	@ °F	@ °F	
Source Rmf / Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C Sec	Norm	Sonde No	Source No
Caliper	496	I0	20	I/3	-	II0	-
Gamma	495	0	9	2	I.376	II0	-
S LSD	496	I	9	I/3	0.825	II0	M5567

Gamma Calibrator value 400API

S LSD Calibrator value 398SDU

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API I50		6000 SDU 0	7-inches-2

CALIBRATION DATA

Jig No. 0I2 Value 400 @ 2 Diam.
Jig mark shown at above value ÷ I0/3

CALIBRATION DATA

Jig Cal. date 7 JUL 77 Jig value 398 SDU @ I.47 gr/cc
Jig No. 0II Span 600 NORM $\frac{SDU}{CPS}$ = 0.825
6000 SDU 0

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API I50		6000 SDU 0	7-inches-2

COMPANY B.P. Canada Ltd -Coal Group
BOREHOLE BP # 3 SUKUNKA 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

PR-SUKUNKA 77 (3)A.
BP-2

GAMMA RAY S.L.S. DENSITY
CALIPER LOG

COMPANY B.P. Canada Ltd -Coal Group
BOREHOLE BP# 2 SUKUNKA 77
STATE BRITISH COLUMBIA COUNTRY CANADA

Permanent Datum Ground level Elev.____m.
Log measured from Ground level m. above P.D.
Drilling measured from Rig Floor m. above P.D.

GRID REF E____ N____ RL____

Run No	I		
Depth Scale	200:I		
Date	20.7.77		
First Reading	670 m		
Last Reading	I m		
Interval Measured	669 m		
Casing BPB	II m		
Casing Driller	40'		
Depth-Reached	67I m		
Bottom Driller	220I'		
Mud Nature	QUIK-GEL		
SG Viscosity			
Bit Size 1	HQ to TD	to	to
2	to	to	to
3	to	to	to
Casing Size 1	4½" to 40'	to	to
2	to	to	to
Rm @ Meas Temp	@	@	@
Rmf @ Meas Temp	@	@	@
Rmc @ Meas Temp	@	@	@
BHT	-		
Operating Time	8 hrs		
Truck No	RV28/42		
Recorded By	P.J.Waters		
Witness	A. Bowler		

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No		
Depth–Driller			
Type Fluid in Hole			
Dens	Visc		
ph	Fluid Loss	ml	
Source of Sample			
Rm @ Meas Temp		@ °F	@ °F
Rmf @ Meas Temp		@ °F	@ °F
Rmc @ Meas Temp		@ °F	@ °F
Source Rmf	Rmc		
Rm @ BHT		@ °F	@ °F
Rmf @ BHT		@ °F	@ °F
Rmc @ BHT		@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths m From	Depths m To	Speed m/min	T C	Norm	Sonde No	Source No
Gamma	669	I	7	Sec 2	I.36	II9	-
SLSD	670	2	7	I/3	0.76	II9	M5567
Caliper	670	I0	20	I/3	-	II9	-

GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API I50		6000 SDU 0	7" ----- 2"

CALIBRATION DATA

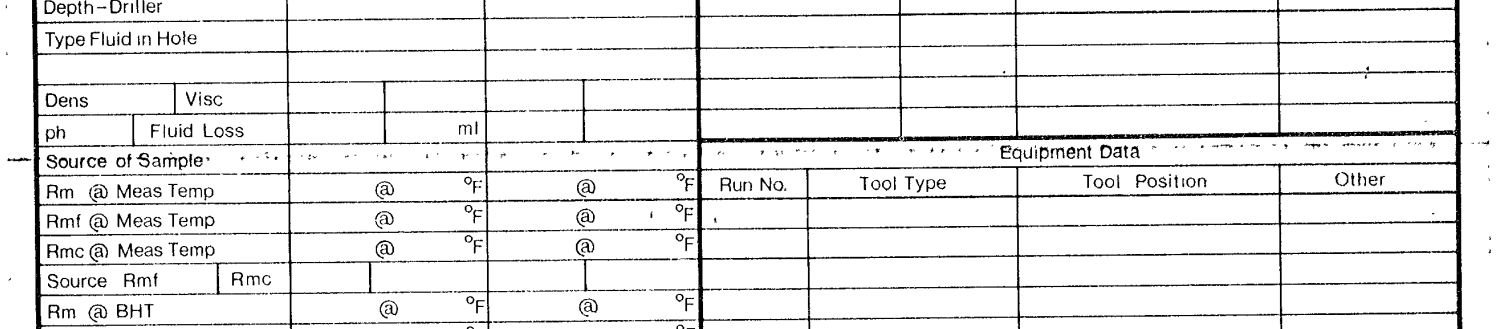
Jig No 0I2 Value 400 @ 2 Diam.
Jig mark shown at above value x0.3

CALIBRATION DATA

Jig Cal. date 7.7.77 Jig value 398 SDU @ I.47 gr/cc
Jig No 0II Span 600 NORM $\frac{SDU}{CPS}$ = 0.76
6000 SDU 0

GAMMA RAY
HOLE SIZE CORRECTION

COAL BULK DENSITY
grm/cc



GAMMA RAY	DEPTHS	S.L.S. DENSITY	CALIPER
0 API 150		6000 SDU 0	7" ----- 2"

COMPANY B.P. Canada Ltd - Coal Group
BOREHOLE BP # 2 SUKUNKA 77
STATE BRITISH COLUMBIA
COUNTRY CANADA

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