

K-Shell-Lodgepole 80(3)A

80(3)7

Lodgepole Project

Drill Hole Data

Vol. 1

C.L. # 440-445, 4729-4735

May 81

B.W. McKinstry

428

2 of 5

Appendix 11

OPEN FILE

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

00 428

CORAL COAL CORE DESCRIPTION

PROJECT AREA: LOGG SOUTH-EAST B.C.

DATE BEGIN: July 23, 1980
DATE END:

HOLE No. 301

HOLE PARTICULARS

LOCATION	Lodgepole		
	S.E. B.C.		
ELEVATION		HOLE BEARING (AZ)*	
TOTAL DEPTH	93 metres	HOLE ANGLE (°)*	90°

LOGGING

LOGS RUN	Calliper, Natural Gamma Resistivity Density
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

TOTAL	CORE DIAMETER	HQ
	CORE RECOVERED	72.53
	LENGTH CORED	83.40
	CORE RECOVERY	67 %

EXAMINATION

LOG USED	Gamma Density
No. OF SEAMS SAMPLED	
EXAMINER (S)	HK & BMW
DATE	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM DESIGN	BEDDING ANGLE (°)	SUMMARY GEOTECH			ANALYTICAL DATA							
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)			HARDNESS	FRAC. FREQ.	RQD	SAMPLE NO.	MOIST % a.s.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
1		9.30	10.7	1.4	Siltst/SS	very fine grain Sandstone, calcite on bedding plane fractures, medium grey with light grey bands, ripple bedding calcareous		29°	R4										
1		10.7	11.6	0.9	Siltst/SS	as above, becoming more sandy towards base, calcareous			R4										
1		11.6	13.11	1.51	SLTST	some very fine grain Sandstone beds, some small scale cross-bedding, 3 calcite stringers, calcite filled joint surface, calcareous		31°	R4										
2		13.11	14.17	1.06	SS	siltstone grades into very fine grain Sandstone, calcareous, rubbly towards base			R4										
2		14.17	14.92	0.75	SS	very fine grain, interbedded with siltstone, small-scale cross-beds, rubbly at centre, abundant calcite stringers, 4 joints		26°	R3										
		14.92	15.12	0.2	SS	Core Loss													
2		15.12	15.47	0.35	SS	as above			R3										
2		15.47	16.52	1.05	Siltst	dark grey, no apparent bedding, calcareous, 5 calcite lined cross-joints			R3										
2		16.52	16.60	0.08	Siltst/SS	siltstone is dark grey, Sandstone is salt and pepper, very fine grain, light grey, bedding planes offset 1-2 cm along fracture zones, small scale cross-beds		35°	R3										
2/3		16.60	17.85	1.25	Siltst/SS	as above with abundant calcite stringers, calcareous			R3										
3		17.85	18.03	0.18	SS	very fine grain, well bedded, calcareous, salt and pepper, light grey, one calcite lined bedding plane fracture, two calcite stringers		24°	R4										
3		18.03	18.47	0.44	Siltst/SS	interbedded as previously described, 2 joints, both calcite lined		25°	R3										
3		18.47	18.66	0.19	SS	fine grain, some coaly material on joint faces, also calcite, calcareous													
3		18.66	18.81	0.15	Siltst	rubble													
3		18.81	19.31	0.50	Siltst/SS	interbedded as previously described, with irregular fracture calcite lined on 2 fractures			R3										

ALL LINEAR UNITS IN METRES

* MEASURED FROM THE HORIZONTAL PLANE
 † = R &/OR S — GOLDEN ASSOCIATES HARDNESS CODE
 - RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 301

FILE No BA-267
 REVISED MAY 1980

CORE & COAL CORE DESCRIPTION

PROJECT
AREA

LODGEPOLE
S.F. B.C.

HOLE No.
CONTINUED

301

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR FAULT SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
										a. b.	residual	d.b.	d.b.	d.b.		
3		19.31	19.76	0.45	Siltst/SS	as above										R3
3		19.76	19.96	0.20	Siltst/SS	rubble as above										R3
3		19.96	20.66	0.70	Siltst/SS	as above, 8 cross joints, calcite lined, some small-scale cross-beds, calcareous (Sandstone more calcareous than Siltstone)										R3
3		20.66	22.15	1.49	Siltst/SS	9 cross joints, as above, undulating bedding, small-scale cross-beds	28°									R4
4		22.15	22.77	0.62	Siltst/SS	as above, some calcite stringers, 3 bedding plane fractures Sandstone is very calcareous, siltstone is slightly calcareous	30°									R4
4		22.77	23.39	0.62	SS	very fine grain, bedding is wavy undulating, few silty layers, very dark grey, some pyrite and some calcite lining fractures	31°									R4
4		23.39	24.43	1.04	Siltst	pyrite sheen on fracture surfaces, some iron-staining, 4 joints										R3
4		24.43	25.53	1.10	Siltst/SS	interbedded as previously described, some rip-up clasts, undulose bedding, calcite lined fractures										R4
5		25.53	26.03	0.50	Siltst/SS	Sandstone is very fine grained, carbonaceous plant material, slightly calcareous, calcite stringers										R4
5		26.03	26.28	0.25	Siltst/SS	as above, becoming shaley near base	26°									R4
5		26.28	26.40	0.12	Shale	split, rubbly, sheared and polished, calcite and coal on sheared surface										
5		26.40	27.38	0.98	Siltst/SS	interbedded, very fine grain Sandstone, few shaly splits, siltstone and shale are dark grey, Sandstone is medium grey salt and pepper, 2 joints lined with calcite, 2 joints iron stained, wavy bedding	20°									
5		27.38	28.01	0.63	Siltst	sheared and polished at base, 3 joints, 2 lined with calcite and 1 coated with iron-stain	22°									R3
5		28.01	28.10	0.09	SS	fine grain, dark grey matrix, salt and pepper grains, well bedded, calcite along bedding planes and fractures, very slightly calcareous, weathers light grey	33°									R4
5		28.10	28.90	0.80	Siltst/SS	interbedded with very fine grain Sandstone, finely laminated very slightly calcareous, siltstone is very dark grey Sandstone is medium grey, 5 fractures sub-parallel to bedding hematite stain on bedding surfaces, becomes cross-bedded near base	24°									R3

ALL LINEAR UNITS IN METRES

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 301
CONTINUED

CURE & COAL CORE DESCRIPTION

PROJECT AREA	LOGGEPOLE S.E. B.C.
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HOLE No. 301 CONTINUED

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.		C.V.
										a.r.b.	residual	d.b.	d.b.	d.b.			
3		28.90	28.98	0.08	Siltst/SS	as above											R3
5		28.98	29.68	0.70	SS	very fine grain, abundant small-scale cross-beds, abundant calcite stringers, some surfaces lined with pyrite, non-calcareous, dark grey, weathers orange-brown, 3 joints	24°										R3
6		29.68	29.71	0.03	Shale	carbonaceous, very dark grey with coaly wisps, highly sheared, small-scale fold structures											R2
6		29.71	29.81	0.10	SS	as previously described											R3
6		29.81	29.86	0.07	Shale	coaly, fissile, highly polished, friable											R2
6		29.86	30.28	0.40	SS	abundant coaly material, very dark grey, non-calcareous, weathered calcite stringers, becomes rubbly toward base, platy and fissile at centre											R3
6		30.28	30.70	0.42	SS	as above with a few shaley splits											R3
		30.70	31.20	0.50	SS	lost core											
6		31.20	31.59	0.39	Coal	powdery, compacted and polished, dull with bright				31.20-31.68 m	Sample no. LP-0301-1						S2
6		31.59	32.00	0.41	Coal	lost core				11.39	.88	7.10	19.29	73.61	2.5		
6		32.00	32.50	0.50	Coal	dirty, soft, powdery, very dull											S1
6		32.50	33.12	0.62	Coal	soft, powdery, abundant polished surfaces, dull with bright bands											S2
										31.68-33.96 m	Sample no. LP-0301-2						
6		33.12	33.37	0.25	Coal	small fragments with some powder, polished bright with dull bands, shaley towards base				4.00	.58	9.48	19.07	71.45	2.5		S3
6		33.37	33.90	0.53	Shale	coaly, soft				33.37-33.90 m	Sample no. LP-0301-3 (Shale split)						R1
6		33.90	34.16	0.26	Coal	powdery, dull with bright, dull at base				1.82	.70	76.65					
		34.16	35.76	1.60	Coal	lost core											
7		35.76	35.96	0.20	Shale	coaly, very dark grey											R2
7		35.86	37.42	1.56	Shale	becomes more silty and harder towards base, non-calcareous, medium grey, bedding becomes indistinct near base, 5 joints	20°										R3
7		37.42	38.92	1.50	Shale	as above											R3
7		38.92	40.02	1.10	Shale	carbonaceous plant fragments, rubbly, medium grey, weathers light grey, fractures are irregular and clean, non-calcareous											
8		40.02	40.58	0.56	Shale	carbonaceous, medium grey, bedding is indistinct, 5 joints, borders on rubble											R3

ALL LINEAR UNITS IN METRES

↑ R#/OR S — GOLDER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 301 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT
AREA

LODGEPOLE
S.E. B.C.

HOLE No.
CONTINUED

301

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OF 8

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH % VM %		FC %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
8		40.98	40.78	0.20	Shale	lost core										
8		40.78	41.06	0.28	Shale	as above										
8		41.06	41.81	0.75	Shale	silty with some very silty bands, very dark gray coaly shale, siltstone is medium grey, breccia-filled fractures near base, becomes very rubbly near base	24°									
8		41.81	42.01	0.20		lost core										
8		42.01	43.48	1.47	Shale	some silty bands, dark grey, carbonaceous, 5 cross joints, 2 bedding plane fractures	28°									
8		43.48	43.95	0.47	Shale	as above										
9		43.95	44.23	0.28	Shale	dark grey, carbonaceous, some coaly material along joint faces										R3
9		44.23	44.53	0.10	Shale	shear zone, shale is fissile and highly fractured										R2
9		44.53	44.63	0.30		lost core										
9		44.63	45.11	0.48	Shale	as previously described										H3
9		45.11	45.49	0.38	Shale	as above										R3
9		45.49	46.29	0.80	Siltst.	some shaley bands, joint faces are polished on some surfaces, joints										R4
9		46.29	47.17	0.88	Siltst	some coaly specks, some pyrite, becoming increasingly coaly towards base, semi-stick core	29°									R4
9		47.17	47.71	0.54	Siltst	fine grain sandstone, abundant coal on bedding plane, some pyrite, coaly surfaces are polished, fissile, fractures sub-parallel to bedding, 7 joints	18°									R3
9		47.71	48.11	0.40	Siltst	as previously described										
9		48.11	48.37	0.26	Siltst/Sh	rubble with abundant coaly wisps, some calcite stringers, non-calcareous, minor amounts of pyrite on joint faces										
10		48.37	48.90	0.53	Shale	silty, dark grey, some coaly wisps, 5 joints										
10		48.90	49.11	0.21	Shale	carbonaceous, some coaly wisps on joint surfaces, polished										R3
		49.11	49.31	0.20		lost core										
10		49.31	50.51	1.20	Shale	as above										
10		50.51	50.81	0.30	Siltst/Sh	shale is carbonaceous, muddy drapes, wavy bedding, few coaly wisps	21°									R3

ALL LINEAR UNITS IN METRES

T = B&/OR S — GOLDR ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.
CONTINUED

301

CORE & COAL CORE DESCRIPTION

PROJECT
AREA

LOOSEPLE
S.E. B.C.

HOLE No.
CONTINUED

301

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OF 8

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
10		50.81	50.97	0.16	Siltst/Sh	as above										
10		50.97	51.83	0.86	Shale	carbonaceous, brecciated, becomes silty near base, some coaly wisps										R2
		51.83	52.13	0.30		lost core										
10		52.13	52.33	0.20	Siltst	with carbonaceous shaley wisps, polished joint faces, some coaly material on joint faces, carbonaceous rip-up clasts										R3
10		52.33	52.43	0.10	Siltst	as above										
10/1		52.43	53.93	1.50	Siltst/SS	Sandstone is fine grain abundant coaly material along bedding planes, highly fractured, non calcareous, some calcite along fracture surfaces, some joint surfaces are polished, becomes coaly towards base										R3
11		53.93	54.94	1.01	Siltst	some small-scale undulated bedding toward base, bedding indistinct towards top, pyrite sheen on some faces, some coaly wisps, (mostly along bedding plane)	16°									R4
11		54.94	55.48	0.54	Siltst	as above, rubbly, coaly surfaces are polished										R4
11		55.48	56.06	0.58	Siltst	as above, becoming less coaly, bedding plane fractures are clean	22°									R4
11		56.06	56.36	0.30	Siltst	carbonaceous shale splits, very rubbly										R3
11		56.36	57.19	0.83	Shale	silty, carbonaceous, dark gray										R3
		57.19	57.39	0.20		lost core										
12		57.39	57.58	0.19	Shale	as above, becomes silty										
12		57.58	59.08	1.50	SS/Siltst	Sandstone is fine grain, calcite on fractures, plant material along bedding	16°									R4
12		59.08	59.21	0.13	Siltst/SS	core is rubbly, as above										
		59.21	60.31	1.10		lost core										
12		60.31	60.81	0.50	SS	abundant coaly material, fine grain, rubble, polished coal along joints										
12		60.81	60.94	0.13	SS	as above										
		60.94	61.74	0.80	SS	lost core										
12		61.74	63.04	1.30	SS	fine to medium grain, abundant coaly material joint surfaces have polished coal, some calcite on polished surfaces, upper 0.4 m rubbly										R5

ALL LINEAR UNITS IN METRES

f:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION [%]

FF — FRACTURE FREQUENCY

HOLE No.
CONTINUED

301

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEPOLLE
AREA	S.F. B.G.

HOLE No.	301
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS 1
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
		63.04	63.24	0.20		lost core										
12		63.24	63.29	0.05	SS	becoming medium to coarse grain, less coaly										R4
12		63.29	63.42	0.13	SS	some slickensided coaly fractures (2), medium to coarse grain	27°									
13		63.42	63.85	0.43	SS	coarse grain, massive, bedding indistinct polished coaly fractures, slightly calcareous										R3
13		63.85	65.07	1.22	SS	medium grain, rubbly, light grey, some carbonaceous wisps, siltstone bands near base, some calcite stringers	22°									
13		65.07	65.68	0.61	SS	medium grain, medium grey, some small scale cross-beds, salt and pepper	15°									R4
13		65.68	65.78	0.10	SS	fine to medium grain, massive										R3
13		65.78	65.89	0.11	SS	rubble as above										
13		65.89	66.22	0.33	SS	as above, semi-stick										R3
13		66.22	66.65	0.43	SS	salt and pepper, medium grey, medium grain, 2 clean joints										R3
13		66.65	67.05	0.40	SS	sandstone medium to coarse grain, medium grey, salt and pepper, iron staining on fracture surfaces, non-calcareous	12°									R4
13		67.05	67.37	0.32	SS	rubbly as above, with coaly wisp										
		67.37	67.77	0.40		lost core										
13		67.77	69.37	1.60	SS	salt and pepper, iron-stain fractures, indistinct bedding 7 joints	32°									
14		69.37	70.33	0.96	SS	broken and rubbly near base, salt and pepper indistinct bedding										R4
14		70.33	71.50	1.17	SS	coarse grain, pyrite on fracture surface, non-calcareous										
14		71.50	71.80	0.30		lost section										
15		71.80	72.44	0.64	SS	rubble as above										
15		72.44	73.09	0.65	SS	sandstone medium-coarse grain, salt and pepper, broken	22°									R3
15		73.09	73.47	0.38	SS	Gouge										
15		73.47	73.57	0.10		lost core										
15		73.57	74.25	0.68	SS	medium-coarse grain, broken, highly fractured										

ALL LINEAR UNITS IN METRES

T-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	301
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: LODGEPOLE
 AREA: S.E. B.C.

HOLE No. 301
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING Angle (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
15		74.25	74.50	0.25		lost core										
15		74.50	75.45	0.95	SS	as above, broken some calcite filled fractures	18°									R3
16		75.45	75.62	0.17	SS	very coarse grain to conglomerate										R4
16		75.62	76.03	0.41	SS	as above but becoming coarser with coaly stringer, polished coal on fracture, some pyrite lining fractures, 2 joints, semi-stick	22°									R4
16		76.03	76.11	0.80	SS	polished coal surfaces - coarse grain	22°									R4
16		76.11	77.00	0.89		lost core										R2
16		77.00	77.37	0.37	Shale	rubby, dark grey										
16		77.37	77.65	0.28	Shale	dark grey, stick core										R2
16		77.65	77.71	0.06	SS	coarse grain, conglomerate										R4
16																
16	77.50	77.71		1.10	Shale	carbonaceous, dark grey, semi-stick, polished coaly, stringers and wispy, softer at base, becoming brecciated at base,										R1
16		78.81	79.38	0.57	Shale	silty shale, dark grey, carbonaceous										R1
17		79.38	79.70	0.32	Siltst	dark grey, shaly										R2
17		79.70	80.01	0.31	Shale	dark grey, silty, no bedding - becoming sliter at base										
17		80.01	80.14	0.13	Breccia	silty shale										
17		80.14	80.51	0.37	Siltst	becomes brecciated and rubby near base										
17		80.51	81.31	0.80	Siltst	lost core										
17		81.31	81.71	0.40	SS	fine grain, brecciated										R3
17		81.71	82.01	0.30		lost core										
17		82.01	82.49	0.38	Siltst	brecciated	36°									
17		82.49	83.26	0.77	Siltst	interbedded with very fine grain sandstone, broken Siltstone - dark grey; Sandstone - light grey, clean joints	36°									
17		83.26	83.93	0.67	Siltst	brecciated, medium grey in colour										R2-R3
18		83.93	83.97	0.04	Gouge	soft, muddy										

ALL LINEAR UNITS IN METRES

F, R, OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. 301
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT
AREA

LOGGEPOLLE
S.E. B.C.

HOLE No
CONTINUED

301

PAGE 8
OF 8

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
18		83.97	84.64	0.67	Shale	dark grey, with dark coaly band in center										
18		84.64	85.30	0.60		lost core										
18		85.30	87.00	1.7	Shale	silty-siltier towards base										R2
18		87.00	87.18	0.18	SS	very fine grain, medium grey, indistinct bedding, rubble										
18		87.18	87.25	0.07	SS	rubble as above, with some pyrite, non-calcareous										
18																
18		87.25	87.82	0.57	SS	rubble as above										
18																
18		87.82	88.17	0.35	SS	Sandstone interbedded with siltstone; sandstone - fine grain light grey, cross-bedded, siltstone - medium grey, polished pyrite on fracture surfaces	24°									R4
19		88.17	88.63	0.46	SS	medium grain, medium grey, salt and pepper, clean fractures										R4
19		88.63	89.91	1.28	SS	as above, some cross-bedding, rubbly	34°									
19		89.91	90.21	0.30		lost core										
19		90.21	91.00	0.79	SS	as above, some carbonaceous specks, sheared at top & bottom										
19		91.00	91.10	0.10		lost core										
19		91.10	91.83	0.73	SS	as above, rubbly, appears to be ground in places										
19		>1.83	92.70	0.87	SS	as above, rubbly, some carbonaceous material on polished surfaces	30°									
20		92.70	93.70	1.00	SS	fine to medium grain, salt and pepper, some coaly specks, mostly massive with some cross-beds. 7 joints. becomes very rubbly near base, no calcite along joint planes										R4
						TOTAL CORE - 83.4										
						LOST CORE - 10.87										
						% RECOVERY - 87%										
						TOTAL COAL - 6.15										
						LOST COAL - 2.01										
						% RECOVERY - 67%										

ALL LINEAR UNITS IN METRES

† -R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 -RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No
CONTINUED

301

CC & COAL CORE DESCRIPTION

PROJECT AREA LODGEPOLE S.E. B.C.

DATE BEGIN July 21, 1980
END

HOLE No. LP-D 302 PAGE 1 OF 32

HOLE PARTICULARS

LOCATION	LODGEPOLE S.E. B.C.		
ELEVATION		HOLE BEARING (AZ°)	
TOTAL DEPTH	288.58 m	HOLE ANGLE (°)*	90

LOGGING

LOGS RUN	GR, DENSITY, NEUTRON, CAL.
LOGGED BY	DAVIES
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER	HQ
CORE RECOVERED	225.76
LENGTH CORED	279.1
CORE RECOVERY	81 %

EXAMINATION

LOG USED	Gamma Density
No. OF SEAMS SAMPLED	2
EXAMINER (S)	HK & DL
DATE	July 21, 1980

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM DESIGN	▲ ANGLE (°)	SUMMARY GEOTECH			SAMPLE NO.	ANALYTICAL DATA											
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]			HARDNESS	FRAC. FRQ.	RQD		MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	C.V.					
1	9.42	9.75	0.35	Shale	silty, dark grey, plant fragments, some iron-staining in fractures, rubbly, calcareous, grades to siltstone below																			
1	9.75	10.01	0.26	Siltst	dark grey, calcareous																			
	10.01	10.36	0.35		lost core																			
1	10.36	11.50	1.14	Shale	coaly specks, silty near base, some calcite stringers carbonaceous with coaly specks and plant fragments, rubbly near base, 5 joint planes		26°																	
	11.50	12.19	0.69		lost shale																			
1	12.19	12.71	0.52	Shale	as above																			
	12.71	12.80	0.09		lost core																			
1	12.80	13.58	0.78	Siltst	shaley, calcareous, calcite lining bedding plane fractures (6), 1 calcite lined joint		25°																	
	13.58	13.72	0.14		lost core																			
1	13.72	14.21	0.49	Shale	silty, very dark grey, carbonaceous, 2 bedding plane fractures, some calcite stringers																			
	14.21	14.70	0.49		lost shale																			
2	14.70	15.24	0.54	Shale	as above, semi-stick																			
2	15.24	15.44	0.20	Siltst/Sh	interbedded siltstone/shale, dark grey, 1 joint (calcite lined)		24°																	
2	15.44	16.61	1.17	Siltst	core breaks along bedding planes, wavy bedded, small scale cross-beds, calcite lined (fractures (3) sub-parallel to bedding, shaley splits		25°																	
2	16.61	16.69	0.08	Shale	dark grey, carbonaceous, silty, with calcite stringers																			
2	16.69	17.61	0.92	Shale	silty, dark grey, carbonaceous, calcareous, irregular fracture		21°																	
	17.61	17.98	0.37		lost shale																			
2	17.98	18.57	0.59	Shale	as above, rubble																			
	18.57	18.80	0.23		lost shale																			

ALL LINEAR UNITS IN METRES

* MEASURED FROM THE HORIZONTAL PLANE
 † R &/OR S — GOLDR ASSOCIATES HARDNESS CODE
 • RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

Upper Seam Sampled - 10% of actual coal thickness (from recovered core due to upper 0.79 m of coal core missing (sampled from start of coal recovery))

HOLE No. LP-D 302

FILE No BA-267
 REVISION No. 1000

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-0302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		WIDENING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										o.r.b.	residual						
2-3		18.80	19.51	0.71	Shale	as above, semi-stick, some silty layers, silty layers have pyrite, slightly calcareous, calcite lined, joint planes (3)	28°									R3	
3		19.51	20.91	1.40	Shale	silty, very dark grey, carbonaceous, a few coaly wisps, slightly calcareous, clean joint planes										R3	
3		20.91	22.80	1.79	lost core	Shale and Coal according to log											
3		22.80	23.30	0.50	Coal	shaley, abundant polished surfaces, fissile, platy		LPD-302	1.45	.49	13.69	15.53	70.76	1.0		S5	
3		23.30	24.70	1.40		lost coal		-1									
3		24.70	25.07	0.28	Shale	coaly, platy, fissile, highly fractured, polished										R2	
3		25.07	25.15	0.08	Shale	less coaly than previous unit, harder, pyrite										R1	
3		25.15	25.92	0.77	Coal	very shaley, platy, brittle, fissile pyrite on fracture surfaces, slightly calcareous, becomes more shaley towards base		LPD-302									
								-2	1.39	.37	11.95	17.79	70.26	4.0		R1	
4		25.92	26.01	0.09	Coal	as above											
4		26.01	26.20	0.19		lost Coal											
4		26.20	27.57	1.37	Coal	bright, cleat, pyrite on some surfaces, some sheared zones, hard, brittle										R2	
		27.57	27.70	0.13		lost Coal											
4		27.70	28.50	0.80	Coal	bright, pyrite on some surfaces, sheared, hard, brittle shaley bands near base										R2	
		28.50	28.80	0.30		lost Coal											
4		28.80	29.16	0.36	Shale	dark grey, carbonaceous, plant debris, almost coaly in places, rubbly at base										R3	
		29.16	29.30	0.14		lost Shale											
4		29.30	29.49	0.19	Shale	as above, slickensides, rubbly										R2	
		29.49	29.60	0.11		lost Shale											
4		29.60	29.72	0.12	Shale	very coaly, bright coal bands, friable, some pyrite											
		29.72	29.97	0.25		lost Shale											
4		29.97	30.80	0.83	Shale	black, carbonaceous, coaly specks, pyrite along fracture planes, bright coal wisps, 3 smooth and clean joint planes, semi-stick										R3	

ALL LINEAR UNITS IN METRES

† -RA/OR S - GOLDER ASSOCIATES HARDNESS CODE

•RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-0302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-0302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	MOIST %		ANALYTICAL DATA					REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				n.r.b.	residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.		
5		30.80	31.37	0.57	Shale	dark grey to black, carbonaceous, contains plant debris, 5 joint sets, one set displays polished surface, semi-stick												R3
5		31.37	31.59	0.22	Shale	rubble, as above												R4
		31.59	32.30	0.71		lost shale												
5		32.30	32.73	0.43	Shale	rubble, dark grey, very carbonaceous with abundant plant debris on possible bedding planes, some polished surfaces occasional coaly wisps												R4
5		32.73	33.80	1.07		lost shale												
5		33.80	33.87	0.07	Shale	rubble, as above												R4
5		33.87	34.10	0.23		lost shale												
5		34.10	34.23	0.13	Shale	rubble, as above, very coaly in places												R3-R4
5		34.23	35.08	0.85		lost shale												
5		35.08	35.40	0.32	Shale	breccia, dark grey												R3
5		35.40	36.60	1.20		lost core - probably shale rubble as below												
5		36.60	36.70	0.10	Shale	black, carbonaceous, coaly wisps, polished surfaces, very rubbly												R4
		36.70	37.37	0.67		lost shale												
5		37.37	37.62	0.25	Siltst	dark grey, rubbly, 2 fracture sets, smooth and clean fractures, grades into sandstone below												R4
5		37.62	37.72	0.10	SS	very fine grain, interbedded with siltstone, siltstone is light to medium grey												R3
6		37.72	38.10	0.38	SS/Siltst	as above, mottled in places, one clean joint set, becomes rubbly at base												R3
6		38.10	39.44	1.34	SS/Siltst	as above, rubbly in lower and upper .1 m, semi-stick, 5 joint sets, calcite lining some joints, calcite stringers small scale cross-beds	10°											R3
		39.44	39.90	0.46		lost core - Sandstone/Siltstone												
6		39.90	40.12	0.22	SS/Siltst	as above, grading into more sandy unit below												R3
6		40.12	40.55	0.43	SS	fine grain, salt and pepper, medium grey, contains silty drapes and rip-up clasts, displays small-scale cross-bedding, broken												R4

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-0302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. R.C.

HOLE No.	LP-0302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.		C.V.
										a.r.b.	residual						
6		40.55	40.80	0.25		lost core - Sandstone											
6		40.80	40.87	0.07	SS	rubble, as above											
6		40.87	40.97	0.10		lost core - Sandstone											
6		40.97	41.42	0.45	SS	fine to medium grain, salt and pepper, very dark gray matrix, some small silty bands, broken core											R4
7		41.42	41.55	0.13	SS	as above, coaly along fracture planes, 2 joints											R4
7		41.55	42.40	0.85	SS	as above, broken at top, calcite lining (polished) on joint planes, some polished surfaces, 3 joint sets, pyrite on some surfaces											R3
7		42.40	42.90	0.50	SS	as above, slickensided, bedding plane fracture, with some pyrite coating, 2 other joints, 1 has pyrite platelets, minor calcite on other	20°										
7		42.90	43.30	0.40		core lost - Sandstone											
7		43.30	43.60	0.30	SS	medium to coarse grain, salt and pepper, coaly, pyrite, polished and undulating joint surface, sub-parallel to bedding, badly broken											R3
7		43.60	43.90	0.30		core lost - Sandstone											
7		43.90	44.40	0.50	SS	as above, becomes almost conglomeritic in place, calcite lining one joint plane											R3
7		44.40	45.10	0.70		core lost - Sandstone											
7		45.10	45.55	0.45	SS	as above, fracture frequency 5/0.1 metre, no calcite on joint plane, calcite stringers											R3
8		45.55	45.67	0.12	SS	as above											
8		45.67	46.30	0.63		core lost - Sandstone											
8		46.30	47.30	1.00	SS	as above, very coaly in places, broken core, highly fractured (irregular fractures), some calcite stringers											R4
8		47.30	47.73	0.43		core lost - Sandstone											
8		47.73	47.90	0.17	SS	conglomeratic, quartz pebbles up to 1 cm diameter, very coaly matrix, calcite lining joint planes, some pyrite, broken											R4
8		47.90	48.20	0.30	SS	fine to coarse grain, beds of varying grain size, dark grey matrix, coaly in place, calcite stringers, rubbly											R4-R3

ALL LINEAR UNITS IN METRES

† :RB/DB S — GOLDER ASSOCIATES HARDNESS CODE
 +RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-0302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-0302
CONTINUED	

PAGE 5
OF 32

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	residual	ASH %	V.M. %	FC %		F.S.I.	C.V.
8		48.20	49.40	1.20		core lost - Sandstone											
8		49.40	50.02	0.62	SS	coarse grain, very dark grey matrix, coaly, pyritic, rubbly, extremely badly broken at base											R4
8		50.02	50.60	0.58		core lost - Sandstone											
8		50.60	51.35	0.65	SS	medium to coarse grain, salt and pepper, very dark grey matrix, coaly wisps, pyritic, some polished surfaces along coaly bands, very rubbly											R4
8		51.35	52.30	0.95		core lost - Sandstone											
9		52.30	52.98	0.68	SS	medium grain, as above, rubbly, slightly calcareous on joint planes											
9		52.98	53.30	0.32		core lost - Sandstone											
9		53.30	53.40	0.10	SS	as above											R3
		53.40	53.98	0.58		core lost - Sandstone/Shale											
9		53.98	54.33	0.35	Shale	silty, dark grey, highly fractured, slickensided joint plane, sub-parallel to bedding, one irregular joint plane silty interbeds near base, containing shale clasts											R3
9		54.33	54.90	0.57	SS	medium grain, salt and pepper, dark grey, matrix, coaly wisps, pyritic, two irregular joint planes, one calcite lined joint plane											R4
9		54.90	55.50	0.60	SS	as above, broken											R3
9		55.50	55.60	0.10		core lost - Sandstone											
9		55.60	55.70	0.10	SS	as above, broken											R3
9		55.70	56.10	0.40		core lost - Sandstone											
10		56.10	56.98	0.88	SS	fine to medium grain, dark grey matrix, coaly specks, bright coal lenses, polished coal lined fractures, sub-parallel to bedding, calcite stringers, 2 joints highly fractured, broken core, rubbly at top											R3
10		56.98	57.60	0.62		core lost - Sandstone											
10		57.60	58.05	0.45	SS	as above, becoming finer grained towards base, increasing number of coal wisps											R4
10		58.05	58.40	0.35		core lost - Sandstone											

ALL LINEAR UNITS IN METRES

1 = RB/OR S - GOLDR ASSOCIATES HARDNESS CODE

RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-0302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. R.C.

HOLE No.	LP-D302
CONTINUED	

PAGE	5
OF	32

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
10		58.40	58.70	0.30	SS	medium to coarse grain, salt and pepper, dark grey matrix, coaly lenses, contains conglomeratic bands, (5 cm thick with pebbles up to 2.5 cm in diameter)										R4
10		58.70	59.10	0.40		core lost - Sandstone										
10		59.10	59.15	0.05	SS	rubble, as above										
10		59.15	59.60	0.45	Sh/Siltst	interbedded, shale is dark grey to black, contains plant fragments, siltstone is medium grey, finely laminated, siltstone bands exhibit small scale cross-beds, contain coaly wisps, 2 joints, one calcite lined joint, calcareous	17°									R3
10		59.60	59.66	0.06	SS	coarse grain, dark grey matrix, coaly lenses, pyrite, rubbly, could beavings, calcareous										R3
10		59.66	59.74	0.08	Sh/Siltst	interbedded as previously described, calcareous										R3
10		59.74	60.00	0.26	Sh/Siltst	core loss, calcareous										
10		60.00	60.33	0.33	SS/Siltst	interbedded, Sandstone is very fine grained, light to medium grey, shale is dark grey, mottled bedding, coal partings, rubbly, calcareous										R3
11		60.33	60.42	0.09	Shale	breccia, dark grey, coaly, calcareous										
11		60.42	61.02	0.60	SS/Siltst	very fine grain, interbedded as previously described, polished joint plane sub-parallel to bedding, one other joint plane, 2 calcite lined joint planes, calcareous	27°									R3
11		61.02	61.30	0.28	SS/Siltst	core loss										
11		61.30	61.80	0.50	SS/Siltst	interbedded as before, calcareous										
11		61.80	61.90	0.10	Siltst/SS	core loss										
11		61.90	62.53	0.63	Siltst/SS	interbedded, as above, extremely rubbly, appears brecciated in one zone, calcareous										
11		62.53	62.80	0.27	Siltst/SS	core loss										
11		62.80	63.35	0.55	Siltst/SS	rubble, Sandstone is very fine to fine grain, light grey interbedded with dark grey siltstone, some calcite lined joint planes, calcareous										R3
11		63.35	63.90	0.55	Siltst/SS	core loss										
11		63.90	64.08	0.18	Siltst/SS	as above, Sandstone beds are 3 cm thick, calcareous										
11		64.08	64.18	0.10		Gouge zone										

ALL LINEAR UNITS IN METRES

1:RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

•ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-0302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % D.F.B. residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
12		64.18	65.28	1.10	SS	fine grain, finely laminated, interbedded with dark grey siltstone, some silty bands, mottled bedding in siltstone	25°									R3
						apparent 2 cm thick gouge zone halfway down unit, calcite lined joint planes, sub-parallel to joint planes, one other joint plane two calcite lined joint, calcite lens (slickensided)										
12		65.28	65.40	0.12		core lost - Sandstone										
12		65.40	65.71	0.31	SS	as above	29°									
12		65.71	67.23	1.52	Siltst	alternating medium and dark grey bands, finely laminated, plant debris on bedding planes, calcareous, 2 joint planes, two calcite lined joints										R3
12		67.23	68.03	0.80	Siltst/SS	very fine grain sandstone interbedded, siltstone is dark grey, sandstone is light to medium grey, mottled bedding one irregular joint plane, two calcite lined joint planes										R3
13		68.03	68.90	0.87	SS/Siltst	interbedded, fine grain sandstone, light to medium grey, with dark grey siltstone, displays soft sediment deformation finely bedded (1-2 mm), fractured, microfaults rock is calcareous, microfaults are 77° to bedding, calcite lined joint planes (3), semi-stick										R3
		68.90	69.16	0.26		lost core										
13		69.16	69.63	0.47	SS/Siltst	broken core, as above										
13		69.63	70.11	0.48	SS/Siltst	as above, bedding, more regular, rubby										
13		70.11	70.81	0.70	Sh/SS	interbedded, shale is medium to dark grey, silty, shale is interbedded with siltstone to fine grain sandstone, bioturbated, one calcite lined joint set (4/15 cm), two other joint planes, broken core	28°									R3
13		70.81	71.09	0.18	SS/Siltst	interbedded, sandstone is fine grain to very fine grain, light grey, siltstone is medium grey, mottled bedded, rip-up clasts, one calcite lined joint plane, rubby										R3
14		71.09	71.30	0.21	SS/Siltst	as above, three joint planes, calcite lined for a 4th joint surface										
14		71.30	71.61	0.31	SS/Siltst	as above, broken core										
14		71.61	72.81	1.20	SS	salt and pepper, medium grey, finely laminated (1-2 mm), small scale cross-beds, calcite stringers, calcareous, two fracture sets, one of them is calcite lined, mud drapes forming part of the laminations, slick core	20°									R3
14		72.81	72.90	0.09		lost core										

ALL LINEAR UNITS IN METRES

1-RB/DR 5 — GOLDER ASSOCIATES HARDNESS CODE
 =RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-0302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.F. B.C.

HOLE No.	LP-D 302
CONTINUED	

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BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
14		72.90	73.84	0.94	SS	as above, fractured										
14/15		73.84	75.24	1.40	SS	as above, slickensided, calcite along joint, sub-parallel, to bedding, mud clasts up to 1 cm in diameter occurring in some beds	15°									R3
15		75.24	76.60	1.36	SS	as above, semi-stick, broken in places, well developed calcite filled joint set (4/8 cm), two other joint directions, mud clasts less common than above unit	16°									R3
		76.60	76.60	0.20		lost core										
15		76.80	78.25	1.65	SS	as above, slickensided, coal lined joint sub-parallel to bedding, early calcite fracture cut by later calcite fracture set, early fracture/bedding is 49°, late fracture set/bedding is 85°, stick core, coal parting at 77.35	17°									R3
15A		78.25	79.88	1.65	SS	as above, mud clasts more common again, up to 2 cm, soon to be flattened, parallel to bedding, gouge zone at 79.5										R3
16						2 cm thick, calcite stringers parallel to bedding, 3 joints unlined, 1 joint calcite lined										
16		79.88	80.90	1.02	SS	as above, stick core, mud clasts still predominate up to 5 cm long, gouge zone at 80.7, 10 cm thick	20°									
16		80.90	81.45	0.45	SS/Siltst	interbedded, medium to dark grey, siltstone, interbedded with light grey, fine grain sandstone, mottled bedding, numerous calcite stringers, slickensided coal lined fracture set sub-parallel to bedding (3/18 cm)	21°									R3
16		81.45	81.62	0.17	SS/Siltst	interbedded, as above										
16		81.62	82.30	0.68	SS	fine grain, salt and pepper, dark grey matrix, small scale cross-bedding, laminated with mud drapes calcite stringers sub-parallel to bedding reflecting joint set, dark grey, shaley band 4 cm thick at 81.95, rubbly with spots	15°									R3
17		82.30	82.57	0.37	SS	cross-laminated and cross-bedded, finely laminated (1-2 mm), 82.40-82.48 is strongly broken core, core is otherwise rubbly, fine grain, grey, strongly calcareous to moderately calcareous										R3
17		82.57	82.90	0.33	I	lost core										
17		82.90	83.80	0.90	SS	as above, in places medium grey, salt and pepper, weakly calcareous, very rubbly										
		83.80	84.00	0.20		lost core										

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 # — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-0302
CONTINUED	

FILE No BA-212A
REVISED Nov 1978

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE 1°	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS [†]
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
										e.r.f.	residual					
17	84.00	84.21	0.21	SS		semi-stick, as above, mud clasts 1-15 cm long, flattened along bedding plane, some drough cross-bedding, beds are 2-3 cm thick, laminations still prevalent, medium grain										R3
17	84.21	84.47	0.26	SS		as above, rubbly, slight calcareous										
17	84.47	85.44	0.97	SS		very rubble, mud clasts common, medium grain, salt and pepper, 2-3 cm thick beds, small scale trough cross-bedding										R3
17	85.44	85.94	0.50	Sh/SS		interbedded shale/sandstone bed thicknesses are 1-2 m (get a black and white banded rock), channelling of shale units by sandstone, 1-2 mm long lensoid sandstone averaging in shale, sandstone clasts in shale	11°									R3
17	85.94	86.03	0.09			lost core										
17	86.03	86.68	0.65	SS/Sh		interbedded sandstone/shale as above, sandstone more predominant than above, weakly calcareous, calcite fracture fillings very thin (< 1 mm thick), rubbly										R3
17	86.68	86.79	0.11			lost core										
17	86.79	86.87	0.08	SS/Sh		interbedded, bedding thickness is 2-3 cm, sandstone bed has numerous mud clasts, wavy lamination in shale beds Shale - dark grey, very fine grain, sandstone - light grey, fine to medium grain, slickensided surfaces on shale partings										R3
17	86.87	86.95	0.08			lost core										
17A 18	86.95	87.38	0.43	SS		minor shale laminations, some very thin shale beds appear load-cast, slickensided surfaces on shale partings, shale laminations are 1-2 mm wide, sandstone light grey, fine grain, calcareous (weakly to moderately) rubbly										R3 - R4
18	87.38	87.63	0.25	SS		as above										
18	87.63	87.83	0.20	Shale		dark grey, very fine grain, rubbly										SS
18	87.83	88.51	0.68	SS		with wispy shale partings (2-3 mm thick), slickensides on shale partings, as described at 86.95 - 87.38	18°									R4
18	88.51	88.83	0.32	SS		as above, broken core, slickensides on shale partings										
18	88.83	88.93	0.10	SS		as above, very rubbly										
18	88.93	89.02	0.09	Coal		shaley, rubble, black										
18	89.02	89.99	0.07	SS		fine grain, medium grey, salt and pepper, 1 joint set (3 joints/5 cm)										

ALL LINEAR UNITS IN METRES

† - RB/OR S - GOLDER ASSOCIATES HARDNESS CODE

-RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEROLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ BODING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.		
18		89.09	89.63	0.54	Shale	breccia, with sandy interbeds, very broken brecciated zone, gouge, dark grey											
18		89.63	90.09	0.46	Shale	breccia, as above											
		90.09	90.50	0.41		lost core											
18		90.50	90.75	0.25	Coal	bright, hard, some pyrite flakes											S5
18		90.75	91.39	0.64	Coal	bright with dull, soft, sheared near top											S2
19		91.39	91.73	0.34	Coal	as above			LPD-502-3	3.32	.91	12.24	18.03	69.75	5.0		
19		91.73	92.07	0.34	Coal	mostly dull, very soft											S1
19		92.07	92.47	0.40	Coal	mostly bright sheared, hard											S2
19		92.47	92.77	0.30	Coal	dull with bright, hard											S9
19		92.77	92.97	0.20	Coal	shaley, dull											R1
19		92.97	93.35	0.38	Coal	soft, bright with dull											S2
		93.35	95.10	0.75		lost core (could be anywhere between marker blocks)											
19		95.10	95.84	0.74	Coal	dull with bright bands, hard											RT
19		95.84	95.96	0.12	Coal	extremely soft, powdery, dull											S1
19		95.96	96.33	0.37	Coal	bright, sheared, friable											S3
19		96.33	96.74	0.41	Coal	bright with dull											S2
19		96.74	96.97	0.23	Coal	dirty, slicked, sheared, hard, dull, very dirty											R2
		96.97	97.20	0.23		lost coal											
19		97.20	97.63	0.43	Coal	mostly bright, sheared near base											S2
		97.63	98.20	0.57		lost coal			PD-502-4	3.20	.77	11.78	17.54	70.68	2.0		
20		98.20	98.50	0.30	Sh/SS	rubble, obviously reworked, likely cavings											
20		98.50	99.10	0.60		lost coal											
20		99.10	99.16	0.06	Coal	bright, sheared, soft											S1
20		99.16	99.41	0.25	Shale	slickensided, dark grey, some coaly stringers											R2
20		99.41	99.87	0.46	Coal	mostly bright, shaley and sheared near base											S2

ALL LINEAR UNITS IN METRES

R# / OR S — GOLDER ASSOCIATES HARDNESS CODE

*ROD — ROCK QUALITY DESIGNATION (%)

— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT
AREALODGEPOLE
S.E. B.C.HOLE No
CONTINUED

LP-D302

PAGE 11
OF 32

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.r.b.	residual						
20		99.87	100.07	0.20	Coal	as above											S2
20		100.07	101.15	1.08	Coal	sheared, bright											R1
20		101.15	102.40	1.25		lost coal											
20		102.40	102.94	0.54	Coal	as above											R1
20		102.94	103.52	0.58	Shale	coaly, slickensided, hard, dark grey											R2
20		103.52	103.52	0.20	Coal	bright with dull, soft											S1
		103.52	104.30	0.78		lost coal											
20		104.30	104.59	0.29	Shale	dark grey, hard, coaly, sheared											R2
20		104.59	105.22	0.63	Coal	sheared, bright											S3
20		105.22	105.44	0.22	Coal	bright with dull, hard, shaley											S4
21		105.44	105.71	0.27	Coal	dull with bright, shaley, semi-stick core											S4
		105.71	105.80	0.09		lost coal			LPO-302-4	3.20	.77	11.78	17.54	70.68	2.0		
21		105.80	106.30	0.50	Coal	bright with dull, semi-stick core, very shaley											S5
21		106.30	106.91	0.61	Shale	coaly, semi-stick, some slickensided surfaces, plane fragments											R1
21		106.91	107.07	0.16	Coal	dull with bright, shaley, fragmented											S5
21		107.07	107.26	0.19	Coal	powdery, bright											S1
21		107.26	107.79	0.53	Coal	as above											
21		107.79	107.89	0.10	Coal	shaley, dull grey with some bright bands, pyrite, blocky											S5
21		107.89	108.25	0.36	Coal	bright with dull, compact, hard, shaley in places, pyrite											S3
21		108.25	108.42	0.17	Coal	dull, powdery, compact											S1
		108.42	108.80	0.38		lost coal											
21		108.80	109.22	0.42	Coal	bright, friable, shaley in parts, pyrite, semi-compact											S3
21		109.22	109.42	0.20	Coal	semi-stick, bright with occasional dull bands, pyrite	28°										R2
21		109.42	110.06	0.64	Coal	compact, shaley in sections, abundant pyrite, bright with very occasional dull (dull in shaley bands)											R1
		110.06	110.40	0.34		lost coal											

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No
CONTINUED

LP-D 302

FILE No BA-212A
REVISED Nov 1978

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
22		110.40	110.52	0.12	Coal	as above, blocky										R1
22		110.52	111.82	1.30	Coal	bright with dull, compact										S1
22		111.82	111.92	0.10	Coal	blocky, bright, abundant pyrite, fairly good cleat			LPD-302-4							S3
22		111.92	111.95	0.03	Shale	parting, dull, grey, coaly, pyrite rich										S5
22		111.95	112.00	0.05	Coal	crumbly, bright, soft										S1
22		112.00	112.08	0.08	Coal	bright, hard, stick-core										S5
22		112.08	112.19	0.11	Coal	rubbly, dull with bright, slightly shaley										S5
22		112.19	112.39	0.20	Shale	split, pyrite rich, coaly - bright coal	19°									S5
		112.39	112.74	0.35		lost shale										
22		112.74	112.97	0.23	Coal	compact, bright, pyrite rich										S4S3
22		112.97	113.15	0.18	Coal	compact, dull, very soft										S1
22		113.15	113.40	0.25	Shale	coaly, dull, brown to black, compact										S2
22		113.40	113.86	0.46	Siltst	coaly, coaly plant fragments common, semi-stick, some crenulations along coal splits, dull grey-brown, very fine grain, crumbly										R3
		113.86	113.96	0.10		lost core										
22		113.96	114.30	0.34	Siltst	coaly, more compact than above unit, abundant plant fragments, dull brown-grey, hard, very fine grain										R3
22		114.30	114.90	0.60	Siltst	dull grey-brown, plant fragments common, strongly gouged through entire zone										S5
23		114.90	114.95	0.05	Gouge zone	coaly shale										
23		114.95	115.17	0.22	Shale	coaly, semi-stick, dark grey to black, finely laminated, pyrite, plant fragments	11°									R3
23		115.17	115.32	0.15	Shale	gouge, as above, but gouged										R3
23		115.32	115.36	0.04	Coal	bright, hard, lense, crumbly										S3
23		115.36	115.66	0.30	SS	fine grain to very fine grain, light grey, with medium dark grey mud drapes, finely laminated (< 1 mm), rubbly, one calcite lined joint, irregular jointing										R3
23		115.66	116.01	0.35	Siltst	dark grey, rubbly, very fine grain, two joint planes, plant debris	25°									R3

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT AREA: LOUPEPOLE S.E. B.C.

HOLE No. LP-0302 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r. b. residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
23		116.01	116.40	0.39		lost core										
23		116.40	116.90	0.50	Stst	as above, GYDR in joint planes, abundant plant fragments along bedding planes, coal wisps, two joint planes										R3
23		116.90	117.16	0.26		lost core - Gouge Zone										
23		117.16	117.30	0.14	Gouge Zone	siltstone as above, with abundant coal material, coal is bright (SS), platy										
23		117.30	117.94	0.64	SS	silty at top grading down into fine grain sandstone, coal lens at 116.65, gouge zone 4 cm thick occurs at 116.98, semi-slick with badly broken-up base, two joint sets with one having pyrite on it										
23		117.94	118.09	0.15	SS	fine grain, medium grey, salt and pepper										R4
23		118.09	118.34	0.25	Gouge Zone	shale and sandstone fragments, crumbly										
23		118.34	118.51	0.17	Shale	dark grey, very fine grain, grades into sandstone below one irregular joint	29°									R2
23		118.51	119.04	0.53	SS	very fine grain to fine grain, medium grey, mottled bedding becomes rubbly at base										R3
23		119.04	119.38	0.34	SS	siltstone interbedded with it, sandstone is fine grain, light grey, siltstone is medium grey, mottled bedding, rubbly	26°									R4
24		119.38	119.50	0.12		lost core										
24		119.50	119.58	0.08	Gouge Zone	occasional dark grey shale fragments	16°									
24		119.58	120.21	0.63	Sh/SS	interbedded, shale is silty, dark grey, very fine grain, (R2) and sandstone is light to medium grey, very fine grain, containing occasional shale clasts, some small cross-beds, bed thickness is 3 cm, sandstone becomes less frequent downwards	19°									R2
24		120.21	120.28	0.07	Gouge Zone	shale fragments as described above										
24		120.28	120.38	0.10	Shale	as above, polished fracture planes, sub-parallel to bedding										R2
24		120.38	120.80	0.42	SS	calcareous, fine grain, light grey, with occasional calcite stringers, rubbly										R3
24		120.80	120.88	0.08	Gouge Zone	shale fragments, silty, dark grey, pyritic, very thin feldspar lens at base of gouge zone										

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. LP-0302 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. / residual	ASH %	V.M. %	FC %	F.S.I.	C.V.	
24		120.88	121.01	0.13	Siltst	dark grey, polished fracture planes, sub-parallel to bedding, no obvious bedding, broken										R3
24		121.01	121.08	0.07	Gouge Zone	sandy siltstone, slightly brecciated, grey, very fine grain										
24		121.08	121.26	0.18	SS	silty, grey, fine grain, broken core (angular fragments)										
24		121.26	122.30	1.04	Siltst	dark grey, stick to semi-stick, very fine grain, fractured, coaly plant fragments, gypsum on joint surfaces, joint and fractures are slightly polished, no observable bedding traces										R3
24		122.30	122.49	0.19	SS	very fine grain, laminated, grey, non-calcareous, laminae 1-3 mm thick, stick core										R4
24		122.49	122.63	0.14	Siltst	semi-stick as at 121.26 to 122.30										
24		122.63	122.70	0.08	Siltst	as above										
24/25		122.70	123.54	0.83	SS/Siltst	Interbedded, very fine grain, stick core, sandstone is cross-bedded and 2-3 cm thick bands, separated by 2-6 cm wide dark grey, very fine grain, massive siltstone	15°									R4
25		123.54	124.30	0.76	Siltst	dark grey to black, very fine grain with coaly plant fragments, semi-stick, one joint at 45° to core axis, fractures filled with white crystalline calcite										R4
25		124.30	124.86	0.56	Siltst	as above, rubbly, massive										
25		124.86	125.10	0.24	Siltst	as above, blocky										
25		125.10	125.54	0.44	SS/Siltst	Interbedded, very fine grain sandstone, siltstone, (2-5 cm sandstone) 2-3 cm siltstone, siltstone, dark grey, sandstone medium grey										R3
25		125.54	127.09	1.55	SS/Siltst	as above, 1-2 cm sandstone, 1-2 cm siltstone, cross-bedded, semi-stick, some plant fragments in siltstone	25°									R3
26		127.09	127.39	0.30	SS/Siltst	as above, stick	27°									
26		127.39	128.55	1.14	Siltst	plant fragments, ferns, dark grey, massive, 1 joint slickensided, ground core at bottom										
		128.55	129.25	0.72	Siltst	as above, 3 joints, gypsum on joint, 8 cm gouge zone, rubbly at base										
		129.25	129.85	0.33	SS	medium grey, fine grain, rubbly, ground core, small scale cross-bedding										R4
26		129.85	130.59	0.74	Siltst	as above										

ALL LINEAR UNITS IN METRES

† RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. / residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
26		130.59	131.22	0.63	SS	medium grey, fine grain, laminated to cross bedded, 1 calcite joint, broken core										R4
27		131.22	132.23	1.01	SS	as above, micro-lamination shows disrupted bedding, slumping, load structures and possibly some burrowing	37°									
27		132.23	132.56	0.33	SS	one fracture surface, medium grey, fine grain, some grey silty bands, slick core										
27		132.56	133.78	1.22	Siltst	dark grey, fine grain, occasional bands of medium grey sandier material, 2 fractures, calcite lined, ground core at top and bottom, stick core	37°									R4
		133.78	134.10	0.32		lost core										
27		134.10	134.56	0.46	Siltst	as above, ground core at top										
27		134.56	135.11	0.55	SS/Siltst	interbedded, laminations give it dark grey to light grey striped appearance, ground core at bottom	36°									R4
28		135.11	135.41	0.30		lost core										
28		135.41	135.76	0.35	SS/Siltst	as above, strongly ground up core, rubbly										
		135.76	135.96	0.20		lost core										
28		135.96	136.43	0.47	SS	medium grey, fine grain, thin, white calcite stringer, parallel to core axis, broken core, carbonaceous plant fragments and coaly stringers, rubbly										
28		136.43	136.74	0.31	Gouge Zone	strongly brecciated but compact core										
		136.74	137.44	0.70		lost core										
28		137.44	138.48	1.04	SS	medium grey, fine grain, laminated, broken core, ground core at top, cross-bedded, load-cast structures	15°									R4
28		138.48	138.58	0.10		Gouge Zone										
		138.58	138.98	0.40		lost core										
28		138.98	139.17	0.19	SS	salt and pepper, medium grain, ground core, rubbly										
		139.17	139.57	0.40		lost core										
28		139.57	140.03	0.46	SS	salt and pepper, medium grain, 0.5 to 1.00 cm coal lenses bright, some polishing on coal, cross-bedding										R3
28		140.03	140.27	0.24	Siltst	coaly stringers and fragments, soft, bright, compact core dull grey to dark grey, some polishing on coal stringers, coal stringers 0.5 cm thick										

ALL LINEAR UNITS IN METRES

† :R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 -RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
29		140.27	140.87	0.60		lost core											
29		140.87	141.12	0.25	SS	salt and pepper, medium grain, broken core, coaly fragments, one fracture											R3
29		141.12	141.59	0.47	SS	dark grey to black, medium grain, very carbonaceous to coaly, compact, rubbly in places											
		141.59	142.99	1.40		lost core											
29		142.99	143.74	0.75	Shale	coaly, dark grey to black, compact, very coaly gouge zones in places											
29		143.74	144.61	0.87	SS	medium grey, fine to medium grain, very carbonaceous, coaly stringers, compact core	60°										R2
29		144.61	145.27	0.66	Sh/SS	coaly, strongly brecciated at base, sandstone ls salt and pepper, medium grain, in irregular bands											R2
29/ 30		145.27	146.64	1.37	Sh/SS	as above, coal ls dull to bright and polished in places, powdery to flakey coal, compact core											R2
		146.64	146.94	0.30		lost core											
30		146.94	147.16	0.22	SS	dark grey, fine to medium grain, carbonaceous, coaly stringers less than 1 mm, coal ls bright and powdery, broken core											R2
30		147.16	148.15	0.99	SS	medium grey, medium grain, less carbonaceous than previous units, coaly stringers are parallel to bedding and cross-cutting, less than 1 mm thick, polishing on coal parallel to bedding, blocky core, semi-stick, broken core at base, salt and pepper	28°										R3
		148.15	148.50	0.35		lost core											
30		148.50	148.80	0.30	SS	dark grey to black, fine grain, very carbonaceous to coaly, broken core, rubbly											
30/ 31		148.80	150.10	1.30	SS	salt and pepper, medium grain, equigranular, weakly laminated, 2 fractures sub-parallel to core axis, semi-stick to blocky core, broken in places, slightly carbonaceous	29°										R3
31		150.10	150.41	0.31	SS	salt and pepper, medium grain, equigranular, 4 fractures	21°										R4
31		150.41	151.26	0.85	SS	light grey, fine grain, broken and rubbly											R3
31		151.26	151.69	0.43	SS	as above, semi-stick, bedding indistinct, two clean joint surfaces											R3

ALL LINEAR UNITS IN METRES

1 - RB/ORS - GOLDER ASSOCIATES HARDNESS CODE
 - RD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT
AREA

LODGEPOLE
S.E. B.C.

HOLE No. LP-D 302
CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS 1	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
31		151.69	152.97	0.88	SS	rubbly, as above, pyrite flakes on fracture surfaces, becomes more coarse grain at base										R2
31		152.97	152.80	0.23	SS	rubble as above, broken core										
31		152.80	153.11	0.31	Shale	carbonaceous, dark grey, powdery to flaky, polished coaly stringers										R1
		153.11	153.41	0.30		lost core										
31		153.41	153.98	0.57	SS	dark grey siltstone laminae give a streaky appearance to medium grey, fine grain cross-bedded sandstone, broken core, Pyrite flakes on fractures, calcite stringers										R3
31		153.98	155.28	1.30	SS	as above, breccia zone at top, broken and powdery at base	16°									
31		155.28	156.19	0.91	SS	as above	23°									R3
31		156.19	157.24	1.05	SS	as above, pyrite and calcite on two fracture planes, broken core	14°									
32		157.24	158.56	1.32	SS	as above, stick core, five pyrite/calcite filled fractures	17°									R3
32		158.56	158.66	0.10	SS	as above, rubble										
33		158.66	159.00	0.34		lost core										
33		159.00	160.35	1.35	SS	strongly altered possible gouge, compact core, alteration makes it appear to be brecciated										R3
33		160.35	160.60	0.45		lost core										
33		160.60	161.85	1.05	SS	as above	12°									
34		161.85	162.16	0.31	SS	medium grain, salt and pepper, calcite filled fractures, pyrite on some fractures, calcareous	8°									R1
34		162.16	163.10	0.94	SS	as above, broken and ground at centre										R3
34		163.10	163.40	0.30		lost core										
34		163.40	163.86	0.46	SS	as above, calcareous	18°									
34		163.86	164.75	0.87	SS	Gouge, medium grain, salt and pepper, calcareous										
34		164.75	165.88	1.13	SS	Gouge, medium grain, salt and pepper, calcareous										
35		165.88	166.17	0.19	SS	medium grain, rubble, salt and pepper, some pyrite flakes and some calcite										

ALL LINEAR UNITS IN METRES

1 = RB/OR 5 — GOLDER ASSOCIATES HARDNESS CODE

#RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. LP-D 302
CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LOUXEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. h.	% residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
35		166.17	166.28	0.11	SS	rubble, as above, broken and powdered											R1
35		166.28	166.48	0.20	Siltst/SS	lost core											
35		166.48	166.72	0.24	Siltst/SS	breccia with pyrite and coal on fractures, sandstone - light grey, siltstone - medium grey											R1
35		166.72	167.46	0.73	SS	Gouge, powdery as previously described											R1
35		167.46	167.76	0.30	SS	medium to coarse grain, salt and pepper, calcareous, calcite filled fractures											R3
35		167.76	168.76	1.00	SS	as above, pyrite on fracture (shoon), broken and powdered at base											R2
35		168.76	169.46	0.70		lost core											
35		169.46	169.93	0.47	SS	sandstone as above, rubbly becoming brecciated at base											
36		169.93	170.38	0.45		lost core											
36		170.38	170.71	0.33	SS	salt and pepper, medium grain, pyrite flakes on fracture surfaces, non-calcareous	26°										
36		170.71	171.96	1.25	Siltst	breccia, dark grey, powdery, broken at base, some polished fracture surfaces, coaly specks											R2
36		171.96	172.26	0.30		lost core											
36		172.26	173.37	1.11	Siltst	breccia as above, becoming sandy	15°										R2
36		173.37	173.77	0.40		lost core											
36		173.77	174.34	0.57	Siltst/SS	interbedded siltstone, dark grey, finely laminated, sandstone, light grey, fine grain, rubbly and brecciated at base	31°										R3
		174.34	174.94	0.60		lost core											
37		174.94	175.84	0.90	Siltst/SS	sandstone is fine grain, medium grey with pyrite specks, siltstone is dark grey, shows fine laminations, rubbly at top, breccia in centre, rubbly at base, non-calcareous with calcite lined fractures	31°										
37		175.84	176.14	0.30		lost core											
37		176.14	176.74	0.60	SS	fine to medium grain, some breccia bands, calcite lined fractures											R3
37		176.74	176.85	0.11	Shale	carbonaceous, dark grey, polished on surface, slightly calcareous											

ALL LINEAR UNITS IN METRES

† - RB/OR 5 - GOLDER ASSOCIATES HARDNESS CODE
 - RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT AREA	LOGEPOLE S.E., B.C.
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HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	% residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
37		176.65	177.33	0.48	SS	coaly on fracture surfaces, highly fractured, salt and pepper, medium grey, light blue oxide alteration on some surfaces											R3
37		177.33	178.25	0.92	SS	as above, massive, bedding is indistinct, coaly breccia zone near base											R3
38		178.25	178.90	0.65		lost core											
38		178.90	180.00	1.10	SS	fine grain, rubbly, highly fractured, coaly on fracture surfaces											R1
38		180.00	180.50	0.50		lost core											
38		180.50	180.63	0.13	SS	very coaly, broken											
38		180.63	181.73	1.10	SS	gouge zone, compact, shaley and coaly in places,	30°										R1
38		181.73	181.90	0.17	Gouge	powdery, soft, sandstone, some fragments of sandstone, coaly, shaley											
38		181.90	182.36	0.36	SS	breccia with shaley fragments, coal along fracture planes											
38		182.36	182.70	0.34	SS	very coaly, highly brecciated at base, solid at top	40°										
39		182.70	185.32	0.62	SS	rubble, very fine grain with shale and siltstone, coal on fracture planes, very rubbly, coal surfaces are polished											
39		183.32	183.89	0.57	SS	gouge, compact, fine to medium grain, salt and pepper, medium grey, weathers light grey											R1
39		183.89	184.26	0.87	SS	gouge, powdered and fragmented, as above											
		184.26	184.50	0.24		lost core											
39		184.50	185.60	1.10	SS	gouge, as above, compact at top and base, highly fractured at centre											
39		185.60	185.67	0.07	SS	gouge, soft, powdery, abundant coal											
		185.67	186.17	0.50		lost core											
39		186.17	186.29	0.12	Shale	gouge, silty, compact											R1
39		186.29	187.75	1.46	SS	fine to medium grain, gouge, salt and pepper, light grey few shaley fragments											R2
39		187.75	188.08	0.33	SS	gruge as above											

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQ — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEPOLF
AREA	S.E. D.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.	
											a.r.b.	residual						
40		188.08	189.04	0.96	SS	gouge, soft and pepper, medium grain, dark grey to black siltstone fragments, compact												R2
40		189.04	189.54	0.50		lost core												
		189.54	190.94	1.14		lost core												
40		190.94	191.25	0.31	SS	as above, gouge, very rubbly and broken, core at top												R3
40		191.25	191.95	0.70	SS	gouge, compact strongly broken with coaly stringers, 1cm wide coal is polished and bright												
		191.95	192.75	0.80		lost core												
40		192.75	193.60	0.85	SS	as above, broken and rubbly core												
40		193.60	194.20	0.60		lost core												
40		194.20	194.47	0.27	SS	ground, broken and rushed core, pyrite on some fractures very soft												R2
40		194.47	195.67	1.20		lost core												
41		195.67	195.87	0.20	SS	compact sandstone, gouge, pyrite on fractures, no coal												R2
		195.87	195.95	0.07		lost coal												
41		195.95	196.13	0.18	Shale	carbonaceous, compact, somewhat sandy, black			LPD-302-5	2.01	.70	11.98	17.86	70.16	5.5			R2
41		196.13	196.37	0.24	Coal	bright with dull, soft and powdery												S2
41		196.37	196.57	0.20	Shale	carbonaceous, black, stick core, compact												R1
41		196.57	197.37	0.80		lost core												
41		197.37	197.77	0.40	Coal	dull with bright, soft and crumbly												S1
41		197.77	189.20	0.45	Coal	shaley, compact, polished, slickensided surfaces on coaly fractures												S3
41		198.20	198.30	0.10	Coal	bright with dull, soft, fragmented and rubbly			LPD-302-6	6.49	1.28	17.07	18.49	64.44	5.0			S1
41		198.30	198.70	0.40		lost core												
42		198.70	198.94	0.24	Coal	compact, bright, flaky when broken												S1
42		198.94	199.20	0.16	Coal	compact, dull, soft, powdery when broken												S1
42		199.20	199.71	0.51	Coal	dull with bright, dull is powdery when broken, bright is flaky when broken												S1

ALL LINEAR UNITS IN METRES

1-R/R/DR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION [%]

FF — FRACTURE FREQUENCY

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.		
41		199.71	199.85	0.14	Coal	bright, flaky											51
41		199.85	199.95	0.10	Coal	slightly shaly, hard, bright, pyrite											53
41		199.95	200.11	0.16	Coal	bright with dull compact, very powdery and soft when broken											
41		200.11	200.31	0.20		lost core											
41		200.31	200.86	0.54	Coal	compact, dull with bright, bright flaky when broken, dull powdery when broken											51
41		200.86	200.98	0.12	Coal	dull, compact, powdery											52
41		200.98	201.03	0.05	Coal	bright, soft											51
42		201.03	201.21	0.18	Coal	dull, compact, powdery											52
42		201.21	201.60	0.39	Coal	soft, dull with bright											51
42		201.60	201.80	0.20		lost core											
42		201.80	201.96	0.16	Coal	same as above											
42		201.96	203.26	1.30	SS	soft and pepper, medium grain, carbonaceous with coal bands and stringers, bright, soft and flaky, 2-3 mm wide sandstone - R3, 4 fractures; clean core is broken and rubbly at base											
42		203.26	203.38	0.12	SS	broken core as above, white carbonate on fractures											
		203.38	203.98	0.60		lost core											
42		203.98	205.56	1.58	SS	as above, compact gouge, 8 thin white calcite stringers, indistinct bedding											R2
43		205.56	205.88	0.32	SS	gouge, medium grey, medium grain, compact but fractured											R1
43		205.88	206.68	0.80	SS	as above, 6 fractures, 2 filled with coal			34*								
43		206.68	207.15	0.47	SS	gouge, 3 fractures, 2 with carbonaceous lining											
		207.15	207.35	0.20		lost core											
43		207.35	207.81	0.46	SS	fine grain, medium grey, equigranular, massive, 3 shear zones, low \angle to core axis, stick core											R2
43		207.81	208.24	0.43	SS	gouge, medium grey, medium grain, compact											
43		208.24	208.80	0.56	SS	fine grain, equigranular, massive, stick core, 2 fractures, rubbly at bottom, some ground core											R3

ALL LINEAR UNITS IN METRES

† :R&ORS — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEPOL
AREA	S.E. B.C.

HOLE No.	LP-0 302
CONTINUED	

BOX No.	DEPTH BY TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		MODIFIED ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
43		208.80	209.46	0.66	SS	gouge, as above, 3 micro-fractures, calcite filled, 45° to core axis.										
43		209.46	209.78	0.32	SS	medium grey, fine grain, massive, equigranular, 3 fractures clean, broken core, 1 fracture calcite filled										R3
43		209.78	210.36	0.58	SS	gouge as above										
44		210.36	210.94	0.58	SS	fine grain, medium grey, equigranular, massive, two calcite coated joints, one thin breccia zone 1/2 way, 3 clean joints										R3
44		210.94	211.16	0.22	SS	breccia as above, abundant polished fracture surfaces, compact, pebbly when broken, calcite on one joint										R2
44		211.16	211.81	0.65	SS	fine grain, medium to dark grey, highly fractured, fractures lined with calcite, some breccia near top, sandstone is massive										R3
44		211.81	212.15	0.34	SS	as above, less fractured, calcite lined on the fractures	37°									
44		212.15	213.12	0.92	SS	fine grain, dark grey, a few orange specks, 6 calcite lined joints, some pyrite on fracture surfaces, massive										R2
44		213.12	213.21	0.09	SS	fine grain, shear zone, 1 cm black carbonaceous shale split in centre, carbonaceous material is slickensided										R2
44		213.21	213.48	0.22	SS	as above, shear zone										
44		213.48	213.70	0.22		lost core										
44		213.70	213.85	0.15	Siltst	dark grey, rubbly, calcite coated fractures, some surfaces appear polished										
45		213.85	214.65	0.80	SS	fine to medium grain, light to medium grey, abundant calcite stringers, becomes brecciated near base, abrupt lower contact										R3
45		214.65	215.31	0.66	Siltst/SS	dark grey, highly fractured, with some breccia, 3 polished fractures lined with calcite										R2
45		215.31	215.60	0.29		lost core										
45		215.60	215.95	0.35	Siltst	grading into sandstone at base, two calcite joints, described as above										
45		215.95	216.05	0.10	SS	gouge, sandstone fragments in a fine grain, silty matrix some irregular calcite										R1
45		216.05	216.33	0.28	SS	fine grain, medium grey, 4 calcite lined fractures, breccia at top and bottom, some pyrite										R2

ALL LINEAR UNITS IN METRES

1-R&OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-0 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-0 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE 1°	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS*		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %		F.S.I.	C.V.
45		216.33	216.53	0.20	SS	gouge zone, as above											
45		216.53	216.72	0.19	SS	fine grain, medium grey, 3 calcite lined fractures, massive											R3R2
45		216.72	217.14	0.42	SS	breccia, mostly sandstone fragments with dark grey siltstone pebbles in a silty matrix, 3 irregular calcite stringers											
45		217.14	217.27	0.13	SS	breccia, as above											
45		217.27	217.86	0.59	SS	fine grain, silty, dark grey, carbonaceous-calcite lined fracture base	24°										R2
45		217.86	218.46	0.60	SS	fine grain, medium grey, slight laminations (light grey) ten calcite lined fractures, pyrite/carbonaceous lined joints											R2-R3
46		218.46	218.67	0.21	SS	medium grey, fine grain, polished carbonate on 3 joint surfaces, some carbonaceous wisps											R3
46		218.67	219.57	0.90	SS	medium to dark grey, salt and pepper, fine grain, 5 calcite stringers, massive, sandstone is slightly calcareous in places											R3
46		219.57	220.95	1.38	SS	as above, 13 calcite lined joints											
46		220.95	221.13	0.18	SS	as above, sea-green clay lined shear surface with pyrite and calcite on joint surface, calcite lined joint surfaces elsewhere	25°										R3-R4
46		221.13	222.23	1.10	SS	non-calcareous, medium to dark grey with light grey bands 3 calcite stringers and 2 calcite joints, stick-somstick	30°										R4
47		222.23	222.60	0.37	SS	dark grey, fine grain, weathered - looking abundant irregular calcite stringers	26°										R2
47		222.60	223.15	0.55	SS	breccia-zone, polished coaly surfaces, sub-parallel to bedding, calcite joints, sandstone is calcareous	27°										R2
47		223.15	223.75	0.60	SS	very fine grain, slickensided calcite filled fracture faces, massive, with light grey bands (bedding), very calcareous, compact	21°										R4
47		223.75	223.95	0.20	SS	as above											
47		223.95	224.07	0.12	SS	breccia zone, as above											R1
47		224.07	224.29	0.22	SS	darker grey, grading into siltstone, non-calcareous, rubbly, fractures appear to be lined with calcite											R2

ALL LINEAR UNITS IN METRES

1 = RB/R/S — GOLDER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-0302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

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BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS [†]		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.	
										a.r.	b.	residual						
47		224.29	224.39	0.10	Siltst	grades into fine grain sandstone, very dark grey, non-calcareous, broken and rubbly, some calcite on fractures												R3
47		224.39	224.60	0.21		lost core												
47		224.60	225.11	0.51	Siltst	dark grey, with thin light grey laminae of sandstone, 3 joints, lined with calcite, semi-stick becoming broken at base	29°											R3
47		225.11	225.19	0.08	Siltst	as above, shear zone with gouge and angular fragments												R/R2
47		225.19	225.54	0.35	Siltst	as above, broken and rubbly, two clean joints, 4 joints lined with calcite												
47		225.54	225.75	0.21	Siltst	gouge as above, compact, powdery to flaky when broken												R3
47		225.75	225.91	0.16		lost core												
47		225.91	226.20	0.29	Siltst	grading to fine grain sandstone, dark grey, broken, 4 calcite lined joints, massive												R3
48		226.20	226.60	0.40	Siltst	very rubbly with gouge material, some calcite lined fragments												R1
48		226.60	226.80	0.20		lost core												
48		226.80	226.90	0.10	Shale	black, carbonaceous, polished joint surfaces with some calcite, highly broken												
48		226.90	227.05	0.15	SS	fine grain to medium grain, salt and pepper, broken and rubbly, clean polished surfaces, slightly calcareous												
48		227.05	227.15	0.10		cave												
48		227.15	227.53	0.38	Shale	black, carbonaceous, polished surfaces with calcite, some gouge zones, compact, flaky when broken, grades into siltstone at base												R2
48		227.53	228.02	0.49	Siltst	medium grey, finely laminated, some joints filled with gouge material/or calcite, non-calcareous	28											R3
48		228.02	228.13	0.11	Siltst	as above, beddy broken, rubbly												
48		228.13	229.19	1.06	SS/Siltst	fine grain to very fine grain, medium grey, slightly calcareous, semi-stick, 6 joints lined with green carbonate rich clay	26°											R3
48		229.19	229.39	0.20	Siltst	gouge, compact, pebbly when broken, medium grey, some irregular calcite stringers												

ALL LINEAR UNITS IN METRES

† R/R/O/S — GOLDR ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

ff — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOOGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ REDUCING Angle (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.	
48		229.39	229.85	0.46	Siltst	dark grey with some light grey bands, slightly calcareous 3 joints with calcite	28°									R3
48		229.85	230.53	0.68	Siltst	shear zone, as above, compact and rubbly, powdery when broken, green calcareous clay lining fractures (4)										R2
49		230.53	230.80	0.27		lost core										
49		230.80	231.26	0.23	SS	rubbly, fine grain, weakly laminated, broken fracture surfaces have white calcite, some evidence of grinding, highly calcareous										
49		231.26	231.46	0.20		lost core										
49		231.46	232.24	0.78	SS	as above, broke core, more evidence of grinding, calcareous										
49		232.24	232.48	0.24	SS	as above, rubbly to broken core, grinding, calcareous	22°									
49		232.48	232.88	0.40		lost core										
49		232.88	233.28	0.40	SS/Siltst	siltstone carbonaceous, gouge, dark grey, fissile, thinly laminated, sandstone medium dark grey, fine grain, indistinctly laminated with calcite fractures, weakly calcareous										R2
49		233.28	233.71	0.43	SS	with very thin black silty laminae, broken to rubbly core, gouge in middle, 2 cm, highly calcareous fracture surfaces coated with white calcite and pale green clay material										R2
50		233.71	234.17	0.46	SS	gouge, compact, dark grey to black, highly brecciated, highly fracture, medium grey, fine grain, strongly calcareous										R3
50		234.17	234.47	0.30	SS	fine grain, medium grey, broken to rubbly, 1 cm bright powdery coal in middle, highly fractured with white polished calcite on surfaces										R3
50		234.47	234.69	0.22	SS	as above, but broken, cross-bedded, both strongly calcareous										R3
50		234.69	234.89	0.20	SS	as above										
50		234.89	234.99	0.10	Siltst	carbonaceous, medium to dark grey, compact, carbonaceous layers are polished and squeezed										R3
50		234.99	235.14	0.15	SS	medium grey, fine grain, thinly laminated, slick, 1 calcite stringer, highly calcareous	10°									R3
50		235.14	235.24	0.10	Siltst	carbonaceous, as before										

ALL LINEAR UNITS IN METRES

1:RB/OR/S — GOLDR ASSOCIATES HARDNESS CODE
 •ROD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.v.b.	residual						
50		235.24	235.56	0.32	SS	medium grey, fine grain, finely laminated as before, slickensided carbonate fracture surfaces	10°										R3
50		235.56	235.62	0.06	SS	as before, rubbly											
50		235.62	235.86	0.24	SS	as before, rubbly, strongly calcareous											
50		235.86	236.00	0.14		lost core											
50		236.00	236.21	0.21	SS	as above											
50		236.21	236.96	0.75	SS/Siltst	interbedded, strongly gouged, siltstone - carbonaceous, dark grey, finely laminated, sandstone, medium grey, fine grain, laminated, cut by regular network of fine calcite veinlets, core is compact											
50		236.96	237.13	0.17	Gouge	fragments of sandstone and siltstone in sandy matrix, angular, fine grained and calcareous											
50		237.13	237.31	0.18	SS	gouge evidence of core grinding, fine grain, medium grain, finely laminated, highly calcareous											R2
50		237.31	237.69	0.38	Siltst	carbonaceous, dark grey, weakly to moderate calcareous, finely laminated, compact to rubbly, fracture surfaces snow white calcite, compact core is gouged											R2
51		237.69	238.39	0.70		lost core											
51		238.39	239.27	0.88	SS	medium grey, fine grain, laminated and cross-bedded, cut by 7 calcite filled fractures, sub-parallel to core axis, 2 fractures with carbonaceous material sub-parallel to bedding, sandstone weakly to moderately calcareous, semi-stick	6°										R3
51		239.27	239.74	0.47	Siltst/SS	interbedded, Sandstone, medium to dark grey, fine grain, cross-bedded, finely laminated and calcareous. Siltstone is dark grey to black and massive, weakly calcareous, carbonaceous. Core is blocky to rubbly,											R2
51		239.74	240.80	1.06	SS/Siltst	as before, sandstone is non-calcareous. Irregular white calcite stringers persist. Core is blocky	8°										R2
51		240.80	240.92	0.12	SS/Siltst	as before, fracture surfaces have white calcite. Rubbly											
51		240.92	241.72	0.80	SS/Siltst	as before, sandstone is now moderately calcareous, Sandstone medium grey, fine grain, finely laminated, Network of Calcite stringers parallel to core axis, siltstone, dark grey, carbonaceous.	32°										R2

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGFPO1 F
AREA	S.F. R.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % p.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
51	246.72	241.82	0.10	Gouge	fragments are dark to black, carbonaceous siltstone in dark grey matrix											
52	241.82	242.42	0.60		lost core											
52	242.42	242.52	0.10	Siltst	gouge, medium to dark grey, carbonaceous, breaks into angular fragments, stick core, weakly calcareous	17°										R1
52	242.52	243.56	1.04	SS	medium grey, fine grain, finely laminated, dark and light bands gives striped appearance, stick core, 3 calcite fractures, 2 joints calcite lined, sub-parallel to bedding, medium calcareous	17°										R3
52	243.56	243.67	0.11	Siltst	dark grey, massive, some grinding, broken core, medium calcareous											
52	243.67	243.89	0.22	SS	medium grey, fine grain, laminated, blocky, 1 calcite fracture parallel to core axis, medium calcareous	11°										R3-R4
52	243.89	244.09	0.20		lost core											
52	244.09	244.20	0.11	Shale	carbonaceous, non calcareous, dark grey to black, strongly fractured, carbonaceous material polished											R2
52	244.20	245.28	1.08	SS	medium grey, fine grain, finely laminated, strongly fractured and jointed, joints and fractured polished, core is blocky, sandstone is weakly calcareous	25°										R3
52	245.28	246.06	0.78	SS/Sh	interbedded, sandstone is medium to dark grey, fine grain, finely laminated, non-calcareous, shale is dark grey to black, very fine grain, carbonaceous, core is broken to gouge, 1 cm calcite vein sub-parallel to core axis, many minor micro veinlets.	16°										
52	246.06	247.17	1.11	SS/Sh	as before, very broken and rubbly near base	21°										R3
53	247.17	248.68	1.51	SS/Sh	as above, sandstone becoming silty and cross-bedded, 3 fractures calcite lined, 1 joint calcite lined and stone, weak to moderate calcareous	18°										R3
53	248.68	249.66	0.98	SS/Sh	as above, 5 fractures, calcite lined, highly calcareous sandstone	18°										R3
53	249.66	250.06	0.40	SS	medium grey, fine grain, finely laminated, broken core, 5 fractures with slickensided calcite (medium grain crystalline)											R3
53	250.06	250.26	0.20		lost core											
53	250.26	250.78	0.52	SS	as above, 4 calcite lined fractures	71°										

ALL LINEAR UNITS IN METRES

1:RB/RDS — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEPOLLE
AREA	S.-E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIP ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.c.b.	residual						
54		250.78	251.61	0.83	Siltst/SS	carbonaceous shale splits towards base, medium grey, rubbly bedding, 5 joints	15°										R3
54		251.61	251.68	0.07	Shale	black, carbonaceous, some plant material, rubbly											
54		251.68	251.77	0.09	SS	very fine grain, light grey	22°										
54		251.77	251.82	0.05	Shale	black, carbonaceous, slickensided on fractures, sub-parallel to bedding											R2
54		251.82	252.28	0.46	Sh/Siltst	shale is carbonaceous and dark grey to black, siltstone is dark grey, brecciated and powdery at top, semi-stick at base, siltstone is finely laminated, calcite lining, 3 joint planes	21°										
54		252.28	252.37	0.09	SS	very fine grain, light to medium grey, 2 calcite lined fractures											R3
54		252.37	255.09	0.72	Siltst/Sh	as previously described, rubbly											R2
		253.09	253.30	0.21		lost core											
54		253.30	254.45	1.15	Siltst/Sh	shale is dark grey to black, with carbonaceous material, siltstone is medium grey, finely laminated, calcite on joint planes, 6 joints, one fracture at base lined with calcite and black carbonaceous material, polished	13°										R3
54		254.45	254.72	0.27	Shale	medium grey, carbonaceous, indistinct bedding											R1
54		254.72	254.77	0.05	gouge	shaley, as above, compact, flaky when broken, non-carbonaceous											R2
55		254.77	255.27	0.50	gouge	as above, some blocky fragments											
55		255.27	255.64	0.37	Siltst/Sh	as above, 2 cm shear zone in middle, lined with gouge, gouge is R2, black, shaley, carbonaceous, soft powder and broken, calcite stringers											R3
55		255.64	255.85	0.21	Shale	black, carbonaceous, polished along fracture surfaces, fractures at 90° to core axis											
55		255.85	255.99	0.14	Siltst/SS	calcareous, finely laminated, sandstone is light grey, very fine grain, siltstone is dark grey, 3 calcite lined joints at 45° to core axis, some cross-bedding	32°										R3
55		255.99	256.24	0.25	Siltst/Sh	shale is dark grey and carbonaceous, siltstone is medium grey, very finely laminated, white calcite along joints, rubbly											
55		256.24	257.30	1.06	shear zone	in interbedded siltstone and shale, abundant polished surfaces, sub-parallel to bedding, lined with black carbonaceous material and white calcite, evidence of											R3

ALL LINEAR UNITS IN METRES

1-RB/ORS - GOLDR ASSOCIATES HARDNESS CODE

-RQD - ROCK QUALITY DESIGNATION [%]

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEPOL
AREA	S.E. B ₂ C ₂

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. / residual	ASH %	V.M. %	FC. %	F.S.I.		C.V.
						bioturbation, shear zones are filled with gouge (R1), flaky and broken										
55	257.30	257.76	0.46	Shale		black, carbonaceous, semi-stick at top, rubbly and ground near base, sheared surfaces parallel to bedding, non-calcareous, minor calcite on joint planes, polished carbonaceous material on fractures	33°									R2
	257.76	258.06	0.30			lost core										
55	258.06	259.36	1.30	Siltst/Sh		as previously described, 0-2 on sandy bond in centre, non-calcareous, joints are clean and smooth (5), parallel to bedding, 3 fractures, polished with carbonaceous material and at 45° to core	25°									R3
56	259.36	259.37	0.31	Siltst/Sh		as previously described, 3 polished joints sub-parallel to bedding, has some worm burrows, calcite lined joints, sub-parallel to core axis	23°									
56	259.37	259.84	0.47	Shale		light and dark grey, undulating bands, carbonaceous										R3
56	259.84	260.74	0.90	Siltst/Sh		shale is dark grey, carbonaceous, R2, siltstone is R3 medium grey, finely laminated, shaley drapes, semi-stick core, jointing is sub-parallel to bedding (8)	24°									
56	260.74	261.47	0.73	Siltst/Sh		as above, highly fractured, small scale movement (2 cm) along several calcite lined fractures which are sub-parallel to core axis, (3)										
56	261.47	262.22	0.75	gouge		compact, appears to be siltstone/shale (as above), powdery to flakey when broken, 5 or 6 larger fragments visible, polished calcite and carbonaceous material, larger fragments, R3										R2
56	262.22	262.26	0.04	Siltst/Sh		as above	30°									
56	262.26	262.29	0.03	gouge		as above, rubbly and polished										
56	262.29	262.56	0.27	gouge		semi-compact, powdery with 1 cm fragments, mostly carbonaceous shale, polished										
56	262.56	262.98	0.42	gouge		very compacted, siltstone/shale, flaky when broken, polished with calcite and carbonaceous material										R1-R2
57	262.98	263.11	0.13	gouge		semi-compact, rubbly, siltstone/shale as above										
57	263.11	263.74	0.63	Siltst/Sh		blocky, increasingly shaley at base, fractures are curved and polished and occur mainly in shale portion	27°									
57	263.74	264.24	0.50			lost core										

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION [%]

FF — FRACTURE FREQUENCY

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA					REMARKS 1	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
57		264.24	264.81	0.57	gouge	siltstone/shale, sheared surface lined with calcite and are polished, compact, powdery at base when broken, blocky fragments at top										
57		264.81	265.68	0.87	Siltst/Sh	as previously described, abundant sheared surfaces, sub-parallel to bedding	25°									
57		265.68	267.14	1.46	SS/Siltst/Sh	interbedded, sandstone ls light grey, very fine grain, siltstone ls medium to dark grey, shale ls dark grey, to black, carbonaceous, abundant plant fragments in centre, very mildly calcareous										
58		267.14	268.37	1.23	Shale	black, carbonaceous, silty at top, highly sheared, 9 fracture faces, polished, 5 shear zones full of gouge (R1), finely laminated siltstone bands	26°									R2
58		268.37	268.70	0.33	gouge	fault, shale, as above, mildly calcareous in places, semi-compact										
58		268.70	270.00	1.20	Shale	as above, with 1 cm silty splits, highly fractured, one shear zone with 2 cm gouge, gouge ls soft, powdery with some coaly fractures, silty bands are moderately calcareous	28°									R2-R3
58		270.00	270.24	0.24	Shale	silty in places, calcite lined fractures traces, highly calcareous, medium grey	26°									
58		270.24	270.38	0.14	Shale	rubble, fissile, platy, carbonaceous, medium grey										R1
58		270.38	270.62	0.24	Shale	gouge, compact, platy when broken, polished near surface										
59		270.62	271.77	1.15	Siltst/Sh	moderately calcareous, siltstone ls medium grey, shale ls dark grey and carbonaceous, wavy bedding, some load casting and worm burrows, 4 fractures, lined with calcite, polished, rubbly at base	40°									R3
59		271.77	273.11	1.34	Siltst/Sh	as above, 8 fractures sub-parallel to bedding, abundant polished carbonaceous material on surfaces										R3
59		273.11	273.21	0.10	Shale	Carbonaceous, dark grey, abundant plant fragments, rubbly and polished										
59		273.21	273.61	0.50	SS	highly calcareous, bedding truncated by fracture plane, lined with calcite	44°									
59		273.61	273.83	0.16	gouge	very compact, shale, carbonaceous, flakey when broken, highly polished										R2
59		273.83	274.47	0.64	Shale	dark grey, carbonaceous, moderately calcareous, few calcite veinlets, 3 joints, 2 polished fractures										R3

ALL LINEAR UNITS IN METRES

† :RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.		C.V.
										d.r.b.	residual						
59		274.47	274.60	0.13	gouge	very compact, shale as previously described											R2
59		274.60	274.81	0.21	Shale	as above with silty lenses, rubbly	35°										
59		274.81	275.01	0.20	Shale	as above											
59		275.01	275.24	0.23	gouge	as above, very compact, fragmental when broken, abundant calcite on polished surfaces											R2
60		275.24	275.36	0.12	gouge	as above											
60		275.36	276.46	1.10	Shale	black, carbonaceous, highly sheared, 5 shear zones, 1cm thick gouge in each shear, rubbly at base											
60		276.46	277.73	1.27	Shale	black, carbonaceous, as above, highly fractured, massive indistinct, silty bands are discontinuous, surfaces are curved and polished, moderately calcareous, fissile and platy											R2
60		277.73	277.96	0.13	gouge	shale, as above											
60		277.96	279.44	1.38	Shale	as above, becoming less fractured at base, finely laminated, slit bands, (moderately calcareous), shale is slightly calcareous											R2
61		279.44	280.82	1.38	Shale	dark grey, silty, calcareous, carbonaceous polished fracture planes, some calcite filled fractures, becoming siltier at base	35°										R2
61		280.82	281.00	0.18		lost core											
61		281.00	282.53	1.53	Shale	as above, silty at base, silty lenses											
61		282.53	283.96	1.43	Siltst	medium grey, polished fracture surfaces, 2 clean joints perpendicular to bedding											R3
		283.96	284.06	0.10		lost core											
62		284.06	284.93	0.87	Shale	carbonaceous, dark grey to black, silty lenses, calcite filled fractures, carbonaceous polished surfaces	17°										R2
62		284.93	285.03	0.10	Shale	as above, rubbly											
62		285.03	285.39	0.36	Shale	silty as previously described, highly broken, calcite fractures, polish carbonaceous fractures											R3
62		285.39	285.59	0.20		lost core											
62		285.59	286.30	0.71	Shale	silty as above, braced near base, calcareous											

ALL LINEAR UNITS IN METRES

† R&OBS — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D 302
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % d.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
62	286.30	286.85	0.55	Shale	siltstone interbeds, calcite filled fractures, siltstone light grey, shale dark grey, brecciated at base, carbonaceous fractures, calcareous											R3
62	286.85	287.15	0.30		lost core											
62	287.15	287.84	0.69	Shale	as above, 1 long fracture, sub-parallel to core axis, brecciated at base		21°									
62	287.84	287.90	0.06	Shale	rubble as above											
63	287.90	288.58	0.68	Shale	as above, brecciated and broken at base		44°									
					End of Hole											
					Coal - Total § - 7.89											
					Lost Coal - 3.85	UPPER SEAM										
					Recovery - 51%											
					Coal - Total - 22.6											
					Lost Coal - 4.99	LOWER SEAM										
					Recovery - 78%											
					Total Core Recovery - 279.1											
					Lost Core - 53.34											
					Recovery - 81%											
					Moose Mtn. Seam:											
					Total Coal - 5.83											
					Lost Coal - 1.6											
					% Recovery - 73%											

ALL LINEAR UNITS IN METRES

1 - R&/OR S - GOLDR ASSOCIATES HARDNESS CODE
 •RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D 302
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

DATE	BEGIN	
	END	

HOLE No.	303
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HOLE PARTICULARS

LOCATION	LODGEPOLE		
	S.E. B.C.		
ELEVATION	1811.8	HOLE BEARING (AZ) [†]	
TOTAL DEPTH	320.52	HOLE ANGLE (°) [*]	90

LOGGING

LOGS RUN	Long spaced density, Gamma, Neutron
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

TOTAL	CORE DIAMETER	HQ
	CORE RECOVERED	
	LENGTH CORED	
	CORE RECOVERY	%

EXAMINATION

LOG USED	Gamma-Neutron
No. OF SEAMS SAMPLED	
EXAMINER (S)	
DATE	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA							REMARKS [†]	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)			MOIST %		ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
									a.r.b.	residual							
1		3.87	4.03	.16	SS-SLST	rubble											
1		4.03	4.72	.69	SST	fine grain - very fine grain, medium gray, light and dark laminations, calcite-filled fractures, coaly bands (bright)											R3
1		4.72	4.82	.10	SST	rubble, as above											
1		4.82	5.39	.57	SST	as above, coarse grain at centre, coaly stringers, calcite-filled fractures											R3
1		5.39	6.91	1.52	SST	medium grain, medium gray, semi-stick, with coaly lenses and stringers, calcite-lined joints, with some dark gray sandstone laminations											R3
1		6.91	7.98	1.07	SST	as above											R3
2		7.98	8.29	.31	SST	as above, with bright coaly bands and stringers											R3
2		8.29	9.74	1.45	SST	as above, with mudstone lenses and stringers at base, broken at base											R3
		9.74	10.04	.30	Lost	core											
2		10.04	11.37	1.33	SST	as above, stick-core											R3
2		11.37	12.27	.90	SST	medium grain, salt and pepper, coaly stringers and lenses, calcite-filled fractures, some mudstone clasts, some fine grain sandstone wavy laminations, rubbly in centre, ground core at top											R3
3		12.27	13.00	.73	SST	as above, with calcite-filled fractures											R3
3		13.00	13.90	.90	SST	as above, becoming coarse grain at base, stick core											R3
3		13.90	14.31	.41	SS-SLST	sandstone is fine to very fine grain, light gray, siltstone is medium gray, stick-core, core removed for geotechnical purposes											R3

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

▲ ANGLE MEASURED FROM CORE AXIS

† : R &/OR S — GOLDR ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
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CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.G.

HOLE No.	303
CONTINUED	

PAGE 2
OF 36

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.r.b.	residual	d.b.	d.b.	d.b.			
3		14.31	14.73	.42	SLTST	dark gray, massive, stick core, core removed for geotechnical purposes											R3
3		14.73	15.31	.58	SLTST	as above, two fractures											R3
3		15.31	15.92	.61	SST	medium gray, fine grain, finely laminated stick core, one joint filled with calcite	20										R3
3		15.92	16.28	.36	SST	as above	19										R3
4		16.28	17.22	.94	SST	medium-dark gray, fine grain, very weakly laminated to almost massive, stick core, three dry fractures, lamination more prevalent at bottom	19										R3
4		17.22	18.42	1.20	SST	finely laminated, fine grain, medium gray, semi-stick to broken core, one carbonaceous fracture, three dry fractures, two calcite-lined joints, small scale cross-bedding	20										R3
4		18.42	19.28	.86	SST	as above, occasional .06 m thick bands of medium grain, light gray sandstone, semi-stick to broken core											
4		19.28	19.44	.16	SLTST	dark gray, massive, rubbly core											R3
		19.44	19.84	.40	Lost	core											
4		19.84	20.20	.36	Shale	coaly, black, very fine grain, abundant carbonaceous coaly plant debris, rubbly - broken core	21										R2
5		20.20	20.32	.12	Coal	dull, powder to small pieces		LPD-303									S4
		20.32	21.00	.68	Lost	coal				6.00	.58	12.70	23.36	63.94	9.0		
5		21.00	21.16	.16	Shale	very dark gray, carbonaceous, broken chunks											R2
5		21.16	21.20	.04	Coal	powder											S4
		21.20	21.96	.76	SLTST	very dark gray, carbonaceous, broken, rubbly											R3
		21.96	22.41	.45	Lost	core											
5		22.41	22.56	.15	SST	light gray, very fine grain, with dark gray siltstone cross-beds, one joint											R3
5		22.56	23.06	.50	SLTST	dark gray, carbonaceous, stick											R2
5		23.06	23.14	.08	Coal-SH	coal, shaley, small pieces to powder											S3

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		REQUIRED ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	VM. % d.b.	P.C. % d.b.	F.S.I.	C.V.	
5		23.14	23.55	.41	SLTST	dark gray, carbonaceous, broken to broken stick, very sandy at base										R3
5		23.55	24.04	.49	SS-SLTST	light gray sandstone and dark gray siltstone, interbedded to cross-bedded		15								R3
5																
5		24.04	24.29	.25	SLTST	dark gray, carbonaceous, broken to broken stick										
5		24.29	25.09	.80	SLTST	as above stick, a few sandy intervals										
6		25.09	25.72	.63	SLTST	as above, increasingly sandy										
6		25.72	26.17	.45	SST	light gray, very fine grain, silty, 1 joint, bedding poorly defined										R3
6		26.17	26.49	.32	SST	as above, 1 joint										
6		26.49	26.73	.24	SST	as above, broken, rubbly										
6		26.73	26.88	.15	SST	as above, stick, 1 joint, a few thin calcite-filled fractures										R3
6		26.88	27.09	.21	SLTST	dark gray, slightly carbonaceous, slightly sandy										R3
6		27.09	27.61	.52	SST	light gray, very fine grain, with dark gray siltstone cross-beds, broken										
6		27.61	29.11	1.5	SST	as above, stick, siltstone breccia, 2 joints, appears to be siltstone fragments that have been broken up and redeposited in sandstone										R3
7		29.11	29.63	.52	SST	as above, some bedding		19								
		29.63	29.91	.28	Lost	core										
7		29.91	30.40	.49	SLTST	dark gray, carbonaceous, some convolute sandstone intervals										R2
7		30.40	30.94	.54	SST	light gray, fine grain with convolute siltstone intervals										R3
7		30.94	31.35	.41	SST	as above, increasingly silty										
7		31.35	32.24	.89	SST	light gray, salt and pepper with a few dark gray siltstone interbeds, some siltstone clasts near base, 2 joints										R3
7		32.24	32.36	.12	SLTST	dark gray, sandy, abrupt contact										R3

ALL LINEAR UNITS IN METRES

1 - RB/R/S — GOLDR ASSOCIATES HARDNESS CODE
 •RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.G.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
7		32.36	32.46	.10	SLTST	as above										
7		32.46	32.91	.45	SST	salt and pepper, fine grain, dark gray siltstone interbeds, broken, signs of sticks										
7		32.91	33.14	.23	SST	as above, cross-bedded, contains siltstone clasts, stick										R3
7		33.14	33.38	.24	SST	as above, rubbly										
8		33.38	33.69	.31	SST	as above, rubble										
8		33.69	34.10	.41	SST	as above, rubble										
		34.10	34.60	.50	Lost	sandstone										
		34.60	34.71	.11	SST	as above, stick										
		34.71	34.88	.17	SST	as above, rubble										
		34.88	35.00	.12	SST	as above, rubble										
B		35.00	35.26	.26	SST	fine to coarse-grained at base, salt and pepper, 1 joint, broken stick, 1 joint										R3
		35.26	35.40	.14	SLTST	dark gray, carbonaceous, abrupt contact, joint runs through siltstone and into coarse sandstone above										R2
		35.40	35.48	.08	Coal	dull, powder										S4
		35.48	35.56	.08	Lost	coal										
		35.56	36.13	.57	Coal	dull, stick, traces of pyrite			LPD-303							R1
		36.13	36.18	.05	Coal	dull, powder			-02	11.10	1.78	3.77	23.37	72.86	+9.0	
		36.18	36.70	.52	Lost	coal										
		36.70	36.78	.08	Shale	dark gray, carbonaceous, broken										R2
		36.78	37.03	.25	Shale	as above, broken stick										
		37.03	37.07	.04	Coal	dull, shaly, powder										S4
		37.07	37.11	.04	Lost	coal			LPD-303							
		37.11	37.70	.59	SST	medium gray, very silty, broken stick, a few shaly slick contacts			-03	12.19	3.73	3.90	20.60	75.50	5.0	R3

ALL LINEAR UNITS IN METRES

1 - R & OR S - GOLDER ASSOCIATES HARDNESS CODE
 +RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. (residual)	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
8		37.70	37.95	.25	Coal	soft, stick, with small pieces, dull										S3
		37.95	38.57	.62	Lost	coal										
9		38.57	39.20	.63	Coal	dull, powder to small pieces			LPD-303 -03							
9		39.20	39.26	.06	Coal	dull, powder										
9		39.26	39.31	.05	Coal	dull, shaley										S5
		39.31	39.60	.29	Lost	coal										
9		39.60	39.90	.30	SLTST	dark gray, carbonaceous, slightly sandy, broken stick										R2
9		39.90	40.85	.95	SS-SLST	interbedded to cross-bedded, light gray, fine grain, sandstone and dark gray siltstone, stick	20									R3
9		40.85	41.48	.63	SST	medium to light gray, with some dark gray siltstone, wispy beds, broken stick, ? calcite joints										R3
9		41.48	41.63	.15	SST	as above, rubble										
		41.63	41.70	.07	Lost	core										
9		41.70	42.05	.35	Coal-SLST	grunged up soft coaly siltstone, black, top is more silty, base is more coaly										S3
		42.05	42.40	.35	Lost	coal/siltstone core										
9		42.40	43.41	1.01	SLTST	medium gray, sandy clasts, stick										R2
10		43.41	43.75	.34	Shale	dark gray, carbonaceous plant fragments, polished carbonaceous surfaces, pyrite flakes, few thin bright coal bands, semi-stick										R2
10		43.75	44.08	.33	Shale	as above, becoming silty at base										R2
10		44.08	44.48	.40	SLTST	medium gray, shaley, carbonaceous plant fragments, polished coaly surfaces near base, semi-stick										R3
10		44.48	44.51	.03	Coal	bright, powder										S2
10		44.51	44.63	.12	SLTST	shaley, as previously described										R3
10		44.63	44.94	.31	Shale	black, carbonaceous, polished coaly surfaces, becoming silty at base										R2

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOXIEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPT. AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC. % d.b.	F.S.I.	C.V.		
10		44.94	44.97	.03	Coal	dull, polished, flakey to powdery											S3
10		44.97	45.18	.21	SST	medium gray, fine to very fine grain, stick											R3
		45.18	45.28	.10	Lost	core											
10		45.28	45.78	.50	SST	as above											R3
		45.78	45.88	.10	Lost	core											
10		45.88	47.40	1.52	SST	as above, stick, with some dark gray siltstone interbeds											R3
11		47.40	48.92	1.52	SS-SLST	as above, stick core, slightly shaley in places											R3
		48.92	49.02	.10	Lost	core											
11		49.02	50.46	1.44	SS-SLST	as above, calcite-filled fracture, 4 joints, some sandy lenses, good stick core											R3
11		50.46	51.27	.81	SS-SLST	as above	07										R3
		51.27	51.47	.20	Lost	core											
12		51.47	52.03	.56	SS-SLST	as above, siltstone becoming predominant, good stick core											
12		52.03	53.11	1.08	SS-SLST	as above											R3
		53.11	53.46	.35	Lost	core											
12		53.46	54.73	1.27	SS-SLST	as above											R3
12		54.73	55.30	.57	SS-SLST	as above, broken stick											R3
		55.30	55.33	.03	Lost	core											
13		55.33	55.42	.09	SS-SLST	as above											R3
13		55.42	55.68	.26	SS-SLST	rubble, as above											
		55.68	55.98	.30	Lost	core											
13		55.98	57.16	1.18	SS-SLST	as above, rubbly at top and base											R3
		57.16	57.36	.20	Lost	core											
13		57.36	57.82	.46	SS-SLST	as above, sandstone becoming medium grain at base, some coaly bands at base, rubbly at base											R3

ALL LINEAR UNITS IN METRES

1-RB/OR S — GOLDR ASSOCIATES HARDNESS CODE
 -ROD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LUDGEPOLE
AREA	S. E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.		C.V.
13		57.82	57.90	.08	SST	light gray, medium grain, carbonaceous, coaly stringers, disturbed bedding, some silty bands											R3
13		57.90	58.09	.19	SST	breccia, muddy, compact											
13		58.09	58.12	.03	Coal	bright and dull, powdery											S1
13		58.12	58.59	.47	SST	light gray, medium grain, with some shaley lenses, calcite-lined joints, polished carbonaceous surfaces, semi-stick, some altered pyrite flakes											R3
13		58.59	58.77	.18	SST	rubble, as above											
13		58.77	58.95	.18	SST	rubble, as above											
		58.95	59.35	.40	Lost	core											
14		59.35	59.72	.37	SST	very broken, as above											
14		59.72	60.05	.33	SS-SLST	sandstone is light gray, fine grain, siltstone is medium gray, rubbly at top											R3
14		60.05	60.45	.40	SS-SLST	as above, worm burrows											R3
14		60.45	60.56	.11	SS-SLST	rubble, as above											
		60.56	60.86	.30	Lost	core											
14		60.86	61.29	.43	SS-SLST	as above											
14		61.29	61.74	.45	SLST	dark gray, very rubbly, shaley											R3
14		61.74	62.94	1.20	Shale	silty, black, carbonaceous, some bright coal bands, plant fragments, semi-stick, broken at base											R2-R3
14		62.94	63.04	.10	SST	very fine grain, light gray, bright coaly stringers, massive, broken core											R3
15		63.04	63.74	.70	SST	as above, becoming semi-stick and laminated at base, becoming medium grain	35										R3
15		63.74	65.09	1.35	Shale	black, silty, numerous carbonaceous plant fragments, stick core											R3

ALL LINEAR UNITS IN METRES

† R/R/ORS — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH BY TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
15	65.09	65.17	.08	Shale	silty, rubble, as above												
	65.17	65.20	.03	Lost	core												
15	65.20	66.04	.84	Shale	as above, stick, calcite-lined joints, some coaly stringers, becoming very silty at base												R2
15	66.04	66.47	.43	SLTST	dark gray, carbonaceous, semi-stick												R3
	66.47	66.67	.20	Lost	core												
16	66.67	67.75	1.08	SLTST	as above, semi-stick												R3
16	67.75	68.27	.52	SLTST	as above, some polished fracture surfaces												
	68.27	68.37	.10	Lost	core												
16	68.37	69.37	1.0	SLST-SS	siltstone is dark gray, sandstone is light gray, fine grain, disturbed and bioturbated bedding, some coaly pods, numerous calcite-filled fractures, semi-stick												R3
16	69.37	70.82	1.45	SST	light gray, fine to very fine grain, sandstone, some medium gray siltstone interbeds, some siltstone lenses, calcite-filled fractures, good stick core	06											R3
17	70.82	72.10	1.28	SLIST	medium gray, with some very fine grain light gray sandstone, numerous carbonaceous plant fragments												R3
	72.10	72.40	.30	Lost	core												
17	72.40	72.50	.10	SST	light gray, some medium gray silty lenses, calcite-filled fractures												R4
17	72.50	73.87	1.37	SST	as above, very thin carbonaceous, stringers	17											R3-R4
17	73.87	74.12	.25	SST	as above												
	74.12	75.20	1.08	Lost	core												
17	75.20	75.34	.14	Coal	bright, clear, blocky to powdery												S3
17	75.34	75.49	.15	Shale	black, carbonaceous, plant fragments												
17	75.49	75.64	.15	Coal	dull, powdery												
	75.64	75.70	.06	Lost	coal												

ALL LINEAR UNITS IN METRES

1:RB/DR S — GOLDER ASSOCIATES HARDNESS CODE
 *RQ — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.	
										d.b.	residual	d.b.	d.b.	d.b.		
17		75.70	75.80	.10	Shale	as previously described										
18		75.80	75.90	.10	Shale	powdered, soft										S1
18		75.90	75.99	.09	Shale	as above, becoming harder at base, black carbonaceous at base										S1-R2
		75.99	76.20	.21	Lost	shale			LPD-303							
									-104	8.62	2.00	8.59	19.29	72.12	8.0	
18		76.20	76.42	.22	Coal	hard black to flakey sheared in places and shaley near top, mostly bright										S5
		76.42	76.45	.03	Shale	black, carbonaceous										R2
		76.45	76.65	.20	Coal	bright, sheared, flakey										S3
		76.65	76.71	.06	Lost	coal										
		76.71	76.82	.11	Coal	dull										S1
		76.82	76.91	.09	Coal	dull, flakey, some polished surfaces										S3
		76.91	77.30	.39	Coal	dull, with bright bands										S5
		77.30	77.53	.23	Shale	brown, carbonaceous, some pyrite flecks, plant fragments										R2
18		77.53	77.58	.05	Coal	powder, dull										
		77.58	77.62	.04	Coal	as above										
		77.62	77.65	.03	Lost	coal										
		77.65	77.71	.06	Shale	black, coaly, plant fragments, polished bright coaly bands										R2
		77.71	77.75	.04	Lost	core										
		77.75	78.61	.86	SLT-SS	silt medium gray, sandstone fine to very fine grain, light gray, calcite-filled fractures, calcite and pyrite-lined joints, rubbly at base										R3
18		78.61	78.76	.15	Shale	silty, black, carbonaceous plant fragments, polished carbonaceous fractures and calcite-filled fractures										
18		78.76	79.49	.73	Silt	light gray with some very fine grain, sandy laminations, numerous carbonaceous fragments, stick										R3

ALL LINEAR UNITS IN METRES

† R&ORS — GOLDR ASSOCIATES HARDNESS CODE
 •RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	P.C. % d.b.	F.S.I.	C.V.		
18		79.49	79.75	.26	SLT-SS	silt medium gray, sandstone light gray, fine grain											R3
19		79.75	80.78	1.03	SS-SLT	as above, with calcite-filled fractures worm burrows, small scale cross-beds	30										R3
		80.78	81.68	.90	SS-SLT	as above, with some shaley bands											R3
19		81.68	81.98	.30	Shale	black, carbonaceous											R2
19		81.98	83.50	1.52	SLT-SS	as previously described, black clasts, broken core at top	16										R3
19		83.50	83.70	.20	Shale	silty, black plant fragments, polished surfaces, highly broken											R2
20		83.70	84.83	1.13	Shale	black, highly carbonaceous, bright coaly bands, pyrite flecks, polished, broken core											R2
		84.83	85.20	.37	Lost	core											
20		85.20	86.77	1.57	SLT-SS	silt medium gray, sandstone light gray, very fine grain, calcite-filled fractures, sandstone - semi-stick.	13										R3
20		86.77	88.08	1.31	Shale	dark gray, carbonaceous plant, with some thin sandy beds, calcite-filled fractures, highly carbonaceous in places, 4 cm coal band in centre, polished joint surfaces											R3
		88.08	88.33	.25	Lost	core											
21		88.33	89.10	.77	Shale	as above, becoming silty at base											R2
21		89.10	89.57	.47	Silt	medium gray with some fine grain sandy beds, calcite-filled fractures											R3
21		89.57	89.91	.34	Silt	as above, with ground and rubble core											R4
		89.91	90.01	.10	Lost	core											
21		90.01	91.11	1.1	Shale	black, highly carbonaceous, silty in places crushed and broken, plant fragments											R2
		91.11	92.11	1.0	Lost	core											
		92.11	92.50	.39	Silt	dark gray, calcite-filled fractures, carbonaceous plant fragments and coaly wisps											R3

ALL LINEAR UNITS IN METRES

1-RB/RS -- GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

-RQD -- ROCK QUALITY DESIGNATION (%)

FF -- FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. R.C.

HOLE No	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE 1°	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.		C.V.
		92.50	92.54	.04	Shale	black with numerous bright coaly bands polished and sheared											R1-R2
		92.54	92.61	.07	Coal	dull with some bright flakey to powdery											S3
		92.61	92.80	.19	Shale	as previously described, carbonaceous plant											R2
		92.80	92.93	.13	Coal	dull and bright, flakey to powdery											S2
		92.93	93.22	.29	Shale	as previously described											R2
21		93.22	93.38	.16	Silt	medium gray											R4
		93.38	93.59	.21	Lost	core											
		93.59	93.65	.06	Silt	as above											
22		93.65	94.85	1.20	SS-SLT	sandstone is fine grain to very fine grain, light gray; siltstone is medium gray, small scale cross-beds, coaly partings, calcite-filled fractures											R3
		94.85	95.60	.75	SS-SLT	as above											R3
		95.60	96.00	.40	Silt	dark gray, shaley at base											R2-R3
22		96.00	96.06	.06	Coal	powdery, dull with bright											S2
		96.06	96.35	.29	Lost	coal											
		96.35	96.48	.13	Shale	medium gray, slicked, carbonaceous, rubbley											R2
		96.48	96.60	.12	Coal	dull, sheared and polished, flakey											S4
22		96.60	96.64	.04	Shale	black, carbonaceous, slicked, pyrite flecks											R2
22		96.64	96.72	.08	Coal	powdery, mostly dull			LPD-303 -5	6.47	.79	81.21			0.0		S2
		96.72	96.80	.08	Shale	black, carbonaceous, polished, pyrite flecks											R2
22		96.80	97.18	.38	Coal	mostly dull, powdery											S1
		97.18	97.48	.30	Coal	dull, with some bright, slicked, blocky											S3
		97.48	97.59	.11	Coal	powdery, dull											S2
22		97.59	97.69	.10	Coal	dull, blocky and slicked											S4
23		97.69	98.05	.36	Coal	dull, powdery, slicked											S2

ALL LINEAR UNITS IN METRES

† R&/OR \$ — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS†	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	P.C. % d.b.	F.S.I.	C.V.		
		98.05	98.35	.30	Coal	dull, blocky, slicked			↓								
23		98.35	98.63	.28	Coal	dull with bright bands, slicked, powdery to blocky		LPC-303		12.12	1.98	4.65	20.84	74.51	5.5		S2
		99.63	98.86	.23	Coal	bright and dull, sheared, blocky to flakey											S3
		98.86	99.06	.20	Coal	dull, blocky, some polished surfaces											R4
		99.06	99.46	.40	Coal	dull, polished, blocky to powdery											S4
		99.46	99.48	.02	Lost	coal											
23		99.48	99.65	.17	Coal	dull, powdery											S1
		99.65	100.02	.37	Silt	black, calcite-lined joints, some fine grained sandy bands											R3
		100.02	100.08	.06	Silt	as above											R3
		100.08	101.48	1.40	SST	fine-grained, light gray, calcite-filled fractures, semi-stick, some silty bands		21									R3
23		100.48	101.59	.11	SST	as above											
24		101.59	102.49	.90	SLT-SS	sandstone is very fine grain, light gray, silt is dark gray, calcite-filled fractures, semi-stick											R3
		102.49	102.74	.25	Lost	core											
24		102.74	103.44	.70	SS-SLT	as above, silty, shaley in places, broken core		18									R3
		103.44	103.86	.42	Lost	core											
24		103.86	104.82	.96	SS-SLT	as above, broken core, rubblely at base											R3
		104.82	105.15	.33	SS-SLT	as above, rubblely at base											R3
		105.15	105.35	.20	Silt	medium gray, breccia											S5
		105.35	105.44	.09	Coal	dull and bright, powdery											S2
24		105.44	105.76	.32	SS-SLT	as previously described with worm burrows											R3
25		105.76	106.38	.62	SST	semi-stick to broken, faint light gray sandstone laminations in dark gray silty matrix, 1 calcite-filled joint, laminations are 1-50 mm wide.		25									R3

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S, E, B, C.

HOLE No.	303
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
25		106.38	106.53	.15	SST	as above, rubble core											
25		106.53	107.58	1.05	SLTST	dark gray, massive, semi-stick to stick, carbonaceous plant fragments											R2
25		107.58	108.06	.48	SS-SLST	finely laminated, dark gray with light gray laminae. Small scale cross-bedding, 1 cm wide open fracture, stick core, abundant carbonaceous plant fragments, silty matrix	20										R3
25		108.06	109.70	1.64	SS-SLST	as above, stick core, ground core at base, very silty at base, 1 calcite-lined joint, 2 parallel clean joints	24										R2
26		109.70	109.78	.08	Lost	core											
26		109.78	109.90	.12	SLTST	dark gray, massive, semi-stick											R2
26		109.90	110.44	.54	Shale	black, massive, silty with occasional blebs of yellow pyrite, 1 clean joint and 1 calcite-lined joint			LPD-303-07	109.9-110.17							R2
											2.82	.64	79.03				
26		110.44	110.61	.17	Coal	soft, dull and powdery, compact core											S1
26		110.61	110.63	.02	Coal	flakey, bright and polished											S5
26		110.63	110.71	.08	Coal	soft, dull and powdery											S1
26		110.71	111.15	.44	Lost	core											
26		111.15	111.20	.05	Shale	coaly and carbonaceous, black, stick core											R3
26		111.20	111.30	.10	Lost	core											
26		111.30	111.33	.03	Coal	soft and powdery, compact											S3
26		111.33	111.42	.09	Coal	shaley, dull and hard, rubble to broken core											S5
26		111.42	111.47	.05	Coal	dull with bright, soft and crushes to powder in fingers			LPD-303-08								S3
											5.01	.57	77.52				
26		111.47	111.52	.05	Lost	core											
26		111.52	111.69	.17	Coal	shaley, black, flakey, pyrite blebs common											R1
26		111.69	111.70	.01	SLTST	coaly, gray, massive											R2
26		111.70	111.73	.03	Coal	shaley, as before											R1

ALL LINEAR UNITS IN METRES

† R&/ORS — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LIDGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH BY TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS 1	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.		C.V.
										o.r.b.	residual	d.b.	d.b.	d.b.			
26		111.73	111.81	.08	Shale	coaly and carbonaceous, black pyrite blebs are flattened in bedding planes, coal is polished											R2
26		111.81	111.86	.05	Coal	shaley as before											S5
26		111.86	111.91	.05	SLTST	gray, massive, hard with polished coal surfaces, stick-core											R2
26		111.91	111.95	.04	Coal	soft, black and powdery			1P1-303 -08								S1
26		111.95	112.05	.10	Coal	polished and slickensided, flakey and compact, very shaley with shale partings											S5
26		112.05	112.07	.02	Shale	carbonaceous, coaly and good shaley partings											S3
26		112.07	112.24	.17	Shale	black, carbonaceous, coaly and abundant plant fragments, stick core											R2
26		112.24	112.32	.08	Coal	very shaley, black and flakey, almost a Rouge											
26		112.32	112.40	.08	Shale	as before											R2
26		112.40	112.60	.20	Shale	as before											R2
		112.60	112.70	.10	Lost	core											
26		112.70	114.25	1.55	SLTST	dark gray to black, massive, very thin irregular white calcite veinlets, 2 calcite-lined parallel joints, broken core at top to stick at bottom, carbonaceous plant fragments											R2
27		114.25	114.37	.12	SLTST	as before, stick core											R2
27		114.37	114.49	.12	Shale	black, fissile, with abundant irregular white calcite veinlets											R1
		114.49	114.74	.25	Lost	core											
27		114.74	115.95	1.21	SLTST	black - dark gray, carbonaceous with abundant plant fragments, stick core, massive, occasional very thin discontinuous calcite microveinlets											R2
27		115.95	116.82	.87	SLTST	as above, stick core											R2
		116.82	117.14	.32	Shale	silty and coaly, black, fissile with occasional white calcite veinlets, broken to rubblely core											R1
		117.14	117.44	.30	SLTST	as before, stick core											R2

ALL LINEAR UNITS IN METRES

1-RB/ORS - GOLDER ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. R.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO MAIN	DESCRIPTION (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ ANGLE FROM ANNUAL (+)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO							MOIST % o.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
27		117.44	118.04	.60	SLTST	as before, 2 joint sets, stick core										R2
27		118.04	118.22	.18	SLTST	as before but very well developed anastomosing network of white calcite veinlets, 2 dry fractures and one 1cm white calcite vein										R2
28		118.22	118.65	.43	SLTST	as before, stick core, this siltstone grades very gradually into rock unit below (fine grain sandstone) boundary is arbitrary										R2
28		118.65	119.00	.35	SST	fine grain, dark grey to brown, massive, only occasional carbonaceous plant debris										R3
		119.00	119.10	.10	Lost	core										
		119.10	119.73	.63	SST	as above, stick core										R3
		119.73	120.50	.77	SST	fine grain, dark gray, finely laminated with abundant thin white calcite veins and associated hair-like microveinlets, lamination is wavy but not cross-bedded, stick core, coaly and silty at top, most calcite veining is associated with fracturing not jointing, abundant plant remains at bottom	15									R3
		120.50	120.54	.04	Shale	black, carbonaceous										R2
		120.54	120.67	.13	Coal	dull but polished, flakey but powdering when crushed			LPD-303							
										-09	8.12	2.13	4.57	19.30	76.13	4.5
		120.67	120.77	.10	Lost	core										
28		120.77	121.01	.24	Coal	soft, dull, very fine grain, powdery, compact										S1
28		121.01	121.78	.77	Coal	polished, flakey, compact										S3
28		121.78	121.98	.20	Coal	soft, dull, powdery										S1
		121.98	122.08	.10	Lost	core										
28		122.08	122.29	.21	Coal	as above, compact			LPD-303							S1
										-10	5.95	2.31	4.20	20.28	75.52	7.5
28		122.29	122.71	.42	Coal	polished, flakey, brittle and hard, compact										S4
29		122.71	123.11	.40	Coal	highly polished, brittle, flakey, broken core										S5
		123.11	123.31	.20	Lost	core										
29		123.31	123.48	.17	Coal	soft, dull, powdery, compact										

ALL LINEAR UNITS IN METRES

†:R8/OR S — GOLDR ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										d. r. b.	Residual	d. b.	d. b.	d. b.			
29		123.48	125.02	1.54	Coal	bright and dull in alternate 1-2 cm width discontinuous bands. Brittle core but compact, some of the bright is attributed to highly polished surfaces											S5
29		125.02	125.55	.53	Coal	as above											S5
		125.55	125.70	.15	Lost	core											
29		125.70	125.85	.15	Coal	soft, powdery to flakey, much polishing											S1
29		125.85	126.52	.67	Coal	as described above											S4
29		126.52	126.65	.13	Coal	soft, powdery, dull, compact core											S2
29		126.65	126.69	.04	SLTST	dull gray, carbonaceous, powdery to rubbley core											R1
		126.69	126.79	.11	Lost	core											
29		126.79	127.28	.49	SLTST	sandy, coaly with abundant plant fragments, dark gray, massive, broken core											R2
		127.28	127.48	.20	Lost	core											
30		127.48	128.15	.67	SLTST	shaley, coals and carbonaceous, abundant plant fragments, good shaley partings in places, black, 1 clean parallel joint surfaces, semi-stick core											R2
		128.15	128.59	.44	SLTST	as above											R2
		128.59	129.48	.89	SLT-SS	dark gray, siltstone matrix with irregular light gray sandstone laminae and bonding, some of the sandstone bands show burrowing and flaser structure, broken to rubbley core											R2
		129.48	129.59	.11	Lost	core											
		129.59	129.63	.04	Shale	carbonaceous, black, coaly											
		129.63	129.82	.19	SLTST	as above											
		129.82	129.93	.11	Lost	core											
		129.93	131.33	1.40	SLT-SS	as above but sandstone laminations more pronounced and numerous giving the rock a striped appearance. Silty dark gray-black bands are polished in places, some minor cross-bedding, core is rubbley at top but stick to semi-stick otherwise			25								R2

ALL LINEAR UNITS IN METRES

†:BB/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.G.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST % d.r.b. [residual]	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
31		131.33	132.33	1.00	SST	fine grain, light gray, equigranular, with very thin coaly partings along bedding planes giving the rock a fissile habit, 3 parallel calcite-lined joints, black carbonaceous fragments also common, semi-stick core, some core missing at top.	23									R3
31		132.33	132.55	.22	SLTST	sandy, finely laminated, carbonaceous, fissile, very rubblely at base	33									R2
31		132.55	132.65	.10	SST	as above, stick core										R3
31		132.65	132.79	.14	SLTST	as before, stick core	19									R2
		132.79	132.92	.13	Lost	core										
31		132.92	133.10	.18	SS-Silt	fine grain, light gray bands of sandstone separated by dark gray to black carbonaceous silt rock, somewhat fissile along silt bands, core rubblely at top, broken otherwise	22									R2
31		133.10	133.32	.22	Shale	carbonaceous and coaly, coaly layer polished and slicken-sided, occasional irregular calcite veinlets										R1
31		133.32	133.65	.33	SST	fine grain, light gray, equigranular, 2 calcite-filled fractures and 3 calcite-filled joints										R3
31		133.65	133.82	.17	Silt	sandy, dark gray with abundant burrowing, thin calcite-filled joint set, stick core										R2
31		133.82	134.19	.37	Silt	as above but rubble core										R2
31		134.19	135.02	.83	SS-Silt	interbanded light gray, fine grain cross-bedded sandstone with dark gray laminated silt, fissile along silt beds, silt carbonaceous in places, 2 clean parallel joints	27									R2
31		135.02	135.22	.20	shale	black fissile, carbonaceous										R1
31		135.22	135.72	.50	Silt	very shaley, black carbonaceous, broken to rubblely core										R2
		135.72	135.85	.13	Lost	core										
32		135.85	136.45	.60	Shale	as before, compacted core										R1
		136.45	136.53	.08	Lost	core										

ALL LINEAR UNITS IN METRES

† RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % d.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
32		136.53	137.50	.97	Shale	silty, carbonaceous and coaly with polished coaly faces, broken to rubble core, possible lost core											R2
32		137.50	137.64	.14	Shale	as before, but very coaly		LPD-303-11	3.71	.88	85.86				0.0		R2
32		137.64	137.71	.07	Coal	soft, dull, powdery											S1
32		137.71	137.76	.05	Coal	flakey, polished											S3
32		137.76	137.80	.04	Shale	coaly, black											R1
32		137.80	137.98	.18	Coal	flakey and polished as before											S1
32		137.98	138.08	.10	Coal	dull, soft, powdery											S1
32		138.08	138.16	.08	Coal	flakey, soft and polished as before		LPD-303-12	7.41	2.36	11.55	20.18	68.27	6.0			S2
32		138.16	138.26	.10	Coal	powdery to flakey, polished, some pyrite blebs											
32		138.26	138.35	.09	Coal	blocky to flakey, strongly polished but dull coal											S5
32		138.35	138.40	.05	Coal	very fine flakes to powdery, soft and dull											S1
32		138.40	138.64	.24	Silt	shaley, dark gray to black, massive with coaly plant fragments and veinlets, core is rubbley at top to broken at bottom, 3-4 cm wide bed, pyrite traces in middle of section											
		138.64	138.72	.08	Lost	core											
33		138.72	140.12	1.40	SLT-SS	interbedded as before, some possible burrowing, rubbley at top, stick core otherwise											R3
33		140.12	140.84	.72	Silt	black, massive, shaley at top, abundant carbonaceous plant material, 1 clean joint											R2
33		140.84	141.79	.95	SS-Silt	interbedded, 4 parallel joints, occasional very thin calcite veinlets											R3
33		141.79	142.02	.23	Silt-SS	as before, ground core											
33		142.02	143.32	1.30	Silt-SS	as before, sandstone shows some burrowing, also numerous calcite veinlets, one calcite-lined joint set											R3
34		143.32	144.91	1.59	Silt-SS	as above, strongly disrupted bedding at bottom, stick core											

ALL LINEAR UNITS IN METRES

*R&OR S — GOLDER ASSOCIATES HARDNESS CODE

*RD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 303
CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
										d.b.	residual	d.b.	d.b.	d.b.		
34	144.91	146.32	1.41	SS-Silt	fine grain, light gray equigranular bands of sandstone, intercalated with dark gray silt bands, occasional bioturbations and weak cross-bedding and soft sediment deformation, ground and rubblely core at top and bottom semi-stick in middle, 1 clean fracture, 1 calcite fracture, some calcite veining	21										R3
34	146.32	147.39	1.07	SS-Silt	as above, broken and rubblely core											
36	147.39	148.45	1.06	SS-Silt	as above, burrowing more prevalent, semi-stick, one calcite joint set											R4
36	148.45	149.70	1.25	SS-Silt	as above, semi-stick	23										R4
36	149.70	151.20	1.50	SS-Silt	as before, stick core											R4
37	151.20	152.73	1.53	SS-Silt	as before, stick core	27										R3
37	152.73	153.84	1.11	Silt	black to dark gray, massive, carbonaceous, stick core, 1 clean fracture parallel to core axis	26										R3
37	153.84	154.24	.40	SS-Silt	as before, semi-stick, 1 calcite fracture,											R3
37	154.24	155.35	1.09	Silt-SS	similar to above, but more silty, very rubblely at top and bottom, semi-stick otherwise											R3
38	155.35	155.88	.53	SS-Silt	as before, well-developed calcite joint set, and 1 calcite fracture.	27										R3
38	155.88	156.65	.77	Shale	fissile, black, massive, carbonaceous, 1 clean fracture, semi-stick to broken core at bottom, calcite extension fractures with traces of pyrite	25										
38	156.65	157.67	1.02	SST	silty, medium gray to dark gray, some polished carbonaceous joints, semi-stick to rubblely at base, extensive calcite vein network, coaly polished surfaces associated with calcite network	49										R3
38	157.67	158.13	.46	SST	finely laminated light gray, fine grain, very pronounced calcite joint set and one calcite fracture set, weak cross-bedding	34										R3

ALL LINEAR UNITS IN METRES

1-R4/R3S -- GOLDER ASSOCIATES HARDNESS CODE
 RQD -- ROCK QUALITY DESIGNATION [%]
 FF -- FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEPOL
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.		C.V.	
										a.r.b.	Residual							
38	158.13	158.77	.64	Shale	silty, black, carbonaceous, fissile, one clean joint		41											R2
39	158.77	159.80	1.03	Shale	as above, but more coaly													
	159.80	160.23	.43	Lost	core - probably coaly shale													
39	160.23	160.57	.32	Coal	very soft, flakey and polished													S2
39	160.57	161.01	.44	Coal	shaley to very shaley, polished, flakey													S3
39	161.01	161.13	.12	Coal	flakey, soft and highly polished, and somewhat shaley, broken core			LPD-303	159.68 to 161.93	8.34	.68	26.36	16.39	57.25	2.5			S1
39	161.13	161.54	.41	Shale	carbonaceous, black and coaly, broken core													
39	161.54	161.66	.12	Coal	very shaley, flakey to powdery, soft													S1
	161.66	161.69	.03	Lost	core													
39	161.69	161.93	.24	Shale	very coaly and polished, dark to black, rubbley core to almost mud													S3
39	161.93	163.27	1.34	Shale	coal and carbonaceous, black, semi-stick and broken polished coal joints, some irregular calcite joints, abundant carbonaceous plant fragments			LPD-303		3.43	.70	81.00			0.0			R2
39	163.27	163.40	.13	Shale	as above													
	163.40	163.65	.25	Coal	lost core													
39	163.65	163.78	.13	Coal	powdery, dull, soft													S1
	163.78	163.85	.07	Coal	lost core													
40	163.85	163.92	.07	Shale	black, polished as before			LPD-303		13.46	.82	16.14	18.72	65.14	6.5			R2
40	163.92	164.20	.28	Coal	flakey, powdery, dull but with much polished surface													S2
40	164.20	164.37	.17	Shale	coaly and carbonaceous as before													R2
	164.37	164.50	.13	Lost	core													
40	164.50	164.62	.12	SST	fine grain, light gray, ground core													R3
	164.62	164.70	.08	Shale	as before													
	164.70	164.90	.20	Lost	core													

ALL LINEAR UNITS IN METRES

1:RB/OR S - GOLDR ASSOCIATES HARDNESS CODE
 #RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LDGPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	VM %	FC %	F.S.I.	C.V.	
40	164.90	165.00	.10	Coal	soft, powdery, dull											S1
	165.00	165.40	.40	Lost	core											
40	165.40	165.81	.41	Shale	as before											
40	165.81	167.08	1.27	Shale	as before, 3-4 cm wide, soft, dull coal bands, very rubblely at base, otherwise some stick, shale is silty in middle, polished coal joints		28									R2
40	167.08	167.44	.36	Shale	as before, semi-stick											R2
40	167.44	167.60	.16	Coal	soft, dull, powdery											S1
41	167.60	168.62	1.02	Silt	shaley, black, massive, rubblely at top, one calcite joint set											R2
	168.62	168.92	.30	Lost	core											
41	168.92	170.29	1.37	Silt	as above, carbonaceous, coaly, ground core at top, broken core in middle, stick core otherwise											R2
41	170.29	171.75	1.46	Silt	as before, stick core, rubblely core near bottom		33									R2
41	171.75	172.25	.50	Silt	as before, stick core											R2
42	172.25	172.51	.26	Coal	shaley, powdery and soft, almost a mud			LPD-303								S1
42	172.51	172.61	.10	Coal	flakey, polished			-16	15.50	.69	17.91	15.88	66.21	1.5		S2
42	172.61	172.80	.19	Coal	granular to blocky, bright with dull, cleated											S3
42	172.80	172.83	.03	Shale	coal and carbonaceous, black, massive			LPD-303								R2
	172.83	172.88	.05	Lost	core			-17	5.71	.75	11.19	18.76	70.05	4.5		
42	172.88	173.20	.32	Shale	as above, polished coaly joints, broken core											R2
42	173.20	173.40	.20	Coal	soft, dull and powdery											S1
42	173.40	173.47	.07	Coal	polished, flakey											S2
42	173.47	173.62	.15	Coal	soft, dull and powdery											S5
	173.62	173.90	.28	Lost	core											

ALL LINEAR UNITS IN METRES

1 = RB/RS — GOLDR ASSOCIATES HARDNESS CODE

-RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ DIPPING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS 1	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										o. f. b.	residual						
42	173.90	173.95	.05	Coal	dull with bright and polished surfaces												S5
	173.95	174.04	.09	Lost	core												
42	174.04	174.24	.20	Coal	as above												S5
42	174.24	174.56	.32	Coal	polished, flakey												S3
42	174.56	174.69	.13	Coal	bright, cleated, hard			LPD-303	17								R1
42	174.69	175.07	.38	Coal	polished, flakey as before												S4
42	175.07	175.10	.03	Coal	bright, cleated, hard												R1
42	175.10	175.13	.03	Coal	polished, flakey												S4
42	175.13	175.33	.20	Coal	bright, cleated												R1
42	175.33	175.50	.17	Coal	polished, flakey												S4
	175.50	175.58	.08	Lost	core												
	175.58	175.64	.06	Coal	soft, dull, powdery												S1
	175.64	176.20	.56	Coal	dull, flakey but with polished surfaces												S3
42	176.20	176.25	.05	SLTST	dark gray, massive, coaly												R3
42	176.25	176.48	.23	Coal	flakey, polished but powdery and dull when crushed												S3
42	186.48	176.57	.09	Shale	coaly, carbonaceous, black, with polished coaly fractures.												R2
42	176.57	176.93	.36	Shale	coaly, carbonaceous, black as above												R2
43	176.93	177.12	.19	Coal	soft, dull, powdery, like mud												S1
	177.12	177.17	.05	Lost	core												
43	177.17	177.57	.40	Shale	black, massive with polished coaly fractures, slick core												R2
	177.57	178.00	.43	SS1	core												
43	178.00	178.20	.20	Coal	soft, dull, powdery, as before												S1
43	178.20	178.23	.03	Coal	bright and dull, hard and brittle												S4

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGEPOLE
AREA	S.E. B.C.

HOLE No	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
43		178.23	178.29	.06	Shale	coaly, dull, black, with abundant pyrite blebs										R1
43		178.29	178.36	.07	Coal	soft, dull, powdery										S1
		178.36	178.51	.15	Lost	core										
43		178.51	179.40	.89	Shale	as before with polished coaly fractures, occasional 1 - 2 cm coal bands										R2
43		179.40	180.35	.95	Shale	as above, but becoming more silty in irregular thin calcite fracturing, stick										R2
43		180.35	180.47	.12	Shale	as above, stick										R2
		180.47	180.67	.20	Lost	core										
43		180.67	180.74	.07	Coal	soft, dull and powdery										S1
		180.74	180.86	.12	Lost	core										
43		180.86	181.16	.30	Shale	as above, semi-stick										R2
43		181.16	181.36	.20	Coal	flakey, soft, compacted			LPD-303 -18	7.31	.58	13.38	18.84	67.78	5.5	S2
43		181.36	181.50	.14	Coal	shaley with abundant polished fracture surfaces										S5
43		181.50	181.75	.25	Coal	powdery to block, abundant polished surfaces										S1
43		181.75	181.79	.04	Shale	as before										R2
43		181.79	181.97	.18	Shale	as before										R2
44		181.97	183.30	1.40	Silt	shaley, black, massive with .5 to 4 cm wide bright granular coal bands, silt has abundant carbonaceous plant fragments at top but virtually none at bottom, no coal bands at bottom, stick to semi-stick										R2
44		183.30	184.33	1.03	Silt	as before, no coal bands, semi-stick, becoming sandy at bottom										R2
44		184.33	184.87	.54	SST	silty, dark grey, fine grain, fracture set parallel with core axis, lined with pyrite, semi-stick										R2
44		184.87	186.37	1.50	SST	similar to above but occasional bands of light gray sandstone, one calcite-lined fracture, occasional carbonaceous plant fragments			17							R2

ALL LINEAR UNITS IN METRES

† -R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 +RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S. E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.	
										a.r.b.	residual					
45	186.37	187.74	1.37	SST	as above, stick core										R2	
45	187.74	189.05	1.31	SST	fine grain, alternate white and dark striped laminations (one to two cm), some weak cross-bedding at base, occasional calcareous plant fragments, stick core		17								R2	
45	189.05	189.15	.10	SST	as before, broken to rubblely										R2	
45	189.15	189.75	.60	SST	as before but with polished coaly bedding, surfaces are slickensided, black and white laminations show gentle folding											
46	189.75	190.70	.95	SST	dark gray, fine grain, silty, with little or no lamination, stick core										R2	
46	190.70	192.21	1.51	SST	black and white striped lamination, fine grain, stick core, one calcareous fracture		11								R2	
46	192.21	193.82	1.61	SST	as above, some weak cross-bedding, darker bands are carbonaceous and polished										R2	
47	193.82	195.30	1.48	SST	medium-grained, salt and pepper, silt rip-up clasts at top, 1-2mm wide coal stringers, occasional white calcite veinlets, some polished coaly surfaces, typical basal sandstone, stick core		18								R3	
47	195.30	196.71	1.41	SST	salt and pepper as before, very weak lamination in places, rubblely at top, semi-stick otherwise		20								R3	
47	196.71	197.79	1.08	SST	as before										R3	
48	197.79	198.09	.30	SST	fine grain, medium gray, light and dark cross-beds		33								R3	
48	198.09	198.43	.34	SST	as above, two coal-lined fractures polished, one joint calcite-lined		33								R3	
48	198.43	198.93	.50	SST	medium grain, three calcite-lined fractures											
48	198.93	199.68	.75	SST	coarse-grained to conglomeratic, abundant coaly partings										R3-R4	
48	199.68	199.77	.09	Shale	dark gray, four highly polished fractures with coal and calcite											

ALL LINEAR UNITS IN METRES

F-RB/ORS - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CURE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.t.b. residual	ASH %	VM %	FC %	F.S.I.	C.V.			
48		199.77	200.33	.56	SST	coarse to medium grain, with coaly splits rubblely at top, stick at base, fractures are coal-lined and slickensided	34										R3	
48		200.33	200.73	.40	SST	medium grain, rubblely at top, semi-stick at base, coaly along bedding plane	24											R3
48		200.73	202.03	.30	SST	medium to coarse grain, abundant coaly splits, rubblely, polished coal along abundant fractures, bedding disturbed												R3
49		202.03	202.84	.81	SST	as above, 5 coal-filled fractures, becomes rubble at base												R3
49		202.84	203.35	.51	SST	as above, 4 coal-lined fractures, one calcite-lined fracture	24											R3
49		203.35	204.14	.79	SST	medium to coarse grain, coaly wisps, two calcareous stringers, 3 coal-lined polished fractures, medium to dark gray	27											R4
49		204.14	205.46	1.32	SST	as above, 8 coal-lined fractures, 5 calcareous stringers, semi-stick	22											R4
49		205.46	205.57	.11	SST	coarse grain, rubble, coaly fragments, polished	22											R4
49		205.57	205.74	.17	SST	conglomeratic, semi-stick, abundant coaly specks, two coal-lined fractures												R1
50		205.74	206.66	.92	SST	coarse-grained, abundant coaly partings, rubblely, polished coal-lined fracture												R2
50		206.66	207.70	1.04	SST	coarse sandstone to conglomeratic, 9 coal-lined fractures, polished, semi-stick to rubblely, bedding disturbed												R3
		207.70	207.87	.17	SST	one clean joint												
		207.87	208.75	.88	SST	medium to coarse-grained, medium gray, 13 coal-lined polished fractures, wavy bedding	25											R3
		208.75	208.83	.08	SST	as described above												
		208.83	209.08	.25	SST	medium to coarse, as above, 3 coal-lined fractures												R3
		209.08	209.17	.09	SST	rubble, broken to ground, medium to dark gray												

ALL LINEAR UNITS IN METRES

†:R4/OR 5 — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT
AREADUNFOLP
S.E. R.C.HOLE No.
CONTINUED

303

PAGE 26
OF 36

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.	
	209.17	210.26	1.09	SST	coarse to conglomeratic, carbonaceous coaly bands											R3
	210.26	210.66	0.40	Lost	core											
	210.66	211.00	0.34	SST	as above, 3 coal-lined fractures											R2
	211.00	211.22	0.22	SST	interbedded sandstone, siltstone with shale & coaly splits, 4 coal-lined fractures, polished											R2
	211.22	212.23	1.01	SLTST	medium gray with dark gray shaley bands, finely laminated, well-developed bedding, 5 coal-lined bedding plane fractures, semi-stick	18										R2-R3
	212.23	213.77	1.54	SLTST	as above, cross-bedding, 2 clean fractures, 3 coal-lined fractures, 1 calcite lined, stick	26										
	213.77	215.24	1.47	SLTST	as above, shaley near centre, semi-stick at top, broken at base, 5 clean fractures, 1 calcite stringer	24										
	215.24	216.75	1.51	SLTST	as above, some soft sediment deformation	33										
	216.75	217.11	0.36	SLTST	as above, 2 clean fractures, becoming coarse- grained to base	34										
	217.11	217.28	0.17	SST	fine to very fine grained, 2 calcite-lined fractures, shaley splits at base, semi-stick											R4
	217.28	217.34	0.06	SST	rubble, shale, sandstone, fragments polished, lined with calcite, semi-stick											
	217.34	217.72	0.38	SST	interbedded with sandstone at top, fine grain	24										R3
	217.72	217.75	0.03	Rubble	sandstone, coaly, polished											
	217.75	218.06	0.31	SST	fine to very fine grained with coaly wisps, one coal-lined fracture	18										R4
53	218.06	218.88	0.82	SST	as above, medium-grained at base, 4 coal-lined bedding plane fractures, becoming massive											
53	218.88	218.97	0.09	SST	conglomeratic, massive, semi-stick											R4
53	218.97	219.47	0.50	SST	medium to coarse-grained, medium gray, abundant coal partings, 5 coal-lined fractures, polished											R3
53	219.47	219.97	0.50	SST	as above, very coarse-grained at base, massive											

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. 303
CONTINUEDFILE No BA-212A
REVISED Nov 1978

CORE & COAL CORE DESCRIPTION

PROJECT	LUDREPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO						MOIST % a.r.b.	residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
53		219.97	220.04	0.07	SST											
53		220.04	220.89	0.85	SST	19										
53		220.89	221.40	0.51	SST											
54		221.40	222.10	0.71	SST											R4
54		222.11	222.41	0.30	Lost											
54		221.41	221.36	0.95	SST	29										R3
54		223.36	224.29	0.93	SST	27										R3
54		224.29	224.71	0.42	SST											R3
54		224.71	224.81	0.10	SST/SL											
54		224.81	225.71	0.90	SLST											R3
55		225.71	227.25	1.54	SLST	24										R3
55		227.25	228.21	0.96	SLST											R3
55		228.21	228.70	0.49	Shale											R3
55		228.70	228.73	0.03	Coal											
55		228.73	229.51	0.78	Shale											R2
56		229.51	230.71	1.20	Shale											R2

ALL LINEAR UNITS IN METRES

1 - RB/OR S - GOLDER ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										o.v.b.	residual						
56		230.71	231.39	.68	shale	as above, broken, with coaly parting, six polished coaly fractures											R2
56		231.39	231.43	.04	coal	bright, polished powdery											
56		231.43	231.70	.27	shale	as previously described two coal filled fractures, massive no bedding, semi stick											
56		231.70	231.76	.06	shale	very black and coaly polished highly fractured											
56		231.76	231.81	.05	shale	black, carbonaceous, rubblely											R3
56		231.81	232.04	.23	coal	shaly, fissile dull with bright bands	55		↑								
56		232.04	232.18	.14	coal	powdery to cemented dull with bright polished	53		↑								
56		232.18	232.27	.09	shale	coaly, dark gray to black		LPD-303									
56		232.27	232.50	.23	coal	shaly polished with bright bands,			↓								
		232.50	232.60	.10	lost	coal			↓								
56		232.60	232.82	.22	shale	abundant coaly splits, rubblely dark gray to black, polished on fractured surfaces											R2
56		232.82	232.85	.03	coal	rubblely, dull											
56		232.85	233.31	.46	shale	very dark gray to black, carbonaceous, coaly, two polished coaly fractures semi stick											R2
56		233.31	233.46	.15	rubble	coaly shale, broken to powdery, highly polished and fractured.											
57		233.46	234.0	.54	shale	as previously described, two clean fractures, rubblely at top											R2
57		234.0	234.52	.52	shale	as above, two clean polished fractures											R3
57		234.52	235.22	.7	shale	dark gray to black, very coaly, highly fractured, polished											R3
57		235.22	235.62	.4	lost	core											
57		235.62	235.86	.24	shale	medium to dark gray less coaly than above unit, some stick											R3
57		235.86	235.99	.13	shale	coaly, rubblely, polished											R2
57		235.99	236.09	.10	lost	core											
57		236.09	236.25	.16	coal	shaly fissile bright bands			↑								R1

ALL LINEAR UNITS IN METRES

F-RB/ORS — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.	
										a.r.b.	residual							
57		236.25	236.38	.13	coal	soft, powdery, bright with dull polished												
57		236.38	236.9	.52	coal	fissile, highly fractured, polished, bright	54	LPD	303-20	236.09	237.10	5.86	0.56	10.18	17.25	2.57	1.5	
57		236.9	237.02	.12	coal	shaley, fissile, polished												R1
57		237.02	237.39	.37	coal	fissile, bright, polished, breaks, fragments												R4
57		237.19	237.25	.06	shale	coaly, black, massive												R2
57		237.25	237.37	.12	coal	soft, powdery, dull with bright	52											
57		237.37	237.42	.05	coal	as above												
57		237.42	237.45	.03	shale	as previously described												
58		237.45	239.07	1.62	coal	bright with dull bands, fissile	55											
58		239.07	239.14	.07	shale	dark gray to black, massive												R3
58		239.14	239.24	.1	shale	lost												
58		239.24	240.47	1.23	coal	powdery with fragments, polished bright with dull	52	LPD	303-22	5.15	0.63	9.20	18.77	2.03	3.5			
58		240.47	240.79	.32	coal	as above	52											
58		240.79	241.89	1.10	coal	fissile, polished, dull	55											
58		241.89	242.09	.2	coal	soft powdery bright with dull	52											
59		242.09	242.59	.5	coal	fissile, shaley polished												R2
59		242.59	243.08	.49	shale	dark gray, carbonaceous and coaly, semi stick to broken, thru polished coal fractures, massive												R1-R2
59		243.08	243.73	.65	shale	as above, becoming more coaly at base, fissile, highly fractured, polished												R1-R2
59		243.73	244.33	.6	coal	dull, fissile, shaley, highly fractured, polished												R1
		244.33	244.53	.2		lost core												
59		244.53	244.93	.4	shale	very coaly, broken, abundant coal lined fractures												R2
		244.93	245.33	.4		lost core												

ALL LINEAR UNITS IN METRES

† R1/R2/S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT LODGEPOLE
 AREA S.E. R.C.

HOLE No. 303
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS	
		FROM	TO						MOIST %	ASH %	VM %	FC %	F.S.I.		C.V.
59		245.33	246.03	.7	coal powdery to fragmented dull with bright	51									S1
59		246.03	246.16	.13	coal fissile, polished, dull	55									
59		246.16	246.46	.3	lost core										
59		246.46	246.88	.42	shale coaly, dark gray to black, massive, semi stick.										R2
60		246.88	248.28	1.4	shale massive, medium to dark gray, carbonaceous with coaly wisps, 13 highly polished curved fractures										R2
60		248.28	249.38	1.1	shale as above, 10 polished fractures semi stick at top, rubblely at base.										
		249.38	249.65	.27	shale medium gray, massive blocky, same as above, five polished fracture surfaces										
60		249.65	249.72	.07	shale black, carbonaceous extremely fissile, highly fractured and polished										R1
60		249.72	249.78	.06	coal dull, shaley, highly polished	55									
60		249.78	250.24	.46	coal soft, powdery, dirty dull with some bright stringers	51	LPD-303	249.72 to 250.89							
61		250.24	250.54	.3	coal as above	-23			5.28	2.79	11.26	18.34	70.40	1.0	
61		250.54	250.77	.23	coal dull with bright, fissile, compact	53									
61		250.77	251.03	.26	coal powdery, compact polished, bright with dull	52									
61		251.03	251.26	.23	coal fissile, polished, fragmental to powdery										
61		251.26	252.23	.97	lost core according to geophysical log										
61		252.23	252.48	.25	shale fissile, highly fractured, polished rubblely some coaly wisps		LPD-303								R1
		252.48	252.76	.28	shale as above	-24			2.25	0.53	82.23			0.0	
61		252.76	253.00	.24	shale lost core										
		253.00	253.3	.3	coal lost core										
61		253.3	254.01	.71	coal powdery, bright near top dull near base, compact										

ALL LINEAR UNITS IN METRES

1:R&ORS — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. 303
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEROLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
61	254.01	254.51	254.51	.50	coal	soft, powdery, ground and polished few shaley bands, bright at top dull at base										S1
61	254.51	254.71	254.71	.2	coal	lost core										
61	254.71	254.93	254.93	.22	shale	carbonaceous, dark gray massive, broken with polished surfaces										R3
61	254.93	255.1	255.1	.17	rubble	coal and shale, fragmented to powdery										
61	255.1	255.55	255.55	.45	shale	carbonaceous to coaly, massive, highly fragmented with polished surfaces broken			LPD-303 -25	3.70	0.72	8.26	19.84	71.90	8.5	R2
61	255.55	256.15	256.15	.6	shale	lost core										
61	256.15	256.21	256.21	.06	shale	as above, coaly at base										
62	256.21	257.0	257.0	.79	coal	very fine ground, dull with some bright fissile bands.										S1
62	257.0	257.37	257.37	.37	coal	fissile, polished, dull with bright,	54									
62	257.37	257.61	257.61	.24	coal	dull with bright, some powdery bands	55									
62	257.61	259.31	259.31	1.7	coal	powdery with some fragments bright near top shaley near center, compact becoming harder and brittle at base	52									
62	257.31	259.45	259.45	.14	coal	dull with bright, fissile, some pyrite	54		LPD-303 -26	6.46	0.64	12.33	17.36	70.31	2.0	
62	259.45	259.59	259.59	.14	coal	ground, powdered, compacted dirty	51									
62	259.59	260.56	260.56	.97	coal	shaley with bright bands, broken, sheared polished, compact	53									
63	260.56	261.46	261.46	.90	coal	bright with dull bands, fissile, broken to semi stick										R1
63	261.46	262.1	262.1	.64	shale	dark gray to black, abundant coaly band, brecciated in centre										
63	262.1	263.19	263.19	1.09	shale	as above, broken to brecciated, compact polished, becoming less coaly										
	263.19	263.27	263.27	.08	shale	semi stick, as above										R2
63	263.27	263.29	263.29	.02	shale	brecciated, as above,										

ALL LINEAR UNITS IN METRES

1-#R/O/S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

▲RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		MOISTURE ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
63	263.5	263.71	.21	shale	dark gray to black, carbonaceous, broken abundant polished fractures											R2
63	263.71	264.06	.35	slt	broken to rubblely, some pyrite crystals, medium to dark gray											R3
63	264.06	264.76	.7	shale	lost core											
63	264.76	265.54	.78	shale	silty in center, semi stick, broken at base, fissile, massive, abundant polished fractured surfaces											
64	265.54	266.89	1.35	shale	brecciated, compacted, fragmental to powder, dark gray, massive,											
64	266.89	267.0	.11	shale	as above, but blocky											R2
64	267.0	267.26	.26	shale	very dark gray, carbonaceous, blocky and broken											R2
64	267.26	268.53	1.27	slt	semi stick finely laminated, medium to dark gray, three calcite lined fractures		15									R3
64	268.53	270.09	1.56	slt	as above, two clean fractures, bedding disturbed by worm burrows,		12									R3
65	270.09	271.19	1.10	slt	as above, semi stick, one breccia filled fracture		11									R3
65	271.19	271.65	.46	slt	as above, highly broken											
65	271.65	271.75	.1	slt	breccia,											
65	271.75	272.24	.49	slt	as previously described, two fractures clean.											
65	272.24	272.62	.38	slt	breccia, fragmented in ground compacted											R3
65	272.62	272.99	.37	slt	as previously described, broken to rubblely											
65	272.99	273.23	.24	slt	as above, semi stick											R3
66	273.23	274.5	1.27	slt	grading to fine grained sandstone, medium gray at top light gray at base, massive, semi stick											R4
66	274.5	274.67	.17	slt/ast	as above, broken, highly fractured											R4
66	274.67	275.2	.53	slt	medium gray, massive, semi stick one calcite lined joint,											R4

ALL LINEAR UNITS IN METRES

1:RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT LODGEPOLE
AREA S.E. B.C.

HOLE No. 303
CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC %	F.S.I.	
66	275.20	276.21	1.10	SLST/SS	interbedded, finely laminated, two calcite-lined fractures	15									R4
66	276.21	277.13	0.92	SLST/SS	as above, stick core										R3
67	277.13	277.69	0.56	SLST/SS	as above, broken to semi-stick, 1 calcite-lined fracture parallel to core axis										
67	277.69	279.04	1.35	SLST/SS	as above, stick core, two calcite veinlets, bedding disturbed										
67	279.04	279.24	0.20	SST	fragmented to medium-grained, light to medium gray, semi-stick, mostly massive	22									R3
67	279.24	279.60	0.36	SST	as above										
67	279.60	279.92	0.32	SST/SH	interbedded, bedding is deformed by soft sediment deformation, sandstone is fine grain, light gray; shale is dark gray, massive										
67	279.92	280.72	0.80	SST	medium to coarse grain, massive, medium to dark gray, semi-stick										R4
67	280.72	281.86	1.14	SST	as above, broken, abundant fracture lined with pyrite and coaly blebs										
68	281.86	283.28	1.42	SST	as above, highly fractured, broken pieces lined with calcite										R3
68	283.28	283.56	0.28	SST	as above, one coal-lined bedding plane fracture, stick core	18									R4
68	283.56	284.71	1.15	SST	coarse to very coarse, stick core, light gray lamination in a dark matrix, massive, one calcite stringer, cross-bedded at base, some pyrite	26									R4
68	284.71	286.20	1.49	SST	as above, two coal-lined fractures, pyrite and coaly blebs throughout										R4
69	286.20	287.80	1.60	SST	as above, some stick to semi-stick										R4
69	287.80	288.46	0.66	SST	as above, abundant coal partings, two coal-lined fractures										R3
69	288.46	289.08	0.62	Shale	abrupt upper contact, dark gray to black, carbonaceous, massive										R2
69	289.08	289.14	0.06	Breccia	breccia, some fragments are mainly shale, silt, in sandstone matrix										R2-K3

ALL LINEAR UNITS IN METRES

† R&ORS — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

† RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. 303
CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ ANGLE INCL 1°	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS?	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % D.T.B. residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
69		289.14	289.340.20		Shale	medium gray, massive										R2
69		289.34	289.460.13		Shale	as above										R2
70		289.46	289.730.27		Shale	as above, one polished fracture, semi-stick										R2
70		289.73	289.770.04		Coal	bright, fissile, polished		53								
70		289.77	289.880.11		SST	coarse grain, one pyrite-lined fracture										R3
70		289.88	289.910.03		Coal	as above										S3
70		289.91	290.850.14		SST	coarse-grain, abundant coaly partings, highly fractured, abundant pyrite crystals along fractures										R3
70		290.85	291.450.60		SST	same as above, broken to rubble										
70		291.45	291.750.30		Breccia	sandstone, ground, compact										
70		291.75	292.500.75		SST	as previously described, broken to rubble										
70		292.50	293.200.70		Lost	core										
70		293.20	293.240.04		SST	as above, rubble										
70		293.24	293.810.57		Shale	dark gray, rubble at top, semi-stick at base										R2
71		293.81	293.910.10		Shale	as above, highly broken, polished										R2
71		293.91	294.310.40		Shale	Lost core										R2
71		294.31	296.010.70		Shale	silty in places, dark gray to black, 6 clean polished fractures, grades to silt										R2
71		269.01	297.290.28		Silt	with shaley interbeds, medium gray, 6 polished fractures, clean		23								R3
71		297.29	297.560.27		SST	fine to medium grain, rubble										
72		297.56	298.340.78		SST	as above, with shaley beds and rip-up clasts, three calcite-lined fractures										R2
72		298.34	298.620.28		Silt	highly fractured, with abundant calcareous veinlets										R2
72		298.62	298.850.23		Shale	dark gray to black, massive, two polished clean fractures, semi-stick										R2

ALL LINEAR UNITS IN METRES

1 - R & OR S — GOLDER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	303
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.f.b. residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.	
72	298.85	300.11	1.26	shale	as above, broken, high fracture density, fractures smooth to polished.											
72	300.11	300.39	.28	shale	as above, rubble											
72	300.39	301.25	.86	silt/sh	becoming coarse grained towards base, finely laminated, rubble	20										
72	301.25	301.88	.63	ssr	fine to very fine grain											R3
73	301.88	302.11	.23	ssr	as above, rubble											
73	302.11	303.34	1.23	silt	fissile, sheared and polished, rubble											
73	302.34	302.64	.3		lost core											
73	302.64	302.77	.13	ssr	rubbly, broken to ground, fine grain, medium gray, pyrite on fractures											
73	302.77	303.07	.3		lost core											
73	303.07	303.27	.2	ss	same as above											
73	303.27	303.77	.5	ssr/s	inter bedded finely laminated broken to rubble, sandstone light gray, silt medium gray											R3
73	303.77	305.17	1.4	ssr	silt, sandstone grading into sand stone, three fractures, irregular, clean, medium gray	27										R3
74	305.17	306.77	1.6	ssr	seven joints lined with calcite pyrite, fine to medium grained	23										R3
74	306.77	307.11	.34	ssr	as above, rubble											
74	307.11	307.45	.33		lost core											
74	307.45	307.52	.07	ssr	breccia, ground											
74	307.52	307.56	.04	ssr	as above											
74	307.56	307.96	.4	ssr	as above, semi stick, three fractures lined with pyrite,											
74	307.96	308.30	.34	ssr	as above breccia											
74	308.3	309.0	.7		lost core											
74	309.0	309.9	.9	ssr	broken to brecciated, as above bedding over steepened	40										

ALL LINEAR UNITS IN METRES

1:RB/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LONGPOLE
AREA	S.E. B.G.

HOLE No.	303
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA					REMARKS 1	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM. %	FC. %		F.S.I.
										a. b.	residual					
75		309.9	311.2	1.3	sst	broken to brecciated, abundant calcite micro veinlets.										
75		311.2	312.2	1.0	sst	breccia as above, ground to powdery, few fragments of sand stone, lined with pyrite.										
75		312.2	312.25	.05	sir	dark gray, massive										R2
75		312.25	313.72	1.47	sir	disturbed bedding, shaley at base, medium to dark gray, 8 polished fractures.										R2
76		313.72	314.54	.82	shale	silty, fissile at top becomes massive and blocky, six polished fractures, grades to very fine grain sandstone at base, coaly wisps.										R2
76		314.54	314.88	.34	ssr	fine to medium grain with few dark gray silty bands										R3
76		314.88	314.91	.03	sir	dark gray, carbonaceous, one polished fracture										R2
76		314.91	315.31	.4	ssr	coarse grain, coaly blebs, one polished coaly fracture	22									R3
76		315.31	316.89	1.58	ssr	as above, six coaly polished fractures, three calcite stringers										R3
77		316.89	318.39	1.5	ssr	as above, becoming finer grained semi stick to broken	20									R3
77		318.39	319.77	1.38	ssr	medium to coarse grained, fewer coaly splits stick core, two coal lined fractures	23									R4
77		319.77	320.52	.75	ssr	as above	22									R4

ALL LINEAR UNITS IN METRES

1-RR/ORS — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	303
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

DATE	BEGIN	July 27/80
	END	

HOLE No.	LP -D304
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HOLE PARTICULARS

LOCATION	LODGEPOLE S.E. B.C.		
ELEVATION		HOLE BEARING (AZ) ¹	-
TOTAL DEPTH	250 M	HOLE ANGLE (°) ²	Vert

LOGGING

LOGS RUN	Gamma, Neutron, Density, Caliper
LOGGED BY	Bob Davies
OTHER TESTS	Dip Meter

COAL CORING PERFORMANCE

CORE DIAMETER	HQ
CORE RECOVERED	192.25
LENGTH CORED	219.29
CORE RECOVERY	87 %

EXAMINATION

LOG USED	Density, Gamma, Caliper
No. OF SEAMS SAMPLED	
EXAMINER (S)	T. Cole
DATE	July 27/80

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM OF SIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)			MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
1		30.7	31.09	.39	SLTST	carbonaceous, trace plant debris, dark grey, some irregular coaly traces, signs of grinding, calcareous										R3
1		31.09	31.41	.34	SLTST	as above, calcareous										R3
1		31.43	31.60	.17	SLTST	brownish grey, abundant plant debris, some iron-stain, broken, calcareous										
1		31.60	31.80	.2	Shale	black, coaly, rubbly, calcareous										R2
1		31.80	31.85	.05	Coal	chip to powder, bright with dull										
		31.85	33.1	1.25	Lost	core										
1		33.1	33.44	.34	Shale	dark grey, carbonaceous to coaly, silty in part, broken, one iron-stained joint, some ground core.										R3
1		33.44	34.20	.76	Shale	dark grey, carbonaceous to coaly, silty, signs of grinding, some slickensides										R3
1		34.2	34.38	.18	Shale	brownish grey, broken, iron-stained, plant debris, silty										
1		34.38	35.28	.9	Shale	dark grey, carbonaceous, plant material, silty, one iron-stained joint, abundant plant debris										R3
2		35.28	35.5	.22	Shale	as above, slightly calcareous										R3
2		35.5	36.83	1.33	SLTST	dark grey, carbonaceous, some medium grey interbeds, 3 iron-stained joints	26°									R3
2		36.83	36.98	.15	SLTST	as above, becoming slightly sandy, sandstone is moderately calcareous										
2		36.98	37.94	.96	SS-SLST	interbedded, light grey, sandstone is very fine grain, medium to dark grey siltstone, convolute current ripple laminations, sandstone is very calcareous, siltstone is moderately calcareous, 3 joints										R4
2		37.94	38.12	.18	SS-SLST	as above, badly broken, iron-stained										

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

▲ ANGLE MEASURED FROM CORE AXIS

† : R & OR S — GOLDR ASSOCIATES HARDNESS CODE

* ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
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CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		WEDGING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.		C.V.
										d.b.	residual	d.b.	d.b.	d.b.			
2		38.12	38.8	.68	SLTST	dark grey, carbonaceous, plant debris, broken core, coaly shale at base											R3
2		38.8	39.2	.4	SLTST	medium grey, one iron-stained joint											
3		39.2	39.5	.3	SLTST	as above											
3		39.5	39.7	.2	SLTST	some coal debris, becoming more shaley, one iron-stained joint											R3
3		39.7	40.56	.86	Shale	dark grey to black, very carbonaceous, broken to rubble core, slightly silty, signs of slickensides											
		40.56	41.04	.48	Lost	core											
3		41.04	41.5	.46	Shale	dark grey, carbonaceous, plant debris, slickensided, broken											
3		41.5	41.75	.25	Coal	powdered											
3		41.75	41.78	.03	SLTST	dark grey, carbonaceous		Coal	Sample 8								
		41.78	42.29	.51	Lost	coal				3.38	1.99	5.96	21.97	72.07	0.0		
3		42.29	42.4	.11	Coal	soft, powdery, dull											
3		42.4	42.5	.1	SLTST	with intermixed, very fine grain sandstone, trace plant material											
3		42.5	43.6	1.1	SLTST	medium grey, interbedded with light grey, very fine grain sandstone, 3 joints, some rubble, very calcareous, convolute bedding	19°										R3
		43.6	44.04	.44	Lost	core											
4		44.04	45.04	1.0	SLTST	as above, 2 joints, broken core, signs of ground core, some very fine grain sandstone											
4		45.04	46.0	.96	SS-SLTST	light grey, very fine grain sandstone, siltstone is medium grey, convolute bedding, 1 calcite-filled joint, very calcareous											R3
4		46.0	47.5	1.5	SLTST-SS	as above, 2 joints											
4		47.5	47.77	.27	SLTST	dark grey, carbonaceous, slightly sandy in part, very fine grain, trace plant debris											
5		47.77	48.99	1.22	SLTST-SS	sandstone is light grey, very fine grain, siltstone is dark grey, calcareous, some cross-bedding at 22-25°, 4 joints, numerous thin calcite fractures	25°										R3

ALL LINEAR UNITS IN METRES

1-08/0R5 - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

-RQD - ROCK QUALITY DESIGNATION (1%)

FF - FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.F. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
5	48.99	49.41	.42	SLST-SS	as above											
5	49.41	49.76	.35	SLST	dark grey, one sandstone bed in centre											
5	49.76	50.50	.74	SLST-SS	as above, 70% sandstone, 2 fractures, rubbly at base, calcareous	21°										
5	50.50	51.27	.77	Shale	silty, dark grey with interbedded medium grey siltstone, bedding poorly defined	19°										R2
5	51.27	52.00	.73	SS	light grey, fine to very fine grain, some convolute siltstone beds, trace plant debris											R1
6	52.00	52.7	.70	SLST-SS	as above, increasingly silty, one joint											R3
6	52.7	53.2	.5	SLTST	dark grey, slightly carbonaceous, a few wispy very fine grain sandstone beds											R2
6	53.2	53.75	.55	Coal	fissile, platy, bright, polished, some pyrite sheen on polished surface											S5
6	53.75	53.99	.24	Shale	very dark grey, carbonaceous, abundant coaly material on fractures, surfaces are smooth and polished (4), non-calcareous											R2
6	53.99	54.07	.08	Coal	shaley, hard, fissile, platy, polished, some iron-staining											S3
6	54.07	54.47	.4	SII-Coal	interbedded, coal is hard, fissile, platy and polished, dull with bright, shale is R1, coaly, black, fissile											S4
6	54.47	54.91	.44	Coal	shaley, very dirty, dull, hard, fissile, numerous curved polished surface, some calcite lining surfaces											R1
6	54.91	55.41	.5	Lost	core - shale											
6	55.41	55.99	.58	Shale	black, carbonaceous, abundant coal splits, coal is hard, bright and polished				Sample 9							R1-R2
		55.99	56.91	.92	Lost	core - shale and coal				2.91	1.30	13.01	19.17	67.82	0.0	
6	56.91	56.99	.08	Coal	ground, fragmented, powdery, bright, polished											S1
7	56.99	57.5	.51	Shale	black, carbonaceous, very coaly, 3 polished fracture faces lined with coal, non-calcareous											S2
7	57.5	57.77	.27	Shale	black, carbonaceous, few coaly wisps, few polished joints											R2

ALL LINEAR UNITS IN METRES

* RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODC. JLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
7		57.77	58.27	.5	Shale	carbonaceous with abundant black plant fragments, pyrite sheen on joints, silty, light and dark bands	32°									R3
7		58.27	58.97	.7	SLST-SS	sandstone is very fine grain, carbonaceous, sandstone is light grey, small-scale crossbeds siltstone is medium to dark grey, finely laminated, 2 joints, clean and smooth, one fracture that is calcite-lined and polished	22°									R3-R4
7		58.97	59.19	.22	SLTST	gouge - powdered, compact, fragmented										
7		59.19	59.76	.57	SLST-SS	as previously described, moderately calcareous	23°									R3
7		59.76	60.39	.63	SLST-SS	as above, calcareous	25°									
7		60.39	60.85	.46	SLST-SI	very finely laminated, medium to dark grey, very slightly calcareous, 2 joints lined with pyritic sheen, rubbly near base	23°									R2
7		60.85	61.15	.3	Shale	black, carbonaceous, coaly towards base, rubble										R2
8		61.15	61.35	.2	Shale	as above										
8		61.35	61.45	.1	Coal	gouge - semi-compact, powdery and broken, polished										
8		61.45	61.64	.19	Shale	as previously described										
8		61.64	62.07	.43	SLST-SS	interbedded, moderately calcareous, wavy bedding, increasingly silty towards base, medium to dark grey, 3 calcite stringers										R2
8		62.07	62.41	.34	Shale	dark, coaly, rubbly with polished fractures										R2
8		62.41	62.82	.41	Shale	as above										
8		62.82	63.41	.59	SLST-SS	as previously described, 2 coal-lined fractures, calcareous, finer grained towards base, calcite veinlets	26°									
8		63.41	63.51	.1	Shale	coaly shale, polished and powdery										
8		63.51	63.73	.22	Shale	dark grey to black, carbonaceous to coaly, very coaly towards base										R2

ALL LINEAR UNITS IN METRES

1:R&/OR S - GOLDR ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.	
										g.r.b.	residual	d.b.	d.b.	d.b.		
8	63.73	63.88	.15	Shale	as above, some calcite veinlets, one fracture, lined with pyrite sheen											R3
8	63.77	64.27	.39	Shale	very coaly, sheared, polished											
8	64.27	65.12	.85	Coal	shaley, highly fractured, polished, dull with bright bands	Coal		Sample 10		5.06	3.04	4.70	18.96	76.34	0.0	S2
9	65.12	65.81	.69	Lost	core											
9	65.81	66.97	1.16	SLTST	dark grey - calcareous coal plant fragments iron-stained joints and fractures. Broken near base		25°									R3
9	66.97	67.02	.05	Coal	coal dull with bright powdery											S2
	67.02	67.32	.3	Lost	core											
	67.32	67.49	.17	Shale	dark grey to black to carbonaceous coaly plant fragments, rubble											R2
9	67.49	67.68	.19	SLTST	as previously described - slightly more shaley - very carbonaceous, rubble at base calcareous											R3
9	67.68	67.74	.06	Shale	black - carbonaceous rubble											
9	67.74	68.26	.52	SLTST	same as above, rubbly near base		29°									R3
9	68.26	68.56	.30	Lost	core											
9	68.56	70.01	1.45	SS-SLST	interbedded sandstone very fine grain, light grey, R4, siltstone, medium grey, semi-stick, iron-staining of joint planes sub-parallel to bedding (5), calcite-filled fractures		22°									R3
10	70.01	71.0	.9	SS-SLST	as above		18°									R4
	71.0	71.45	.45	Shale	black, very broken, rubbly, carbonaceous, 1 cm sandstone band, carbon-polished fractures, calcite on joint surfaces											
	71.45	72.00	.55	Shale	black, carbonaceous coaly blebs, sulphur on some surfaces, Silty, non-calcareous, no bedding broken											R2
	72.00	72.50	.5	Lost	core											
10	72.50	72.84	.34	Shale	rubble											

ALL LINEAR UNITS IN METRES

1:RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	MOIST % residual	ASH % d.b.	V.M. % d.b.	FC. % d.b.	F.S.I.		C.V.
		72.84	73.54	.70	Lost	Core											
10		73.54	74.06	.52	SLTST	dark grey, polished coaly, joint surfaces calcite filled veinlets, small bright, powdery, coal hard at top; 4 calcite coated fractures											R2-R3
10		74.06	74.17	.11	SLTST	rubble, as above											
11		74.17	74.53	.36	SLTST	dark grey, coaly plant fragments, shaley in centre, broken at base, bright coal stringers, iron-stained fracture planes, calcareous											R4
11		74.53	74.93	.4	Lost	core											
11		74.93	75.21	.28	SLTST	as above											
11		75.21	75.44	.23	Shale	dark grey to black, very coaly, iron-stained, broken and rubbly, calcareous											R2
11		75.44	76.12	.68	SLTST	more shaley at top, calcareous, carbonaceous polished joint surfaces, iron-staining, coaly plant fragments along bedding stick, sandy at base	5°										R4
11		76.12	76.42	.3	Lost	core											
11		76.42	77.85	1.43	SLTST-SS	interbedded siltstone, medium-dark grey, sandstone - light grey, calcite on joint planes, bedding steepening, stick core - calcareous small 2 cm rubble band at base	22°										R4
11		77.85	78.24	.39	SLTST	shaley, dark-grey, iron-staining on joints highly calcareous, coaly stringers											
12		78.24	78.32	.08	SLTST	dark grey, rubble, calcareous											R3
12		78.32	78.41	.09	SLTST	rubble as above											R3
12		78.41	78.79	.38	SLTST	dark grey, calcareous, 2 iron-stained joints											R4
12		78.79	79.88	.09	SLT-SH	dark grey, calcareous, iron-stains on surface											R3
12		79.88	80.03	.15	Shale	black, muddy, calcareous											S2
12		80.03	80.56	.53	Shale	dark grey - black, carbonaceous with coaly plant fragments, slightly calcareous, iron-staining, calcite lined fractures											R1

ALL LINEAR UNITS IN METRES

†:R8/OR 5 - GOLDR ASSOCIATES HARDNESS CODE

-RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.
CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. R.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.			
12		80.56	80.73	.17	Shale	silty, dark grey, calcite lining fracture surfaces, iron-stained joint surfaces												
12		80.73	82.03	1.30	SLTST	dark grey to black, shaley, carbonaceous plant fragments, iron-stained joints, moderately calcareous											R1	
12 + 13		82.03	83.06	1.03	SLTST	a/a, shaley at top becoming more silty towards base, calcite filled fractures											R3-R4	
13		83.06	84.51	1.45	SS	very fine grain, medium grey, calcareous, calcite filled, iron-stained joints, semi-stick, broken at base												
13		84.51	85.20	.69	SS	a/a, broken at base, calcareous												
13		85.20	85.29	.09	SS	rubble, as above												
13		85.29	85.71	.42	SLT-SS	interbedded silt-sandstone, shaley at top, moderately calcareous, sandstone - very fine grain, light grey. Siltstone - medium grey, carbonaceous, polished joint surfaces	15°										R2-R3	
13		85.71	85.84	.13	SS-SLST	as above												
13		85.84	85.89	.05	Shale	black, very coaly, polished coaly fracture faces, calcareous											R2	
14		85.89	86.03	.14	Coal	bright, powdery, soft											S2	
14		86.03	86.06	.03	Coal	dull with bright, blocky				Sample #1	0.37 m							
14		86.06	86.16	.1	Coal	bright with dull, slickensided (polished), hard, blocky						11.53	1.70	6.36	19.86	73.78	1.0	S5
14		86.16	86.23	.07	Coal	dull with bright, small, blocky												S4
14		86.23	86.41	.18	Coal	bright with dull, blocky to powdery												S3
		86.41	86.52	.11	Lost	coal												
14		86.52	86.6	.08	Coal	dull with bright, very soft, compact, powdery												S1
14		86.6	86.72	.12	Coal	bright with dull, polished surface, moderately hard, blocky to powdery				Sample #2								S4
14		86.72	86.81	.09	Coal	bright, hard, polished surfaces, blocky, crisp						6.04	1.59	3.14	21.63	75.73	2.5	S4
		86.81	87.85	1.04	Lost	coal core												

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGETOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.		C.V.
										a.r.b.	residual	d.b.	d.b.	d.b.			
14		87.85	87.96	.11	Coal	bright with dull, soft, blocky to powdery											S2
14		87.96	88.03	.07	Coal	dull, with some bright, soft, powdery											
14		88.03	88.55	.52	Coal	bright, with abundant well-polished surfaces, hard											S4
		88.55	88.7	.15	Lost	coal											
14		88.7	89.02	.32	Coal	bright with dull, abundant polished surfaces, hard, blocky, some powdery wisps											S5
14		89.02	89.09	.07	Coal	bright with dull, polished surfaces											S4
14		89.09	89.23	.14	Coal	bright, soft, polished surfaces, small blocky to powdery											S3
		89.23	89.6	.37	Lost	coal - shaley											
14		89.6	89.76	.16	Shale	dark grey to black, carbonaceous, some plant fragments, numerous bright coal wisps, rubbly, calcareous (slightly)											R3
		89.76	90.0	.24	Lost	core											
14		90.0	90.23	.23	SLTST	medium grey, calcareous, laminated, interbedded with very fine grain sandstone, 1 joints, iron-staining on joint surfaces, one calcite lined joint, badly broken											R3
14		90.23	91.23	1.0	SLST-SS	interbedded sandstone is fine to very fine grain, light grey, siltstone is medium to dark grey, convolute bedding, sandstone contain siltstone clasts and displays small scale cross-bedding, calcareous, broken	24°										R3
14		91.23	91.33	.1	SLTST	extremely rubbly, possible brecciated, medium grey											
		91.33	91.7	.37	Lost	core											
14 + 15		91.7	92.27	.57	SS-SLST	as previously described, contains large calcite stringers, iron-staining on joint surfaces, some polished surfaces, broken at rap, semi-stick, 2 joint planes	16°										R3
15		92.27	92.52	.25	Shale	black, carbonaceous, laminated at base, carbonaceous plant fragments on bedding planes, 3 joints											R3

ALL LINEAR UNITS IN METRES

1-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

-RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	RESIDUAL	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.		C.V.
15	92.52	93.96	1.44	Shale	dark grey to black, very carbonaceous, abundant plant fragments, calcareous, iron-staining on 4 joint planes, semi-stick, rubbly at base												R3
	93.96	94.11	.15	Loos	core												
15	94.11	94.58	.47	Shale	as above, calcite-filled fractures, semi-stick, contains small sandstone interbeds												
15	94.58	94.84	.26	SS-SLST	interbedded, sandstone is fine to very fine grain, light grey, siltstone is dark grey, convoluted bedding, 0.2 to 2.0 cm bedding thickness, highly polished and slickensided joint planes (calcite-lined), calcareous												
15	94.84	95.1	.26	Shale	black, carbonaceous, calcareous, iron-stained joint planes, coaly on joint surfaces		23°										R3
15	95.1	95.95	.85	SS-SLST-SH	sandstone is fine grain and light grey, siltstone and shale is medium to light grey, semi-stick, coaly bands on bedding planes, calcareous, calcite stringer and 2 calcite-lined joint planes, one iron-stained joint planes		22°										R3
16	95.95	96.51	.56	Shale	black, carbonaceous, polished joint planes, slightly calcareous												R3
16	96.51	97.79	1.28	Shale	as above, semi-stick, non-calcareous												R3
16	97.79	98.79	1.0	Shale	as above, coaly wisps, semi-stick												R3
16	98.79	98.92	.13	Shale	gouge - carbonaceous												
16	98.92	99.2	.28	Shale	as above, with bright coal lenses which become more frequent at base												R3
16	99.2	99.31	.11	Shale	carbonaceous, extremely rubbly, possibly gouge zone												
	99.31	99.7	.39	Loos	core												
16	99.7	99.79	.09	Shale	carbonaceous, becoming very coaly												
16	99.79	99.86	.07	Coal	mostly bright, shaley												S5
16	99.86	99.91	.05	Coal	bright, crisp and black												S4
16	99.91	99.95	.04	Coal	mostly bright, shaley												S5
								Coal	Sample #11								
									2.14	1.05	9.33	19.49	71.18	6.5			

ALL LINEAR UNITS IN METRES

1-#4/OR 5 - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LO. POLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		READING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
16		99.95	99.98	.03	Coal	bright, some polished surfaces, blocky to powdery		Coal	Sample #11								S4
16		99.98	100.04	.06	Coal	bright, hard, polished											S5
16		100.04	100.11	.07	Coal	bright, powdery, compact											S2
16		100.11	100.13	.02	Coal	shaley, polished											R2
16		100.13	100.20	.07	Shale	dark brown, abundant coaly wisps of bright coal, polished											R3
16		100.20	100.30	.10	Shale	dark brown-grey to black, plant fragments, polished surfaces, coaly wisps, 3 cm wide coaly bands at 100.41											R3
17		100.50	100.83	.33	Shale	black, slightly silty, rubbly at base, 2 clean joints											R2
		100.83	101.20	.37	Lost	shale											
17		101.20	101.27	.07	Shale	rubble, as above											
17		101.27	101.88	.61	Shale	semi-stick as above, becoming silty at base, 2 iron-stained joint surfaces											R2
17		101.88	102.64	.76	SLTST	dark grey, coaly, polished joint surfaces, 3 iron-stained joints, slightly calcareous, broken at base, small coal band 5 cm thick in centre of unit											R3
17		102.64	104.20	1.56	SLST-SS	interbedded siltstone-sandstone, convolute bedding, siltstone is medium grey, sandstone is very fine grain, light grey, calcite-filled fractures, calcite coating 1 joint plane, 3 other iron-stained joints		33°									R4
17 + 18		104.20	104.84	.64	Shale	black, coaly, broken, iron-stained joints (3) calcite-filled fractures, becomes silty at base, calcareous											R2
		104.84	105.36	.52	Lost	core											
18		105.36	105.80	.44	Shale	silty, black, calcareous, silty lenses, coaly bands, carbonaceous polished joint surfaces, calcite-filled fractures, iron-stained joint plane											R2

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

* RD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPT. AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ?
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	VM. % d.b.	FC. % d.b.	F.S.I.	C.V.	
18		105.80	106.80	1.0	SS-SLST	interbedded sandstone/siltstone. Sandstone is light grey, very fine grain, siltstone is medium grey, convolute bedding, calcareous, iron-stained, calcite-lined joints.	27°									R4
18		106.80	107.03	.23	SS	fine grain, salt & pepper, carbonaceous plant fragments, numerous iron-stained fracture surface, calcite-filled fractures as well, small scale cross-bedding, very broken at base.										R4
		107.03	107.30	.27	Lost	sandstone										
18		107.30	108.22	.92	SS	as above, semi-stick	11°									R4
18		108.22	108.33	.11	SLTST	shaley, polished carbonaceous fractures										R3
		108.33	108.42	.09	Lost	siltstone										
18		108.42	108.80	.38	SS	as previously described, iron-stained joint surfaces, light & dark laminations										R4
19		108.80	109.33	.53	SS	as above										R4
19		109.33	110.00	.67	SS	medium grey, light and dark laminations, polished carbonaceous joint surfaces, calcite-filled joints and fractures, calcareous, broken in centre of unit, becomes fine grain at base	25°									R4
19		110.00	110.30	.30	Lost	sandstone										
19		110.30	111.68	1.38	SS	fine to medium grain, light to medium grey, light & dark laminations, 15 cm thick silt band in centre, iron-stained calcite-lined joints, calcareous, carbonaceous polished joint planes, calcite-filled fractures, becomes coarse grain at base.	27°									R4
19		111.68	111.90	.22	Lost	core										
19		111.90	112.80	.90	SS-SLST	interbedded sandstone is very fine grain, light grey, siltstone is medium grey, convolute bedding - 2 cm calcite band at top, polished carbonaceous fracture surfaces, iron-stained joint planes, calcareous, broken at top, bright coaly lenses at top.										R3
20		112.80	112.85	.05	SS-SLST	as above										

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
20		112.85	113.17	.32	SS	fine to medium grain, salt & pepper, calcareous some flaser bedding, occasional coaly wisps, contains 4 cm thick siltstone bed in centre of unit										R4
20		113.17	113.4	.23	SLST-SS	siltstone is medium to dark grey, sandstone is light grey, fine to very fine grain, beds 0.2 to 6 cm thick, semi-stick, broken at base, calcareous	21°									R4
20		113.4	114.10	.7	SLST-SS	as above, sandstone displays small-scale cross-bedding, siltstone beds predominate down section, calcite-lined joint plane	25°									R4
20		114.10	114.9	.80	SLTST	with occasional sandstone interbeds, siltstone is dark grey, sandstone is very fine grain, medium grey, cross-bedding, calcareous, one iron-stained joint set, one joint set sub-parallel to bedding, stick core	14°									R3
20		114.9	115.23	.33	SLTST	as above, calcite-lining on joint planes										R3
20		115.23	115.85	.62	SS	fine grain, with occasional siltstone clasts, salt and pepper, light grey, calcite-filled fractures, 0.5 cm thick calcite band in centre, calcite-lined joint, some iron-staining, 2 joints, calcareous, coaly										R3
20		115.85	116.23	.38	SLTST	dark grey with occasional fine grain sandstone interbeds that are 0.1 to 1.3 cm thick, iron-staining on joints										R4
21		116.23	117.79	.56	SLTST	as above, more shaley than previous unit, semi-stick	25°									
21		117.79	119.03	1.24	SS-SLST	siltstone is dark grey, sandstone is fine to very fine grain, light to medium grey, flaser bedding in sandstone, dark red iron-staining on two joint sets, slightly calcareous, siltstone predominates at base of section	20°									R3
21		119.03	120.53	1.5	Shale	dark grey to black, carbonaceous, rusty iron-staining on joint planes, very slightly calcareous, one joint set, semi-stick to broken core										R2
22		120.53	120.95	.42	Shale	black, sheared carbonaceous band in centre, 0.5 cm sandstone band in centre, carbonaceous polished joint surface	24°									R2
		120.95	121.70	.75	Lost	core - coal										

ALL LINEAR UNITS IN METRES

† R&OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		WEDGING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED {INCLUDE COAL RECOVERY FOR EACH SEAM}				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
22		121.70	122.10	.40	Shale	carbonaceous, semi-stick and coaly	24"									S2
22		122.10	122.21	.11	Coal	pyrite - blocky to flakey										S1
		122.21	122.99	.78	Shale?	carbonaceous, black-black pyrite common, very coaly, bright			Sample # LP-D304-3	Shale Split						R1
											2.63	0.85	18.62	15.42	65.96	1.0
27		122.99	123.12	.13	Coal	dull, polished, flakey, sheared, some bright bands, 0.15, and pyrite										R2 S5
22		123.12	123.43	.31	Coal	shaley, coal dull to bright, polished in thin bands			Sample # LP-D304-4							R1 S3
											11.24	0.97	12.69	17.42	69.84	3.5
22		123.43	123.66	.23	Coal	bright with dull, flakey, blocky, pyrite common with polished coal										S5
		123.66	124.70	1.04	Coal	as above, occasional 3 - 4 cm shale splits										
22		124.70	124.79	.09	Shale	black, carbonaceous with coaly stringers										R1
22		124.79	125.14	.35	Coal	mostly bright, very hard, 2 cm shaley split in centre										R3
22		125.14	126.21	1.07	Coal	bright hard platy, clean, some slickensides along bedding										R1
23		126.21	126.32	.11	Coal	shaley and slickensides, massive										R2
23		126.32	126.68	.36	Coal	bright (R1 to S5)										R1
23		126.68	126.88	.2	Coal	bright with dull										S2
23		126.88	126.93	.05	Coal	shaley - massive										R2
23		126.93	127.13	.2	Coal	bright, hard coal, compact										S4
23		127.13	127.17	.04	Coal	dull, shaley, massive, compact										R1
23		127.17	127.31	.14	Coal	bright, hard coal, compact										S5
23		127.31	127.35	.04	Coal	dull shale, fissile, compact										
23		127.35	127.52	.17	Coal	dull and bright, soft, compact										S2
23		127.52	127.56	.04	Coal	dull, shaley coal fissile, compact										R2
23		127.56	127.97	.41	Coal	dull and bright coal, soft, powdery to flakey										S1
23		127.97	128.03	.06	Coal	dirty, dull bright, soft										S1
23		128.03	128.12	.09	Coal	bright, flakey, soft										S1

ALL LINEAR UNITS IN METRES

1-R&/OR S - GOLDR ASSOCIATES HARDNESS CODE
 -RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. Residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
23	128.12	128.19	.07	Shale	fragile, dark grey to black, coaly evidence of grinding, blocky											
	128.19	129.17	.98	Shale	massive, R1, carbonaceous plant fragments, 2 fractures, 1 lined with calcite											R1
	129.17	129.33	.16	Shale	as above, ground core											
	129.33	129.43	.10	Shale	coaly, coal is 1 cm bands, blocky, many very thin veinlets of coal along bedding, stick core											R1
	129.43	129.52	.09	SS	fine to medium grain, carbonaceous with calcite stringers, medium grey on fresh surface weathers grey, very hard and very calcareous											R5
	129.52	129.82	.3	Lost	core											
	129.82	130.06	.24	Shale	as above, ground core semi-stick											
	130.06	130.13	.07	Shale	coaly - coal bands sub-parallel to bedding 1 to 2 mm thick											
23	130.13	131.23	1.10	Shale	dark grey, carbonaceous, rubbly - abundant calcite veinlets - 3 clean joints - breaks easily along bedding, light and dark grey bands		23°									R2
24	131.23	131.31	.08	SS	very fine grain, brownish-grey, very hard, finely laminated, 1 joint - coal lined rubble, could be coming from above, calcareous											R4
24	131.31	131.91	.60	Shale	silty, dark grey, carbonaceous - finely laminated in places, very broken and rubbly, non-calcareous, coaly along bedding near base		31°									R1-R2
24	131.91	132.36	.45	Shale	becomes less coaly and lighter grey, some polish surfaces - 4 clean fractures bedding indistinct											R2-R3
24	132.36	132.88	.52	Shale	dark grey carbonaceous - with coal and plant fragments, some pyrite - blocky, clean on joints, coaly along bedding		22°									R2
24	132.88	133.18	.30	Shale	shale as above, rubbly with abundant polished surfaces											R2
25	133.18	133.48	.30	Shale	silty - brecciated - with abundant calcite veins, highly polished calcareous, produced green stain with HCL. Electric log shows fault zone											

ALL LINEAR UNITS IN METRES

1-R&/OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

RQD - ROCK QUALITY DESIGNATION [%]

FF - FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
25		133.48	133.78	.30	Lost	core										
15		133.78	134.66	.88	SLTST	medium gray - hard blocky - some shaley dark gray bands, non-calcareous with clean irregular fractures, semi-stick	18°									R4
25		134.66	134.96	.30	SLTST	same as above										
		134.96	135.24	.28	SLTST-SS	interbedded - finely laminated light & dark gray, stick core: 1 calcite-lined fracture	26°									R4
25		135.24	136.17	.93	SLTST	as previously described; bedding indistinct, very rubbly at base; abundant pyrite										R3
		136.17	141.4	5.23	Lost	core - tricore hole - no core										
		141.4	141.87	.47	SLTST	siltstone/sandstone interbedded, slightly calcareous, rubble to semi-stick, coal on bedding planes, finely laminated; sandstone very fine grain, medium gray	27°									R2
25		141.87	142.87	1.0	SS	with some rip-up clasts of mudstone which is carbonaceous, sandstone is fine to medium grain - becomes coarse at base, also grading from finely laminated to massive at base, Coaly at top, mildly calcareous	24°									R3
26		142.87	143.77	.90	SS	as above, conglomerates at base, highly cross-bedded, poorly sorted	23°									
26		143.77	145.07	1.3	SS	as above - 4 coal-lined joints, polished, bedding steepens	28°									

ALL LINEAR UNITS IN METRES

1-R&/OR-S - GOLDR ASSOCIATES HARDNESS CODE
 -RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %		V.M. %			F.C. %	
										w.r.b.	residual	d.b.	d.b.	d.b.	F.S.I.	C.V.		
26		145.07	145.18	.11	SLST-SS	interbedded sandstone, fine grain, medium gray siltstone - dark gray, carbonaceous, finely laminated, fissile, platy, non-calcareous												R2
26		145.18	145.25	.07	SLST-SS	gouge - compact, fragmented to powdery when broken, calcareous, ground												R1
26		145.25	145.30	.05	SS	mildly calcareous, fine grain, light to medium gray, rubbly, some cross-bedding.	29°											R3
26		145.30	145.62	.32	SS	as above with coaly material along bedding plane - some coaly blebs in matrix	27°											R3
27		145.62	146.15	.53	SS	very coarse grain to conglomerates, coaly along bedding with coaly blend in matrix	24°											R3
27		146.15	146.60	.45	SS	same as above - semi-stick, non-calcareous	21°											R3
27		146.60	147.00	.40	Lost	core - as above												
27		147.00	147.50	.50	SS	as above - rubble, lightly fractured with polished coaly surfaces												R2
27		147.50	148.30	.80	SS	as above - becoming finer grain and less coaly toward base												
27		148.30	148.50	.20	Lost	core - as above												
27		148.50	148.60	.1	SS	as above, grading to siltstone below												
27		148.60	148.83	.23	SLST-SH	medium gray, carbonaceous, blocky with coaly lenses sub-parallel to bedding - coal is hard and bright, non-calcareous, no bedding evident of bioturbation.												R3
27		148.83	149.54	.71	SLST-SS	mildly calcareous - sandstone - very fine grain, medium gray siltstone, dark gray carbonaceous, finely laminated cross-bedded - ripple-bedded, 2 clear fractures, semi-stick some coarse conglomerate bands												
28		149.54	150.93	1.43	SS	calcareous with siltstone lenses, medium-grain with fine and coarse layers, medium-gray semi-stick, 8 clean joints, becomes finely laminated and fissile toward base, some ripple beds and evidence of soft sediment deformation, 2 calcite stringers												R3
28		150.93	151.13	.2	Shale	dark-gray carbonaceous, rubbly - broken.												R2

ALL LINEAR UNITS IN METRES

1 = R & / OR S — GOLDER ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS 1	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %		F.S.I.
										a.r.b.	residual	d.b.	d.b.	d.b.		
28	151.13	151.73	.6	SS	medium-coarse grain, salt and pepper, coaly bands along bedding, very rubbly with light gray matrix, very slightly calcareous, undulose calcite-lined fractures											R2
28	151.73	152.33	.6	Lost	core											
28	152.33	153.77	.44	SS	as above, coarse grain, non-calcareous, tends to be massive, abundant coaly partings with some curved polished surfaces, semi-stick											R3
28	153.77	154.23	.46	SS	as above, grades to fine to medium grain at base, rubbly	28°										R1
28	154.23	155.01	.78	SS	as above, 3 coal-lined joints, broken, blocky massive											R3
29	155.01	155.73	.72	SS	as above with .15 shale split near top, 3 calcite stringers	23°										R3
29	155.73	156.53	.80	SS	as above, stick core, 6 calcite stringers, slightly calcareous, 1 joint; clean; sub-parallel to core axis. Poorly sorted at base	32°										R3
29	156.53	156.61	.08	SLTST	interbedded carbonaceous siltstone and very fine grain sandstone, coaly, very dark gray with coaly lenses, no apparent bedding											R4
	156.61	156.75	.14	SS	rubble, medium coarse grain, badly broken, salt and pepper, R3, medium gray with coaly wisps											
29	156.75	156.94	.19	SS	conglomerate, coarse grain, salt and pepper, medium grain, 1 calcite stringer, abundant carbonaceous fragments, coaly fracture surface at base, polished, massive											R4
29	156.94	157.31	.37	Breccia	with sandstone and siltstone and shale, hard, compact, massive - some coaly lenses polished coal on two fractures											R2
29	157.31	157.51	.2	SS	medium grain, salt and pepper, medium gray, bedding is poor, 3 coaly polished curved fractures, sub-parallel to bedding	27°										R3
	157.51	157.91	.40	Shale	dark gray, carbonaceous - silty with abundant plant fragments, siltier at base											R3
24	157.91	158.40	.49	SLTST-SS	fine grain sandstone, interbedded with dark gray siltstone, calcareous, 3 clean fractures, a calcite, a medium joint, finely laminated	23°										R3

ALL LINEAR UNITS IN METRES

1-RB/OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
30	158.40	159.62	1.22	SS	fine grain, weakly banded and laminated, 2 fractures with calcite - stick core, moderately calcareous	13°										R3
30	159.62	159.97	.35	SS	carbonaceous and coaly seams up to 1 cm. Some pyrite, thin white calcite veinlets with fractures filled with calcite, rubbly, coal is bright, granular and S2											R4
30	159.97	161.50	1.53	SS	finely laminated, stick core, weathers gray zones and stringers of white calcite veinlets - weakly calcareous, slightly carbonaceous, with black plant fragments, cross-bedding and soft sediment deformation, joint set calcite filled, approx. 30° from core axis, fine grain dark gray											R4
30	161.50	161.82	.32	SS	as above											
31	162.4	161.82	163.06	1.24	SLTST	carbonaceous, abrupt lower contact weathers dark gray on fresh surface, dark gray - black, weakly calcareous, lenses of bands of coals and pyrite with coal, semi-stick core, coal bands up to 1 cm thick, some zones very coaly										R3
31	163.06	164.62	1.56	SLTST	as above, carbonaceous - not as coaly											
	164.62	165.20	.58	SS	fractures, sub-parallel to bedding filled with calcite, moderately calcareous, dark gray, fine grain, weakly laminated, stick-core	16°										R3
31	165.29	166.10	.90	SLTST	weakly calcareous, dark gray, weather gray, weakly carbonaceous, stick core, massive, wispy white calcite stringers											R3
31	166.10	166.15	.05	SS	fine grain, gray weathers light gray, irregular banding, strongly calcareous											R4
32	166.15	167.78	1.63	SS	fine grain, medium-dark gray, banded and finely laminated showing soft sediment deformation, stick core, strongly calcareous - through cross-bedding on small scale - thin white calcite veinlets	21°										R4
32	167.78	168.60	.82	SS	interbedded sandstone-siltstone, dark gray to black, stick-core, weakly calcareous, sandstone is medium gray, weakly laminated	30°										R3
32	168.60	169.30	.70	SLTST	black, carbonaceous, plant fragments, massive, moderately calcareous, semi-stick core											R3

ALL LINEAR UNITS IN METRES

† R&/OR S - GOLDR ASSOCIATES HARDNESS CODE

• RD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM. %	FC %		F.S.I.
										a.r.b.	residual	d.b.	d.b.	d.b.		
32		169.30	170.76	1.46	SLTST	same as above but more carbonaceous with small discontinuous coal lenses										
33		170.76	172.2	1.44	Shale	silty, semi-stick, very dark gray, carbonaceous with plant fragments, very faint bedding, very weakly calcareous, 3 calcite micro-veinlets, very thin calcite stringers (.1 m from bottom), occasional pyrite blebs	27°									R3
33		172.2	172.95	.75	Shale	as above, 3 joints sub-parallel to core axis, becoming more silty, gypsum crystals on joint surfaces, rock is non-calcareous, bedding is indistinct										R3
33		172.95	173.27	.32	Shale	as above, very rubbly, some ground core, polished carbonaceous surfaces										R3
33		173.27	173.81	.54	Shale	as before, non-calcareous, grades to siltstone at base, pyrite more abundant										R3-R4
34		173.81	175.29	1.48	SLTST	some shaley bands, siltstone is medium gray, shaley bands dark gray, abundant plant fragments, pyrite on fracture surfaces, 5 joints (clean or pyrite), 2 fractures with polished carbonaceous surfaces, 3 calcite stringers sub-parallel to bedding	27°									R3-R4
34		175.29	176.02	.73	SLST	as above, less shaley near base, massive										R3-R4
34		176.02	176.51	.49	SLST-SS	interbedded sandstone is light gray, fine grain, siltstone is medium-dark gray, finely laminated with wavy bedding, four joint surfaces, minor pyrite and gypsum crystals, sandstone is weakly calcareous	19°									R4
34		176.51	176.81	.30	SLTST	as at 173.81										
34		176.81	177.46	.65	SLTST	as at 173.81, becoming less carbonaceous, 3 joints, minor pyrite and gypsum, abundant lower contact, massive										R3
		177.46	177.74	.28	SS	very fine grain, light gray, one 2.5 cm siltstone split at centre, finely laminated, weakly calcareous, 2 calcite stringers, 2 joints rough and clean, 1 joint smooth and calcite-lined.										R3
34		177.74	178.28	.54	SLTST	as at 173.81										

ALL LINEAR UNITS IN METRES

1-R&/ORS — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

-RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LADGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I	
										a.v.b.	residual	d.b.	d.b.	d.b.		
34		178.28	178.33	.05	SST	highly ground sandstone as described at 177.46, compact, sandy texture when broken, gouge										
34		178.33	178.45	.12	SLTST	as above										
34		178.45	179.07	.62	SLST-SS	interbedded, siltstone is dark gray, sandstone is medium gray, fine grain, core is blocky, 4 clean joints, non-calcareous, calcite stringer near base	16°									R3
		179.07	179.46	.39	SLTST	dark gray, carbonaceous, broken and rubbly										R3
35		179.46	179.80	.34	Loaf	core										
35		179.80	181.40	1.60	SLTST	as above, one very fine grain sandstone band at .23 from top, broken to rubbly core, minor pyrite on joint surfaces, 2 calcite/carbonaceous line fractures, non-calcareous, shaley at base	23°									R3
35		181.40	181.68	.28	SLST	as above, some coaly material on joints, minor pyrite										
35/36		181.68	182.84	1.16	SS-SLST	interbedded, with occasional shale bands, semi-stick at top to rubbly at base, 2 fractures, coaly and polished, 1 calcite fracture, 6 joints with minor calcite and pyrite, sandstone is moderately calcareous, light to medium gray, fine grain, siltstone is finely laminated, dark gray										R3-R4
36		182.84	183.30	.46	Shale	medium-dark gray, carbonaceous, conchoidal fracture (clean) very rubbly										
36		183.30	184.0	.70	Shale	as above, blocky to broken, very rubbly at base, 2 smooth, coal-lined joints										R2
36		184.0	184.40	.40	Loaf	core										
36		184.40	184.43	.03	Shale	as above, very coaly										R2
36		184.43	184.71	.28	Shale	friable, highly fractured, compact core forms, small fragments, dirty and dull, coaly										S2
36		184.71	185.79	1.08	Coal	compact, powdery when broken, dull with bright, .05 m shale split near base, polished surfaces and angular fragments, thin bright bands			Sample No. LP-D304-5	184.7 to 185.5						S3
										11.23	1.05	13.47	16.56	69.97	1.5	
36		185.79	185.99	.20	Coal	shaley and dirty, compact, powdery when disturbed										R2

ALL LINEAR UNITS IN METRES

† R2/R3/R5 — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

* RD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

COKE & COAL CORE DESCRIPTION

PROJECT	OGEPOL
AREA	S.E. U.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	MOIST %		ANALYTICAL DATA					REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				o.r.b.	residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
36		185.99	186.11	.12	Coal	dull with bright, powdery with angular fragments											S2
36		186.11	186.26	.15	Shale	black and carbonaceous and coaly, ground and polished on fracture surfaces											R1
36		186.26	186.59	.33	Coal	compact, powdery when broken, dull with polished surfaces											
37		186.59	186.66	.07	Shale	very coaly, black, one polished and curved fracture											
37		186.66	186.99	.33	Coal	Compact, bright with dull, dull with bright at base				Sample LP-D304-6		6.04	1.01	11.84	17.15	71.0	1.0
37		186.99	187.22	.23	Coal	dirty, platey, fissile, powdery at base											R3
37		187.22	187.52	.30	Loos	coal											
37		187.52	187.73	.21	Shale	medium-gray, carbonaceous with coaly wisps, blocky at top, becomes fissile and platey at base, sheared and polished											R2
37		187.73	188.24	.51	Coal	bright with dull, .05 dirty band at base, compact, powdery with fragments when broken											S2
37		188.24	188.72	.48	Coal	as above, brighter, highly sheared and polished											
37		188.72	189.02	.30	Coal	shaley, fissile, platey, polished surfaces											S3
37		189.02	189.49	.47	Shale	carbonaceous, medium gray, sheared, polished blocky to platey at base											R2
37		189.49	190.24	.75	Lost	core											
37		190.24	190.42	.18	Coal	shaley, dull, dirty, ground and broken											S3
37		190.42	190.78	.36	Coal	shaley, dull, highly polished and sheared											S3-S4
37		190.78	191.40	.62	Coal	compact, bright with dull with two 1 cm shale splinters, brittle, fissile											S2
37		191.40	191.43	.03	Shale	black, carbonaceous and coaly, sheared and polished											R2
37		191.43	191.54	.11	SS	coarse grain, conglomerative, black and very coaly, one calcite stringer	19°										R3
37		191.54	191.64	.10	SS	same as above											

ALL LINEAR UNITS IN METRES

F: RB/RS — GOLDR ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LDDGEROLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ?
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
38	191.64	192.56	.92	Coal	compact, fragmental when broken, bright with dull, polished and sheared, 1 cm shale split 3 m from bottom											S2
38	192.56	192.70	.14	Shale	very coaly, black											R1
38	192.70	192.98	.28	Coal	as before											
38	192.98	193.13	.15	Shale	black, carbonaceous, coaly wisps, 2 fractures sub-parallel to core axis, lined with coal											R3
38	193.13	193.75	.62	Coal	hard, dull with bright bands, polished and sheared											S3
38	193.75	194.65	.90	Shale	black, coaly, 2 polished coal fractures											R3
38	194.65	195.21	.56	Lost	core - coal											
38	195.21	195.37	.16	Coal	shaley, polished, fissile, ground at base											R3
38	195.37	196.62	1.25	SLTST	carbonaceous, shaley, non-calcareous, medium gray, broken and rubbly											R3
38	196.62	196.82	.20	SLTST	as above											R3
39	196.82	198.10	1.28	SLTST	medium gray with carbonaceous plant material, non-calcareous, 3 polished calcite curved surfaces											R3
39	198.10	198.27	.17	SS	very fine grain, light-medium gray, R3, rubble	28°										
39	198.27	198.69	.42	SS-SLST	interbedded, finely laminated, non-calcareous, rubbly, sandstone - very fine grain, siltstone - light gray, grades to shale											
39	198.69	199.29	.60	Shale	silty, carbonaceous, dark gray, semi-stick at top, rubbly at base											R3
39	199.29	199.37	.08	SS-SLST	as above											
39	199.37	199.57	.20	Lost	core											
39	199.57	200.44	.87	SS-SLST	highly jointed and fractured, rubbly, as above, cross-bedded, ripple-bedded, joints and fractures clean and smooth											
40	200.44	200.92	.48	SLST-SH	interbedded siltstone and shale, semi-stick thin 1 cm, sandstone - very fine grain, bands, shale - siltstone is dark gray, carbonaceous, joints and fractures clean and smooth and polished - becomes shale at base	23°										R3

ALL LINEAR UNITS IN METRES

1:R&/OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MDIST % a.r.b. / residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
40	200.92	201.67	.75	Shale	medium gray, non-calcareous, two clean joints											
40	201.67	201.92	.25	Shale	silty - medium gray, carbonaceous, cross-cut by calcite stringer network											
40	201.92	202.02	.10	Shale	brecciated with fragments in ground powder, rouge											R1
40	202.02	202.30	.28	Shale	dark gray, carbonaceous, silty at top, rubble, finely banded, blocky and rubbly, 2 smooth joints	24°										R2
40	202.30	202.67	.37	Shale	as above, brecciated at base, rubbly											
40	202.67	203.25	.58	Shale	gauge zone - fragmented, some solid blocks polished - broken											
40	203.25	203.35	.10	Shale	as above, silty at base, 1 fracture, clean irregular											
40	203.35	203.79	.44	SS	fine grain, medium-gray, massive											R4
40	203.79	204.64	.85	SS	as above with some darker gray siltstone beds, 1 bedding plane fracture, minor cross-bedding, 4 joints, some calcite on joints	25°										R4
41	204.64	205.04	.40	SS	fine grain, 1 joint, as above											
41	205.04	205.14	.10	SS	as above, increasingly silty											
41	205.14	205.46	.32	SLTST	medium-dark gray, 1 slicked joint, 1 clean smooth joint											
41	205.46	207.03	1.57	SLTST	2 joints - becoming whaley											R3
41	207.03	207.11	.08	SLTST	as above											R3
41	207.11	208.35	1.24	SLST-SS	interbedded, fine-medium sandstone and dark gray siltstone, minor cross-bedding, broken core, some plant debris	25°										
41	208.35	208.60	.25	SLTST	dark gray, becoming shale, carbonaceous											
42	208.60	208.90	.30	SLTST	dark gray, carbonaceous, plant debris, trace of pyrite on bedding	25°										
42	208.90	209.12	.22	SLTST	as above, rubble											
42	209.12	209.38	.26	SLTSI	as above, broken											R3

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS [†]
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
42		209.38	209.78	.40	SLTST	stick, 1 joint, slightly sandy										R3
42		209.78	210.38	.60	SLTST	medium-dark, interbedded with fine grain, light gray sandstone, finely laminated, small scale cross-bedding	23°									
42		210.38	210.58	.20	SS	fine grain with very thin siltstone interbedded light gray, some pyrite on 1 bedding plane joints										R4
42		210.58	210.92	.34	SS	fine grain, rubbly, silty										R4
42		210.92	211.32	.40	SS	as above										
43		211.32	211.52	.20	SS	as above										
43		211.52	211.84	.32	SS	fine and medium grain with wispy dark-gray interbedding and silty dark-gray cross-beds, sandstone light gray, rubbly										R4
43		211.84	212.46	.62	SS	as above, broken stick, medium scale cross-bedding, 2 joints	28°									
43		212.46	212.55	.09	SLTST	sandy, dark gray										
43		212.55	212.88	.33	SLTST	dark gray with finely interbedded, fine grain sandstone cross-bedding, 1 clean joint	21°									R3
43		212.88	213.56	.68	SS	light gray, fine to medium grain with dark gray silty wispy interbedding	21°									
43		213.56	214.03	.47	SLTST	dark gray, sandy										R4
43		214.03	215.20	1.17	SS	fine to medium grain, light gray sandstone, with dark gray siltstone interbeds, 22°	20°									
43		215.20	215.33	.13	SLTST	dark gray with light gray sandstone cross-beds	22°									
44		215.33	215.51	.18	SLTST	as above, sandy										
44		215.51	216.01	.50	SLTST	dark gray, sandy with some convolute, light gray sandstone stringers										R3
44		216.01	217.21	1.20	SS	interbedded, medium to fine sandstone with wispy dark gray siltstone, bedding is well-defined, some convolute and cross-bedding, bioturbated	25°									
44		217.21	218.71	1.50	SS-SLTST	as above, increasingly sandy at bottom, more medium grain, 3 joints clean										

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S P R C

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
44	218.71	219.34	.63	SS		light gray with dark siltstone interbeds, thin coaly bed in middle, cross-bedding	25°									
45	219.34	220.24	.90	SS		fine to medium grain with some dark gray silty interbeds, some iron-staining, core is broken, 3 joints										
45	220.24	220.34	.10	SS		gauge										S5
45	220.34	222.04	1.70	SS		medium to coarse grain, broken, rubbly to gauge, black, soft, carbonaceous material throughout, a few coaly slicked surfaces										S4-R3
45	222.04	223.62	1.58	SS		as above, less gauge rubbly, broken stick in lower half, abundant coaly lenses in solid core										
46	223.62	225.22	1.60	SS		stick to broken, medium grain, salt and pepper, abundant coaly slicks, 3 joints, bedding poorly defined, with some pyrite stain	27°									R4
46	225.22	226.75	1.53	SS		as above, 3 joints										
46	226.75	227.45	.70	SS		as above, some calcite-filled fractures, coaly bedding plane fractures										
47	227.45	228.30	.85	SS		broken stick, light gray, salt and pepper bedding poorly defined, massive	20°									R4
47	228.30	228.43	.13	SS		probably gauge										R1
47	228.43	229.93	1.50	SS		medium with some coarse grain, salt and pepper, some broken stick, mostly rubble										R4
47	229.93	231.13	1.20	SS		as above, mainly rubble										
48	231.13	232.50	1.37	SS		as above, 4 joints, mainly broken stick, some rubble at top, a few calcite and coaly-filled fractures										
48	232.50	233.02	.52	SS		as above, stick 25% rubble, a few siltstone clasts, 2 joints, some bedding, mostly massive, becoming very fine grain and silty	22°									R4
48	233.02	233.72	.70	SS		interbedded, fine grain sandstone and dark gray siltstone, trace coaly wisps, broken small scale cross-bedding										R4
48	233.72	234.28	.56	LST-SS		as above, rubbly										

ALL LINEAR UNITS IN METRES

†:RB/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	304
CONTINUED	

COKE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	304
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	VM. % d.b.	FC % d.b.	F.S.I.	C.V.	
49		234.28	234.72	.44	SLST-SS	as above, broken stick, some rubble	15°									
49		234.72	236.26	1.54	SLST-SS	as above, mainly broken stick, 6 joints, some convolute bedding										
49		236.26	237.46	1.20	SS-SLST	as above, but becoming increasingly sandy										
49		237.46	237.56	.10	SLST	dark gray, carbonaceous, slightly sandy										R3
50		237.56	237.96	.40	SS-SLST	interbedded, as above, stick										
50		237.96	238.19	.23	SS	convolute, dark gray, silty beds	17°									
		238.19	239.01	.82	Shale	with some cross-bedded fine grain light gray sandstone beds, dark gray carbonaceous shale, silty, broken stick, 1 joint	13°									R3
50		239.01	240.40	1.39	Shale	dark gray, carbonaceous, silty shale 2 joints										
50		240.40	241.63	1.23	Shale	as above										R3
51		241.63	241.91	.28	Shale	as above										
51		241.91	243.09	1.18	Shale	dark gray, carbonaceous, waxy texture, broken stick, 4 joints										R2
		243.09	246.39	3.30	Lost	core - shale, according to drillers' depth										
51		246.39	248.07	1.68	Shale	dark gray, carbonaceous, slightly silty, carbonaceous plant debris, broken stick, 4 joints										R3
52		248.07	248.59	.52	Shale	as above, becoming silty towards base, more medium gray at base, a few slickensides, 1 joint										R3
52		248.59	248.99	.40	SS	medium grain, salt and pepper, massive, 2 joints, very poorly defined bedding	19°									
52		248.99	249.99	1.00	Lost	core - in hole, driller indicated thickness of 1 m, TD - 250 m.										

ALL LINEAR UNITS IN METRES

† R&OR S - GOLDR ASSOCIATES HARDNESS CODE
 * RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	304
CONTINUED	

COAL & COAL CORE DESCRIPTION

PROJECT AREA	Lodgepole McLachlan	DATE	REGIN IND	08/08/80 08/21/80	HOLE No.	305	PAGE	1
LOGGING	LOGS RUN LOGGED BY	Density/Gamma/Galiper B. Davies	COAL CORING PERFORMANCE	LOG USED	Density, Gamma			
OTHER TESTS	Piezometer		CORE DIAMETER	III	No. OF SEAMS SAMPLED	5		
			CORE RECOVERED	266.39	EXAMINER (S)	BWM/HK		
			LENGTH CORED	296.24	DATE	09/08/80		
			CORE RECOVERY	90.0 %				

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		A	SEAM	SAMPLE No	ANALYTICAL DATA						REMARKS [†]
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
1		9.2	9.45	.25	Slat	Dark gray, mostly massive & poorly bedded.										R3
1		9.45	9.75	.30	Sst	Fine grain to very fine grain. Appears to have evidence of bioturbation. Light gray - salt & pepper. 1 calcite lined joint. Calcareous. Semi stick.										R4
1		9.75	10.10	.35	Slat	Shaley-microveinlets of CaCO ₃ massive dark gray. Calcareous.										R3
1		10.10	10.35	.25	Sst	Light gray. A fine gray with numerous black shaly wisps. Calcareous. Semi stick.	24°									R3
1		10.35	10.65	.30	Shale	with sandy lenses - black; massive - sandstone - light gray, fine grain to dark gray. Calcareous.										R3
1		10.65	11.65	1.00	Sst	Silty to shaley - sandstone is fine grain, massive and light gray with black shale wisps and dull brown siltstone bands. 1 fracture clean. Joint set filled with white calcite (6 joints); microveinlet fracture system annealed. Stick-medium calcareous.	30°									R3
1		11.65	11.72	.07	Shale	Carbonaceous with polished surfaces. Calcite fracture system. Massive; slickensides; calcareous.										R2
1		11.72	11.95	.23	Sst	1 clean fracture; dark gray; silty; with microveinlets of calcite, calcareous.										R3
1		11.95	12.12	.17	Shale	Black carbonaceous massive, semi stick, calcareous.										R3
		12.12	12.22	.10	Shale	As above										
1		12.22	12.41	.19	Sst	Fine grain to very fine grain; silty lenses massive dark gray, semi stick, calcareous.										R3
1		12.41	12.51	.10	Shale	Rubble to broken - Dark gray massive. Calcareous.										
2		12.51	13.60	1.09	Sst	Light gray to dull brown Dark gray carb stringers. Silty at base. Calcareous-mildly at top, moderately at base. Semi-stick.	34°									R3

ALL LINEAR UNITS IN METRES

* MEASURED FROM THE HORIZONTAL PLANE

▲ ANGLE MEASURED FROM CORE AXIS

† : R &/OR S — GOLDR ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. 305

FILE No. BA-211A
REVISED Nov 1978

CORE & COAL CORE DESCRIPTION

PROJECT AREA Lodgepole McLatchie

HOLE No. 305 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE °	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS 1
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.	
										d.b.	residual	d.b.	d.b.	d.b.		
		13.60	14.10	.5	Lost Core											
2		14.10	15.18	1.08	Sst	Ground core at top - very thin black carbonaceous bands. Dark gray silty bands. Light gray to buff sandstone bands. Moderate to strong calcareous. Stick to semi stick core.										
2		15.18	16.68	1.5	Sst	As above strongly calcareous	32°									R3
2		16.68	16.88	.2	Sst	As above										
3		16.88	18.03	1.15	Sst	Moderately-strongly calcareous - alternate light gray - dark gray bands. Thin laminations irregular white calcite veinlets. Semi-stick, fine grain, distinct x-bedding.	40°									R3
3		18.03	18.21	.18	Sst	Light gray, fine-medium grain. Calcareous. Weakly laminated. Stick-core.										R3
3		18.21	18.77	.56	Sst	Fine grain with shaley splits; well bedded - calcareous. Light gray; two bedding plane joints.	26°									R3
3		18.77	19.74	.97	Sst	Fine to medium grain; massive with wavy bedding with coaly splits along bedding. Mostly semi-stick with rubblely section in centre, polished on coaly splits. Bedding poorly defined.	23°									R2
		19.74	20.45	.71	Sst	As above, becoming more rubblely. 1 joint coal lined sub-parallel to core axis, a few irregular calcite stringers; slightly calcareous.										R2
		20.24	21.18	.94	Sst	Fine grain to very fine grain; medium dark gray with coaly and calcite stringers. Core breaks along coaly lenses; surfaces are polished and wavy, becoming rubblely. 2 fractures sub-parallel to core axis, and bedding plane fractures.	26°									R3
		21.18	21.27	.09	Sst	Medium to coarse grain, semi-stick; massive; x-bedded. 1 coaly split.										R4
		21.27	22.10	.83	Sst	As above. 2 coaly splits; abrupt lower contact										
4		22.10	22.78	.68	Slst	Siltstone - medium gray with dark gray carbonaceous plant fragments. Semi-stick to broken, slightly calcareous; some irregular calcite veinlets.	72°									R3
4		22.78	24.05	1.27	Slst	Shaley in places with light and dark laminations, broken and rubblely; mildly calcareous.										R3

ALL LINEAR UNITS IN METRES

1-#B/ORS - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

#RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No. 305 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	Edgepole
AREA	McLatchie

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO MAIN	DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO							MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
4		24.05	24.25	.2	Slat	As above becoming semi stick. Bedding disturbed.										R3
4		24.25	24.42	.17	Sst	Fine to medium grain; moderately calcareous. Bedding overstepping and cut by abundant calcite veins; 1 fraction coaly undulating and polished.										
4		24.42	25.22	.8	Slat	As previously described, but stick core. 3 clean joints. 5 thin calcite stringers; no bedding; shaley.										R3
4		25.22	25.56	.34	Sst	Fine to very fine grain. Interbedded with siltstone - light and dark gray laminations. Moderately calcareous, grading to coarse grained below.										R3
4		25.56	26.05	.49	Sst	Medium to coarse grain with coaly splits; dark gray, highly calcareous with rip clasts of shale near base.										
5		26.05	26.18	.13	Sst	As above										
5		26.18	26.36	.18	Shale	Coaly - soft fissile friable - Compact; black										R2
5		26.36	26.66	.30	Shale	Dark gray; carbonaceous plant fragments, some polished surfaces. Cut by abundant calcite lined micro-veinlets.										R2-R3
5		26.66	26.73	.07	Coal	Shaley, compact, powdery when broken, polished										R1
		26.73	27.01	.28	Lost Core											
5		27.01	27.05	.04	Shale	Dark gray, carbonaceous, rubblely										
		27.05	27.90	.85	Shale	As above; semi stick										R3
		27.9	28.3	.40	Shale	As above with coaly lenses; massive non-calcareous, grades to siltstone below										R3
5		28.3	28.83	.53	Slat	Medium to dark gray with laminations; some calcite veinlets sub parallel to bedding; two irregular polished fractures lined with coal and calcite; moderate to strong calcareous	27°									R3
5		28.83	29.14	.31	Sst	Fine grain, hard - stick core with thin dark gray silty lenses; bedding curved and irregular, becoming massive at base.	25°									R3

ALL LINEAR UNITS IN METRES

1:R&/OR S - GOLDFER ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: Lodgepole
 AREA: McLatchie

HOLE No. 305
 CONTINUED

BOX No	DEPTH BY TOP OF BOX	DEPTH		TH	LITHO MAIN	DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	MEDIAN ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO							MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
5		29.14	29.92	.78	Sst	Fine grain, hard, massive - cut by intersecting network of calcite lined fractures. 3 coal lined joints at base, becoming rubblely at base.										R4
		29.92	30.00	.08	Sst	Breccia, coaly, fine grain sandstone; compact, polished										
		30.00	30.20	.20	Lost Core											
		30.20	30.60	.4	Slst/Sst	Broken, rubblely; finely laminated; light gray and dark gray; bedded	28°									
		31.01	32.11	1.10	Sst	Light-medium gray; fine-medium grain; stick (semi-stick); salt and pepper with abundant calcite veins, some Pyrite.										R4
6		32.11	32.25	.14	Sst	As above; more coarse near base; Matrix becoming darker; highly calcareous; abrupt lower contact.										
6		32.25	33.55	1.30	Slst	with some shale interbedding; medium to dark gray with wavy laminated bedding and coal lenses. 8 bedding plane fractures polished and lined with coal. 1 joint sub parallel to core axis lined with pyrite; slightly calcareous	32°									R3
6		33.55	34.45	.90	Slst	with sandstone interbedding; siltstone medium-dark gray, Sandstone: light-medium gray. Top 28°, middle 45°, base 34° dip. 7 calcite lined fractures all parallel. Moderately calcareous.										R3
7		34.45	35.05	.6	Shale	Black; fissile with coaly wisps. 2 coal lined polished fractures massive										R2
7		35.05	35.29	.24	Shale	Same as above; no apparent bedding										
7		35.29	35.83	.54	Slst	Medium gray with dark gray shale rip-up clasts throughout. 1 fracture coaly and polished with calcite; non-calcareous	33°									
7		35.83	36.08	.25	Slst/Sh	Interbedded; medium and dark gray bands; wavy bedding. 3 polished fractures lined with some calcite and minor pyrite sheen.										R3
		36.08	36.33	.25	Lost Core											
7		36.33	36.50	.17	Slst/Sst	Interbedded. Sandstone- very fine grain, medium gray, with coaly lenses at top. Siltstone- medium-dark gray; moderate-highly calcareous; network of calcite veinlets sub parallel to core axis; appears to be movement along veinlets.										

ALL LINEAR UNITS IN METRES

1-R4/OR 3 - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No. 305
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	Lodgepole
AREA	McLatchie

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA							REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %		V.M. %		F.C. %	
7	36.50	37.30	.80	Sls/Sat	Same as above with 2 coal splits, thin and sub-parallel to bedding.	29°											R3
7	37.30	37.58	.28	Shale	Dark gray; silty with two coal lined joints.												R2-R3
7	37.58	37.95	.37	Slst	Medium-dark gray; indistinct wavy laminations with a few sandy beds; stick-semi stick. 2 calcite lined joints.	32°											
7&8	37.95	39.54	1.59	Slst	As above; semi stick at base. 4 joints at base, clean, calcareous.	29°											R3
8	39.54	40.44	.9	Shale	Dark gray to black; massive, broken to semi-stick. 3 polished fractures lined with coal, silty at base.												R2
8	40.44	41.06	.62	Slst	As previously described. 3 calcite veinlets, moderately calcareous.	23°											R3
8	41.06	42.68	1.62	Slst	As above, becoming more massive, shaley toward base, rubblely in places, with abundant polished fractures, calcareous, abundant calcite veinlets, carbonaceous, some pyrite spotting on fractures.	26°											R3
9	42.68	43.07	0.39	Slst	As above. Very carbonaceous, abundant plant fragments, shaley, moderately to strongly calcareous.												R3
9	43.03	43.98	0.95	Shale	Carbonaceous to coaly; black; semi-stick to blocky, massive fracture surfaces have very polished coal, tarnished pyrite.												R2
9	43.98	44.03	0.05	Coal	Bright, flakey.												S4
9	44.03	44.20	.17	Shale	Silty, dark gray to black, carbonaceous and coaly, massive, abundant plant fragments, tarnished pyrite and polished coaly surfaces.												R2
9	44.20	44.80	.60	Coal	Bright, hard for top 0.16m breaking into small chunks. Rest of seam is dull with bright, soft, powdery.												S2
	44.80	45.20	.40	Lost	Shale.												
9	45.20	45.61	0.41	Shale	Carbonaceous with polished coaly surfaces, tarnished pyrite, massive with occasional thin veinlets of calcite.												R2
9	45.61	45.69	0.08	Sat	with dark gray and black silty laminations, joint set filled with calcite (very thin). Sandstone is												R3

ALL LINEAR UNITS IN METRES

*R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: Lodgepole
ARFA: McLatchie

HOLE No. 305
CONTINUED

BOX No	DEPTH FROM TO	TH	LITHO MAIN	DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS		
								MOIST % a.r. b.	MOIST % Residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.		C.V.	
				fine grain, light gray, finely laminated, strongly calcareous.											R1	
9	45.69	46.60	0.91	Ssl	As above. Stick core. Pronounced white calcite lined joint set at low angle to core axis. Indistinct x-bedding, burrowing, strongly calcareous.	28°										R1
9&10	46.60	47.20	0.60	Slst	Sandy, rubblely at base, otherwise semi-slick. Dark gray, massive, thin veiniers of white calcite. Strongly calcareous.											R3
10	47.20	48.62	1.42	Slst/Sst	Finely laminated siltstone and sandstone. Strongly calcareous. Irregular fractures and joint sets filled with calcite. Indistinct x-bedding in sandstone. Siltstones are dark gray to black, bands 2-4mm thick and up to 0.18m thick. Siltstones are fine grain, light gray, up to 5 cm wide beds.	28°										R3
10	48.62	50.17	1.55	Slst/Sst	As above, still strongly calcareous.	28°										R3
10	50.17	50.69	0.52	Slst/Sst	As above.											R3
10	50.69	51.37	0.68	Shale	Silty at base, black to dark gray, massive, semi-slick, moderate to strongly calcareous, abundant carbonaceous plant fragments. Occasional white calcite lined fractures											R2
11	51.37	51.66	0.29	Sst/Slst	Sandstone/siltstone interbeds as above grading into medium grain. Sandstone at base. Sandstone is light gray to salt and pepper at base. 1mm thick white calcite joints. Strongly calcareous.											
11	51.66	51.84	0.18	Sst/Slst	Dark gray to black siltstone, light gray, medium grain sandstone as above; strongly calcareous.											
11	51.84	52.22	0.38	Shale	Very weak calcareous, black, carbonaceous, polished coaly surfaces slickensides, massive, rubblely in middle. Rubble displays abundant polished coaly surfaces.											R2
	52.22	52.30	0.08	LosrSh												
11	52.30	52.88	0.58	Sh/Coal	Interbanded shale and coal. Coal varies from 4-12cm wide in distinct bands, bright, flakey, some polished surfaces. Shale is black, coaly, carbonaceous, massive, with polished flecks and coal surfaces.											S2 coal R1 shale
							sample 14	1.47	.77	11.60	18.48	69.92	7.5			

ALL LINEAR UNITS IN METRES

1:R8/OR 5 — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. 305
CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	Lodgepole
AREA	McLatchie

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
11	52.88	53.13	0.25	Coal	Bright, broken, granular to flakey with polished surfaces.											R2
	53.13	53.25	0.12	Lost Coal												
11	53.25	53.45	0.20	Shale	Carbonaceous, polished, coaly surfaces, pyrite on polished surfaces, irregular calcite fractures.											R2
11	53.45	53.87	0.42	Slst/scr	Interbedded as above with numerous thin white calcite stringers, moderate calcite.											R3
11	53.87	54.70	.83	Shale coaly	Carbonaceous, coaly, semi-stick, massive, black, polished coal surfaces, pyrite fairly silty.											R2
11	54.70	55.36	0.66	Shale coaly	Coaly, black, carbonaceous, coal stringers 2-5cm. wide.											R2
12	55.36	56.09	0.73	Shale	Black, massive, thin veinlets of bright, powdery coal. Fracture surfaces have polished coal and pyrite. Stick to semi-stick; abundant carbonaceous plant fragments, silty near base.											R2
12	56.09	56.18	0.09	Shale	Much more coaly than unit above. Coal is flakey, and bright.											R2
12	56.18	56.26	0.08	Shale	As above.											R2
12	56.26	56.57	0.31	Shale	Black, massive, carbonaceous, abundant plant fragments, non-calcareous. Fracture surfaces polished with pyrite.											R2
12	56.57	57.52	0.95	Slst	Strongly calcareous, dark gray, massive, carbonaceous plant fragments, clean fracture surfaces, stick to semi-stick.											R2
12	57.52	57.63	0.11	Shale	Black, carbonaceous, plant fragments, massive.											R2
12	57.63	57.75	0.12	Slst	Dark gray, massive with occasional 1-2cm wide light gray sandstone bands, semi-stick, strongly calcareous.			34°								R3
12	57.75	58.00	0.25	Slst	As above. Stick core, strongly calcareous.											R3
12	58.00	58.77	0.77	Sh/coal	Interbedded. Coal stringers and bands 1mm-5cm thick, interbedded with black, massive, carbonaceous shale.											R2
12	58.77	59.05	0.28	Slst/scr	Interbedded. Strongly calcareous, thin black siltstone laminae interbedded with light gray, fine grain sandstone; irregular white calcite			13°								R2

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE
 -RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT AREA	Lodgepole McLatchie
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HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH % d. b.	V.M. % d. b.	F.C. % d. b.	F.S.I.	C.V.	
12		59.05	59.12	0.07	S1st	Dark gray to black, massive with numerous irregular white calcite fractures, carbonaceous with polished carbonaceous fracture surfaces. Semi-stick										R2
2&13		59.12	59.74	0.62	S1st	As above. Broken core at base										R2
13		59.74	60.69	0.95	Sst	Sandstone with minor dark gray to black siltstone laminae. White calcite tension gashes. Indistinct x-bedding sandstone is fine grain, light gray to light tan, strongly calcareous										R3
13		60.69	61.83	1.14	Sst	As above. Still strongly calcareous, becoming more silty at base and darker gray and less laminated. Semi-stick to stick	31°									R3 R2 @ silty base
13		61.83	62.30	0.47	Shale	Silty, dark gray to black, weakly calcareous, massive. Gradational from overlying sandstone	31°									R2
13		62.30	62.52	0.22	Shale	As above. Weakly to moderately calcareous, semi-stick, carbonaceous in places. Carbonaceous on shear planes										R2
13		62.52	62.76	0.24	S1st	Dark gray to black, massive, strongly calcareous										R3
13		62.76	63.66	0.90	Sst	Sandstone with thin black siltstone laminations, strongly calcareous, evidence of burrowing, very weak x-bedding, tension gashes filled with white calcite. Stick core.	31°									R3
14		63.66	63.79	0.13	Shale	Coaly black, massive with thin stringers of powdery black coal. Rubbly core.										
14		63.79	64.59	0.80	Shale	Semi-stick, carbonaceous with abundant coaly plant fragments, some tarnished pyrite in plant fragments, massive, coaly at base with thin powdery, dull, black coal stringers.										R2
		64.59	64.90	0.31	Lost Core											
14		64.90	65.10	0.20	Shale	As above.										
14		65.10	65.37	0.27	Coal	Soft, powdery to flakey, mostly bright.		LPD-305-01								S1
14		65.37	65.56	0.19	Coal	bright, flakey		65.11 to 65.24	20.00	2.44	8.70	18.70	72.60	1.5		S2
14		65.56	65.82	0.26	Coal	Soft, powdery, dull		LPD-305-02		14.50	2.54	6.25	21.13	72.62	7.0	S1
14		65.82	65.94	0.12	Coal	Bright, flakey										S2

ALL LINEAR UNITS IN METRES

↑:R&/OR S — GOLDBER ASSOCIATES HARDNESS CODE

-RQD — ROCK QUALITY DESIGNATION [%]

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	Lodgepole
AREA	McLatchie

HOLE No.	305
CONTINUED	

PAGE 9
OF 38

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	REMARKS	SEAM DESIGN.	SAMPLE No.	MOIST %		ANALYTICAL DATA					REMARKS 1			
		FROM	TO						a.r.b.	residual	ASH % d.b.	VM % d.b.	FC % d.b.	F.S.I.	C.V.				
14		65.94	66.17	0.23	Coal	As above.													
14		66.17	66.36	0.19	Coal	Soft, powdery, dull, lunc.													
		66.36	66.55	0.19	Lost Coal	Could be anywhere in coal seam.													
14		66.55	66.63	0.08	Shale	Polished sheared surfaces													
14		66.63	67.00	0.37	Sst	Fine grain with black siltstone laminae, moderate to strongly calcareous, fracture surfaces lined with calcite, silty.													
14		67.00	67.40	0.40	Slst	Some carbonaceous sheared surfaces, massive, dark gray, moderate calcareous, some carbonaceous plant fragments.													
14 & 15		67.40	68.54	1.14	Slst/ss	Silty at top, sandy at bottom. Siltstone-dark gray. Sandstone-light to medium gray, shows weak x-bedding and burrowing, fine grain. Stick core, very thin white calcite joints, some occasional carbonaceous plant fragments, strongly calcareous.	18°												
15		68.54	69.11	.57	Sst	Fine grain to very fine grain, light to medium gray with numerous dark gray sandstone beds. Displays small scale x-bedding, slightly calcareous, abundant plant fragments. Polished coaly joint planes sub-parallel to bedding; Calcite lined joint set.													
15		69.11	69.94	0.83	Sst/slst	Siltstone predominates over sandstone. Sandstone light to medium gray, very fine grain. Siltstone is dark gray. Flaser structure. Slightly calcareous. Semi-stick to stick	22°												
15		69.94	70.65	.71	Slst/Sh Intbddd	Siltstone- medium gray. Shale is dark gray to black, sandy wisps. Thinly embedded (2-5mm). One calcite lined joint set. Strongly calcareous. Stick.	24°												
15		70.65	71.14	.49	Shale	Dark gray to black, carbonaceous. Abundant plant fragments. Strongly calcareous. Polished coal surfaces sub-parallel to bedding. Stick	24°												
15		71.14	71.42	.28	Shale	Black, very coaly, Polished surfaces, bright, hard coal lenses. Stick-semi-stick													
15		71.42	71.60	.18	Lost Core														

ALL LINEAR UNITS IN METRES

1 - R & / OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	Lodgepole
AREA	McLatchie

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (MINIMUM COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH % V.M. %		FC. %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
15	71.60	71.94	.34	Shale	Carbonaceous, black, abundant carbonaceous plant debris, massive, stick											R3
15	71.94	72.30	.36	Shale/Siltstone	Siltstone is medium to dark gray. light to medium gray, fine grain to very fine grain. Convolute bedding. Calcite lined joints strongly calcareous. Shale is dark gray. Strongly laminated in silty zones. Stick	30°										
5&16	72.30	73.02	.72	Sst/silt	Flaser structure. Light gray, fine grain. Sandstone. Siltstone is medium to dark gray. Bedding is 1mm-12cm wide. Calcite lined joint planes. Calcite stringers. Strongly calcareous	26°										R3
16	73.02	73.26	.24	Sst/silt	As above, grading into sandstone below. Two calcite-lined joint sets subtended by calcite lined fracture.											
16	73.26	74.41	1.15	Sst	Light gray, fine grain, finely laminated with coaly laminations. Salt and peppery. 2 calcite lined joint sets. Medium gray at base. Stick	24°										R3
16	74.41	74.66	.25	Lost Core												
16	74.66	74.71	.05	Shale	Dark gray to black, laminated (.5cm thick)	25°										R2
	74.71	74.99	.28	Shale	Carbonaceous. Black, finely laminated, polished surfaces parallel to bedding, coaly wisps, strongly calcareous	28°										R2
16	74.99	75.70	.71	Sh/Silt	Minor sandstone interbeds. Shale is dark gray to black. Siltstone is medium gray. Sandstone is very fine grain, light gray. Strongly calcareous. Sequence is finely laminated. Calcite-lined joint sets. Semi-stick to stick	29°										R3
16	75.70	75.88	.18	Shale	Very carbonaceous, black, polished surfaces sub-parallel to bedding, massive, semi-stick to stick. Non-calcareous.											R2
16	75.88	76.00	.12	Shale	Very coaly and carbonaceous.											R1
16	76.00	76.10	.10	Lost Core	Coaly shale				LPD-305-3	11.56	.78	65.96			0.0	
16	76.10	76.20	.10	Coal	Bright, flaky to powdery, moderately soft.											S1
16	76.20	76.35	.15	Shale	Coaly black, highly broken, abundant polished surfaces, brittle				LPD-305-4							R1
	76.35	76.50	.15	Lost Core	Shale as above											

ALL LINEAR UNITS IN METRES

1:R&/OR S -- GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD -- ROCK QUALITY DESIGNATION (%)

FF -- FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	Lodgepole
AREA	McIntachie

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE 1:1	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM. %	FC. %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
	76.50	76.75	.25	Lost	Coal											
	76.75	76.96	.21	Coal	Bright with dull, compact, small granular to powdery											S4
	76.96	77.01	.05	Coal	Bright, hard, small and blocky.											S5
	77.01	77.16	.15	Coal	Bright, granular to powdery, compact			LPB-305-4		10.37	1.35	9.35	19.06	71.59	9.0	S4
	77.16	77.25	.09	Coal	Bright with dull, abundant polished surfaces with pyrite on them.											R1
17	77.25	77.46	.21	Coal	Dull with some bright, very dirty, abundant polished surfaces, pyritic some hard, bright coal stringers, broken core											R3
17	77.46	77.56	.10	Coal	Dull with bright, granulated flakey, badly broken											S5
17	77.56	77.75	.19	Coal	Very dirty, polished surfaces pyritic											R1
17	77.75	78.67	.92	Shale	Carbonaceous, calcareous, polished coaly surfaces with tarnished pyrite, calcite lined joint sets, 3 sets of joints, carbonaceous plant fragments, stick core											R2
17	78.67	78.9	.23	LostCore	in shale interval											
17	78.9	79.41	0.51	Slt/sst	Interbedded. Sandstone-light to medium gray, salt and pepper, fine to very fine grained. Siltstone-medium to dark gray. Siltstone beds range from .02 - .4m thick, calcite lined joint sets (2sets), strongly calcareous, calcite stringers sub-parallel to bedding, semi-stick core	25°										R2
17	79.41	80.04	.63	Sst/slt	Interbedded as above. Sandstone-indistinct cross bedding. Siltstone-contains some sandstone clasts, calcite filled tension cracks, semi-stick core moderately calcareous.											
17	80.04	81.42	1.38	LostCore	Probably in sandstone/siltstone unit											
17	81.42	81.66	.24	Shale	Highly carbonaceous, polished surfaces, minor calcite stringers.											R2
17	81.66	81.9	.24	Shale	Dark gray, minor calcite, irregular, very silty, slickensided calcite lined joint planes.											R3

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 *ROD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: Lodgepole
 AREA: McLatchie

HOLE No. 305
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIP ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.r.b.	residual	d.b.	d.b.	d.b.			
18		81.9	82.26	.36	Shale	Dark gray to black, carbonaceous, plant fragments, calcite stringers, calcite slickensided surfaces											R2
18		82.26	82.31	.05	Shale	As above, brecciated, really muddy											
18		82.31	82.45	.14	Shale	As above, badly broken											
18		82.45	83.41	.96	Sst/slst	Interbedded, sandstone-light to medium gray, fine to very fine grained, siltstone-dark gray, 3 calcite lined joint sets, strongly calcareous, sandstone-indistinct cross beddings, irregular bedding.	20°										R4
18		83.41	84.25	.84	Sst/slst	Interbedded as above becoming shaley at base, sandstone-flaser bedding, numerous calcite stringers- 4 calcite lined joint sets-strongly calcareous	18°										R3/R4
18		84.25	84.50	.25	Shale	Dark gray to black, carbonaceous, plant fragments, polished coaly surfaces, bright hard coaly stringers											R2
18		84.50	84.75	.25	Shale	Dark gray, dirty, possible gouge zone in upper .14m, highly broken, granular.											
18		84.75	84.91	.16	Coal	Bright with some dull, hard, blocky to granular		LPD-305-5		17.54	3.26	2.92	21.98	75.10	7.0		S4
18		84.91	84.96	.05	Coal	As above											
18		84.96	85.02	.06	Coal	Bright, flakey, crisp											S4
18		85.02	85.15	.13	Coal	Dull and bright, powdery with some small bright flakes, compact											S2
18		85.15	85.30	.15	Coal	Bright with dull, blocky to powdery, soft											S2
18		85.30	85.41	.11	Coal	Bright and dull, powdery, compact											S1
18		85.41	85.72	.31	Coal	Bright with dull, polished surfaces, granular to powdery.		LPD-305		.6	13.82	2.93	7.80	21.01	71.19	4.0	S1
19		85.72	85.76	.04	Coal	Bright with dull, granular to powdery, some flakey											S1
19		85.76	85.84	.08	Coal	Dull with some bright, soft, powdery											S1
19		85.84	86.07	.23	Coal	Dull with some bright, soft, granular to powdery, contains bright coal band of flakey coal (S4)											S1

ALL LINEAR UNITS IN METRES

* RB/OR S — GOLDR ASSOCIATES HARDNESS CODE
 * RD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 305
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	Lodgepole
AREA	McLatchie

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %		F.S.I.	C.V.
										a.r.	b.	residual	d.b.	d.b.	d.b.		
19	86.07	86.14	.07	Coal	Bright and dull, powdery			1.PD	305								S2
19	86.14	86.21	.07	Coal	Bright, polished surfaces, granular to powdery, flakey				-6								S3
19	86.21	86.29	.08	Coal	Dull with bright, soft and powdery												S1
19	86.29	86.40	.11	Coal	Bright and dull, granular												S4
19	86.40	86.48	.08	Coal	Bright with dull, hard, flakey												S4
19	86.48	86.60	.12	Coal	Dull with bright, flakey to granular												S5
19	86.86	87.36	.50	Sh/slst	Medium to dark gray, calcite lined joint sets (2), some light coloured laminations in center polished carbonaceous fracture surfaces, non-calcareous												R3
19	87.36	87.93	.57	Sst/slst	Interbedded. Sandstone and siltstone are strongly calcareous. Sandstone is fine grain, light to medium gray, salt and pepper, laminated sub-parallel to bedding, displays soft sediment deformation. Siltstone is medium gray, sequence has calcite lined joints and calcite stringers. Carbonaceous partings.	32°											R4
19	87.93	89.31	1.38	Sst/slst	As above. Semi-stick, rubblely at base	22°											R4
	89.31	89.90	.59	Lost Core													
19&20	89.90	91.15	1.25	slst	Strongly calcareous, medium gray, mottled bedding in places, semi-stick, carbonaceous partings, plant fragments, calcite stringers, 1 irregular joint plane												R3
20	91.15	91.32	.17	Slst	Sandy downsection, strongly calcareous, rubblely, calcite lined joint planes												R3
20	91.32	92.54	1.22	Sst/slst	As previously described, strongly calcareous, semi-stick at top, bottom 3/4 highly broken & rubblely												
20	92.54	92.71	.17	Sst	Medium gray, medium grain, salt and pepper, carbonaceous surfaces, calcite lined joint												
20	92.71	93.20	.49	Lost Sst	joint												
20	93.20	93.70	.50	Sst/slst	Rubblely as previously described												
	93.70	93.9	.2	Lost Core	Sandstone/siltstone												

ALL LINEAR UNITS IN METRES

1-R&R OR S — GOLDER ASSOCIATES HARDNESS CODE
 •RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: Lodgepole
 AREA: Melatchie

HOLE No. 305
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.s.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
21	93.9	94.17	.27	Shale	Black, massive, rubblely at top, semi-stick at base											R3
21	94.17	95.0	.83	Lost Core												
21	95.0	95.2	.20	Slst	Medium gray, calcite stringer, no obvious bedding											R3
	95.2	95.3	.10	Lost Core	Rubblely											
21	95.3	96.05	.75	Shale	Black, no obvious bedding, some plant fragments rubblely											R3
21	96.05	96.88	.83	Shale	Dark gray, carbonaceous, abundant plant fragments, some polished surfaces, rubblely											R2
21	96.88	97.15	.27	Shale	As above, semi-stick											
21	97.15	97.50	.35	Lost Core	in shale											
21	97.50	97.63	.13	Coal	Bright with dull, blocky to granular, hard, crisp, hadly broken, Not sampled											S4
21	97.63	98.00	.37	Lost Core												
	98.00	98.20	.20	Lost	shale											
21	98.2	98.45	.25	Shale	As previously described, polished carbonaceous surfaces											
21 622	98.45	99.75	1.30	Shale	Dark gray to black, slightly calcareous (top), strongly calcareous (base), abundant plant fragments, semi-stick, a few thin coal stringers											R2
22	99.75	100.70	.99	Shale	As above, minor calcite stringers, calcite lined joint planes, very coaly at base											R2
	100.70	101.17	.47	Lost Core												
22	101.17	102.30	1.13	Slst	Medium gray, no obvious bedding, calcite lined joint planes, semi-stick, finely laminated in places	23°										R3
22 & 23	102.30	103.7	1.4	Slst	Medium to dark gray, shaley at top of unit, becomes almost very fine grained sandstone, calcite lined joint set, strongly calcareous, semi-stick, rubblely at base	28°										R3

ALL LINEAR UNITS IN METRES

1-#R/OR S — GOLDER ASSOCIATES HARDNESS CODE
 •RD — ROCK QUALITY DESIGNATION [%]
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 305
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	Longpole
AREA	McLatchie

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	WEIGHTING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS		
		FROM	TO						MOIST % a.c.B. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.			
23		103.7	105.2	1.5	Shale											R2	
					Dark gray to black, carbonaceous plant fragments, some polished coaly surfaces, 2 calcite lined joint sets, strongly calcareous, pyrite on joint surfaces.												
23		105.2	106.03	.83	Shale												
					As above, calcite stringers sub-parallel to bedding												
		106.03	106.41	.38	Shale												
					As above												
23		106.41	107.09	.68	Slst/sst												R3
					Interbedded sandstone-light gray, very fine grained, finely laminated, small scale x-bedded siltstone medium to dark gray, strongly calcareous												
24		107.09	108.89	1.8	Shale												R3
					Carbonaceous, abundant plant fragments, dark gray to black, silty in places, strongly calcareous, semi-stick, some calcite stringers												
24		108.89	108.63	.26	Shale												
					Occasional silty interbeds, 2 calcite lined joint sets, strongly calcareous, as above												
24		108.8	110.29	1.49	Shale												
					As above	20°											
24		110.29	111.06	.77	Shale												
					As above												
24		111.06	111.60	.54	Sst/slst												R3
					Interbedded sandstone-light gray, fine to very fine grained, salt and pepper, siltstone-medium to dark gray, siltstone clasts within sandstone, small scale cross bedding, calcite filled fractures, strongly calcareous.	26°											
25		111.60	111.74	.14	Slst												R3
					Medium gray, strongly calcareous, semi-stick												
25		111.74	112.97	1.23	Slst												R3
					As above with calcite lined joint sets (3), polished carbonaceous fracture surfaces, strongly calcareous	17° 12°											
25		112.97	113.47	.50	Slst												R3-R4
					As above, highly broken, calcite filled fractures sub-parallel to bedding												
		113.47	113.70	.23	LowCore												
					to bedding												
25		113.70	114.42	.72	Slst												R4
					As above, calcite filled fractures sub-parallel to bedding												
25		114.42	114.50	.08	Shale												R1-R2
					Extremely carbonaceous, friable, strongly calcareous.												

ALL LINEAR UNITS IN METRES

1-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 -RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	Lodgepole
AREA	McLatchie

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	RECORDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA							REMARKS ¹	
		FROM	TO						MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	MOIST % a.r. b. residual	ASH % d.b.	VM. % d.b.	FC. % d.b.	F.S.I.		C.V.
25	114.50	114.76	.26	S1st	As previously described, contains 0.05m carbonaceous shale split near top, rubblely, strongly calcareous.												R3
	114.76	114.90	.14	Lost S1st													
25&26	114.90	115.79	.89	S1st	As above, very calcareous, broken at bottom and top, semi-stick in middle, carbonaceous splits and plant fragments	21°											R3
26	115.79	116.91	1.12	S1st	As above, soft sediment deformation at base, carbonaceous surfaces, becomes more shaley than units above but contains very silty bands. Silty bands are strongly calcareous, rest is non-calcareous. Broken core												
	116.91	117.14	.23	Lost Core													
26	117.14	117.80	.66	Sat/s1st	Sandstone-fine to medium grain, medium to light gray, salt and pepper, wavy laminations. Siltstone-medium gray, calcite lined fractures, polished carbonaceous surfaces, calcite lined joint planes, Sandstone at top grading to siltstone at base												
26	117.80	118.22	.42	Carb. Sh.	Rubblely, more carbonaceous towards top than at base. Brittle, may be gauge zone												
	118.22	118.60	.38	Lost Core	Probably shale												
26	118.60	118.90	.30	Lost Core	Probably Shale												
26	118.90	119.03	.13	Carb. Sh.	As above, bright coaly partings, abundant plant fragments throughout, flakey, brittle, black												R3
27	119.03	119.16	.13	Lost	As above												
	119.16	119.30	.14	Coal	Dull with bright, stick												R1
27	119.30	119.38	.08	Coal	Flakey, hard, dull with bright, 2cm bright band at base (R1 hardness)												S3
27	119.38	119.46	.08	Coal	Bright with dull, granular												S2
27	119.46	119.58	.12	Coaly/sh	Black shale, bright coal stringers frequent			TPD-305									R2
27	119.58	119.71	.13	Coal	Bright and dull, granular			-7	5.47	.63	18.44	17.13	64.4	6.0			S4
27	119.71	119.83	.12	Coaly/sh	Friable, black, bright coaly stringers in shale, massive												R1

ALL LINEAR UNITS IN METRES

1-R1/OR 5 - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD -- ROCK QUALITY DESIGNATION (%)

FF -- FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: Lodgepole
 AREA: McLatchie

HOLE No. 305
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
27		119.83	120.01	.18	Coal	Powdery with some flakey parts at bottom, lcn coaly shale at bottom.										S3
		120.01	120.14	.13	lost coal	Somewhere in coal unit										
27		120.14	120.23	.09	Shale	Dark gray										R3
27		120.23	120.65	.42	Coal	Powdery, bright and dull, soft										S2
27		120.65	120.84	.19	Shale	Dark gray, plant fragments and bright coal stringers										R2
		120.84	121.10	.26	Coal	Lost		LPD	305							
									-9	2.07	1.23	12.95	17.92	69.13	4.0	
27		121.10	121.29	.19	Coal	Bright with dull, powdery										S2
27		121.29	121.32	.03	Coal	Very dull										R2
27		121.32	121.36	.04	Coal	Dull, powdery										
27		121.36	122.33	.97	Shale	Dark grey, carbonaceous, plant debris, slicked.										R2
		122.33	122.50	.17	lost sh			LPD	305							
									-8	2.85	.61	89.52			0.0	
27		122.50	122.73	.23	Shale	As above										
27		122.73	122.81	.08	Coal	Dull, powdery.										
27		122.81	123.02	.21	Coal	Dull, polished, fragmented to powdery.										
27		123.02	123.43	.41	Coal	Dull, powdery										
		123.43	124.00	.57	lost coal											
27		124.00	124.05	.05	Shale	Black, Coaly										
		124.05	125.45	.40	lost core	probably coaly shale & shaley coal										
27		125.45	125.55	.10	Coal	Dull, Powdery										
28		125.55	126.15	.60	Coal	Dull, powdery.										
28		126.15	126.29	.14	Coal	Stick, dull, polished.										S4
		126.29	126.40	.11	lost coal											
28		126.40	126.48	.08	Shale	Dark grey, carbonaceous										R3
28		126.48	126.67	.19	Coal	Powdery to fragmented										S3
28		126.67	127.02	.35	Coal	Dull, chunky to powdery, polished										
		127.02	127.20	.18	lost coal											
		127.20	127.40	.20	lost	Shale										
		127.40	127.53	.13	Shale	Black, carbonaceous to coaly.										

ALL LINEAR UNITS IN METRES

† RR/OR/S — GOLDER ASSOCIATES HARDNESS CODE
 *ROD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 305
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r. b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
28		127.53	128.83	1.30	Shale	Dark grey, carbonaceous, a few thin coaly contacts, signs of slicks, plant debris.											R3
28		128.83	129.80	.97	Shale	Medium to dark grey, slightly carbonaceous, silty.											R3
28		129.80	129.88	.08	sh coal	Very shaley, coal fissile											
28		129.88	129.97	.09	shale	Very dark grey, carbonaceous											R3
28		129.97	130.25	.28	shale	Dark grey, carbonaceous, abundant plant debris slightly silty.											R3
29		130.25	130.50	.25	shale	Dark grey, slightly carbonaceous											R2
29		130.50	131.12	.62	sst	1 joint broken stick to rubble, very fine grain, very silty, medium grey.											R3
30		131.12	131.32	.30	sst	As Above, broken stick to rubble.											R3
29		131.32	131.57	.25	cavings												
29		131.57	131.95	.38	sst	As Above, 3 joints											R3
29		131.95	132.15	.20	slst	Dark grey, carbonaceous, plant debris, shaley											R3
29		132.15	132.31	.16	sst/slst	Sandstone - light grey, very fine grain Siltstone - dark grey, slightly carbonaceous											R3
29		132.31	132.73	.42	sst	3 joints, fine grain to very fine grain x-bedded with thin dark grey siltstone bed.											R3
29		132.73	133.70	.97	sst	As above, slightly less silty, 8 joints											R3
29		133.70	134.31	.61	sst	Medium coarse grain, Salt and Pepper, 2 joints, a few dark grey siltstone beds throughout.											R3
30		134.31	135.44	1.13	sst	As above with polished carbonaceous surfaces rubbly base.											R3
30		135.44	136.13	.69	sst	As above calcite lined joints, very rubbly											R3
		136.13	136.90	.77	lost core	In sandstone unit.											
30		136.90	137.77	.87	sst	As above pyrite flecks, very rubbly.											R3
31		137.77	138.04	.31	sst	As above coarser grain (medium - coarse grain) coaly stringers											R4
		138.04	138.40	.36	lost core	In sandstone unit											
31		138.40	139.47	1.07	sst	As above pyrite flecks, 1 cm thick bright coal bands, coarse grain, polished carbonaceous surfaces calcite veinlets, Rubbly at top.											R3

ALL LINEAR UNITS IN METRES

1-98/DR 5 - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*ROD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	REQUIRE ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO						MOIST %		ASH %	V.M. %	FC %	F.S.I.	
								d.f.b.	residual	d.b.	d.b.	d.b.			
31		139.42	139.65	.23	sst									R3	
31		139.65	140.87	1.22	sst/slst									R2 - R3	
31		140.87	141.18	.31	sst									R4	
		141.18	141.40	.22											
32		141.40	141.55	.15	sst									R4	
32		141.55	142.72	1.17	sst									R4	
32		142.72	143.88	1.16	sst									R3	
32		143.88	144.22	.34	sst									R3	
32		144.22	144.49	.27	sst									R3	
31		144.49	145.21	.72	sst									R3	
33		145.21	145.61	.40	sst									R3	
		145.61	146.61	1.00	lost sst										
31		146.61	146.96	.35	sst									R3	
33		146.96	147.28	.32	sst									R4	
		147.28	147.60	.32	lost sst										
33		147.60	148.06	.46	shale									R3	
		148.06	148.20	.14	lost sb										
33		148.20	148.58	.38	sst									R3	
33		148.58	148.84	.26	congl									R4	

ALL LINEAR UNITS IN METRES

1-R&/OR 5 - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: LODGEPOLE
 AREA: SOUTHEAST BRITISH COLUMBIA

HOLE No. 305
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (%)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.		C.V.
										m.r.b.	residual	d.b.	d.b.	d.b.			
34		148.84	149.10	.26	congl	As above.											R4
		149.10	149.30	.20	lost core	Conglomerated.											
34		149.30	149.60	.30	congl	As above											R3
34		149.60	150.69	1.09	sst/slat	Sandstone - fine grain, light grey, siltstone											R3
		150.69	150.90	.21	lost core	dark grey, calcite lined joint surfaces, A.A. Semi-stick.											
34		150.90	151.28	.38	sst/slat	As above with polished carbonaceous joint surfaces.											R3
34		151.28	152.40	1.12	sst	Medium grain, salt and pepper, polished carbonaceous joint surfaces, calcite specks, darker sandstone laminations.											R3
34		152.40	152.57	.17	sst	As above											R3
35		152.57	154.02	1.45	sst	As above											R3
35		154.02	155.46	1.44	sst	As above stick core, dark siltstone lenses small scale x-beds, calcite lining joint surfaces.											R3
35		155.46	156.55	1.09	sst	As above with bright coaly bands (0.5 cm thick) calcite lined fracture surfaces, pyrite flecks.											R3
36		156.55	156.66	.11	shale	Dark grey, carbonaceous											R2
36		156.66	157.29	.63	shale	As above becoming silty at base											R2
36		157.29	158.41	1.12	slat	Dark grey, calcite lined joint surfaces, coaly bands grading into very fine grain sandstone at base.											R3
36		158.41	159.94	1.53	sst	Very fine grain, medium grey calcite lined joints, contains numerous siltstone beds.											R3
36		159.94	160.32	.38	sst/slat	As above											R3
37		160.32	161.10	.78	slat	Dark grey, carbonaceous partings, pyrite specks some very fine grain, sandstone laminations											R3
37		161.10	162.55	1.45	slat	As above stick core											R3
37		162.55	164.12	1.57	slat	As above 1 cm calcite vein in centre											R3
37		164.12	164.36	.24	slat	As above											R3
38		164.36	164.96	.60	slat	As above, becoming sandy toward base											R3

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDR ASSOCIATES HARDNESS CODE
 •RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 305
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No	DEPTH FT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	▲ ANGLE DEG	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS			
		FROM	TO						MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	MOIST %		ASH % d.b.	VM % d.b.		FC % d.b.	F.S.I.	C.V.
											a.r.b.	residual						
38	164.96	166.42	1.46	slst	Sandy, otherwise as above, semi-stick, calcified lined joint surfaces.												R4	
38	166.42	167.68	1.26	slst	As above (sandy) broken and rubblely at base.												R3	
38	167.68	168.22	.54	slst	As above												R3	
39	168.22	169.07	.85	slst	Sandy, carbonaceous plant fragments, disseminated pyrite, carbonaceous in places.												R3	
39	169.07	170.40	1.33	slst	As above, shaley in places, semi-stick.												R3	

ALL LINEAR UNITS IN METRES

F=FB/OR5 - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA							REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a + b	residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.	
39	170.40	171.64	1.24	slst	As above, polished, carbonaceous fracture surfaces, coaly stringers												R3
39	171.64	172.26	0.62	slst	As above becoming sandy at base.												R3
40	172.26	172.74	0.48	ss/slst	Sandstone-light grey, fine grain. Siltstone-dark grey, convolute bedding. Carbonaceous plant fragments, pyrite on fracture surfaces, Calcite lined joints.												R3
40	172.74	174.18	1.44	sst	Very fine grain, light grey, disseminated pyrite on joint surfaces, carbonaceous stringers, polished carbonaceous surfaces, calcite veins. Silty in places.												R3
40	174.18	175.44	1.26	sst	As above carbonaceous plant mat on bedding planes, very silty, broken & rubbley in centre												R3
40	175.44	175.87	0.43	sst.	As above. Load casts.												R3
41	175.87	176.90	1.03	ss/slst	Disseminated pyrite on joint surfaces, broken at top.												R4
41	176.90	178.63	1.73	lost core													
	178.63	180.05	1.42	ss/slst	As above lots of pyrite, broken in centre, some claystone lenses and bands.												R4
41	180.05	181.23	1.18	shale	Silty, disseminated pyrite on joint surfaces, carbonaceous in places, black.												R3
42	181.23	181.45	.22	shale	Black carbonaceous, coaly splits and wisps, some pyrite.												R2
42	181.45	181.61	.16	coal	Shaley, black, very dirty, some bright bands, highly broken, blocky-granular												R3
42	181.61	182.03	.42	coal	As above, broken core, pyritic												R3
42	182.03	182.13	.1	coal	Dull, platey, pyritic, polished surfaces												R2
42	182.13	182.23	.1	coal	Soft, dull with some bright, granular-powdery, pyritic and polished.												S5
42	182.23	182.53	.3	coal	Dull with numerous bright bands "HARD", pyritic, blocky-broken core, semi-stick.				LPD-305 -10	2.94	.52	13.24	16.04	70.72	1.0		R3
42	182.53	182.79	.26	coal	Bright with some dull, hard, semi-stick-broken core, pyritic, 1 joint plan, displays cleat												R1

ALL LINEAR UNITS IN METRES

* R2/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

— FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

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OF 38

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO MAIN	DESCRIPTION (INCLUDE COAL RECOVERY FOR EACH SEAM)	SEAM ANGLE [°]	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO							MOIST %	ASH %	V.M. %	FC %	F.S.I.	C.V.	
										air dry	total					
42	182.79	183.44	.65	coal	Very hard, bright with some vitranite wisps, displays cleat, stick core											R3
42	183.44	183.49	.05	coal	Dull, steel grey, platy, contains bright lenses.											R3
42	183.49	183.54	.05	shale	Dark grey-black, carbonaceous, plant fragments pyrite along bedding planes.											R3 - R4
42	183.54	183.96	.42	coal	Bright pyritic, stick core, displays cleat hard black.											R3
42	183.96	184.35	.39	shale	Coaly, black, bright vitranite bands up to 0.2 cm thick, thin coaly wisps, pyritic, looks polished, carbonaceous plant fragments, stick core, becomes more coaly at base.											R3
42	184.35	184.85	.5	coal	Bright with occasional dull bands, hard stick core, some cleat											R3
42	184.85	184.95	.1	coal	Bright, granular-powdery											S5
42	184.95	185.13	.18	coal	Bright with some dull bands, semi-stick, displays good cleat, pyritic.											R3
42	185.13	185.21	.08	coal	Bright, granular-powdery.			1-PD-305								S5
42	185.21	185.37	.16	coal	Bright, pyritic, good cleat, broken core.			-II	8.04	1.45	13.42	16.78	69.80	1.0		R2
43	185.37	185.61	.24	coal	Bright with very minor dull, stick core, displays good cleat.											R3
43	185.61	185.7	.09	coal	Bright and dull, platy-powdery.											S5
43	185.7	185.87	.17	coal	Bright, hard, displays some cleat											R2
43	185.87	185.99	.12	coal	Bright with some dull, semi-stick, hard.											R1
43	185.99	186.12	.13	coal	Shaley, very coaly shale in top .03 m, bright coal with some dull, hard, pyritic, displays cleat.											R3
43	186.12	186.4	.28	shale	Black very carbonaceous bright coal wisps polished surfaces, becomes less coaly towards base.											R3
43	186.4	186.47	.07	shale	As above, platy.											R3
43	186.47	186.53	.06	coal	Bright with dull, soft, granulated, powdery.											S4
43	186.53	186.59	.06	coal	Bright, hard, displays cleat.											S5

ALL LINEAR UNITS IN METRES

1:RB/OR 5 — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

-RQD — ROCK QUALITY DESIGNATION [%]

FF — FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

FILE No BA-212A
REVISED Nov 1978

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
43		186.59	186.83	.24	coal	Bright, very soft, granular-powdery.											S3
43		186.83	186.85	.02	coal	Bright with some dull, soft and powdery.											S1
43		186.85	187.01	.16	coal	Dull, hard, pyritic, polished surfaces.											R2 - R3
43		187.01	187.28	.27	coal	Bright with minor dull, polished surfaces, cleat, pyrite, steel grey color, stick core.											
43		187.28	187.39	.11	coal	Dull with bright bands, blocky-granular, stick											R1
43		187.39	187.44	.05	coal	Bright, hard cleat, stick core.											R2
43		187.44	187.58	.14	coal	Bright, soft, stick core, granular-powdery.											S5
43		187.58	187.68	.1	coal	Bright with dull bands, hard.											R3
43		187.68	187.81	.13	coal	Bright, displays cleat, polished surfaces, blocky.											S5
43		187.81	187.90	.09	shale	Coaly.											R2
43		187.90	187.93	.03	coal	Bright, pyritic.											R1
43		187.93	188.	.07	coal	Dull with bright bands, polished surfaces, broken.											R2
43		188.	188.06	.06	coal	Dull with bright bands, displays cleat.											R3
43		188.06	188.81	.75	coal	Bright, hard, displays cleat, semi-stick.											R3
43		188.81	188.91	.1	coal	Bright, polished, cleat, some pyrite, soft.											S5
43		188.91	189.24	.33	shale	Dark grey-black, carbonaceous, coaly at base.											R3
44		189.24	189.46	.22	shale	As above, broken core.											R3
44		189.46	190.05	.59	coal	Bright with dull, soft granular to powdery, pyritic in places, occasional very bright bands.											S5
44		190.05	190.12	.07	coal	Bright with dull, very soft, powdery.											S1
44		190.12	190.24	.12	shale	Black, carbonaceous, pyritic, blocky.											R3
44		190.24	190.34	.10	coal	Bright, granular											S5
44		190.34	190.64	.3	coal	Very soft, powdery, bright with dull, granular to powdery.											S1
44		190.64	190.73	.09	coal	Bright, hard, some polished surfaces.											R2

ALL LINEAR UNITS IN METRES

*R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.		C.V.	
										a.r.b.	residual							
44	190.73	190.77	.04	coal	Very soft, powdery, dull with bright flecks.												S1	
44	190.77	191.15	.38	coal	Bright polished, soft, blocky to powdery becomes dirtier towards base.												S2	
44	191.15	191.24	.09	coal	Bright, polished, blocky.												S5	
44	191.24	191.29	.05	coal	Soft, bright, granular to powdery												S1	
	191.29	192.05	.76	lost coal														
44	192.05	192.17	.12	coal	Moderately hard, polished, bright, stick-core, flakey.												S5	
44	192.17	192.48	.31	coal	Bright, soft, granular to powdery, some harder bands.												S2	
44	192.48	192.72	.24	coal	Soft, dull with bright flecks, powdery.												S1	
44	192.72	192.85	.13	coal	Bright, polished, granular to powdery.												S4	
	192.85	192.95	1.1	lost coal														
44	193.95	194.03	.08	coal	As above													
44	194.03	194.16	.13	shale	Very coaly, black, abundant bright coal wisps, semi-stick core.			LPD-305 -11				8.04	1.45	13.42	16.78	69.80	1.0	R3
44	194.16	194.41	.25	coal	Bright with occasional dull, very hard stick core, abundant polished surfaces.													R3
44	194.41	194.53	.12	coal	Bright, polished, soft.													S5
44	194.53	194.68	.15	coal	Bright, polished, very soft, granular to powdery.													S4
44	194.68	194.79	.11	coal	Bright, highly polished, flakey, stick-core.													R1
44	194.79	195.07	.28	coal	Bright, soft, granular to powdery, polished													S4
	195.07	195.35	.28	lost coal														
45	195.35	195.70	.35	coal	Bright, soft, flakey, granular to powdery, polished surfaces.													S4 - S5
45	195.70	195.76	.06	coal	Dull, abundant polished surfaces, platey.													S5
45	195.76	195.89	.13	coal	Bright, platey, soft, granular to powdery.													S5
45	195.89	196.26	.37	shale	Dark grey, carbonaceous, abundant polished surfaces, soft plant fragments.													R1
45	196.26	196.42	.16	coal	Bright abundant polished surfaces, granular to powdery.													S5

ALL LINEAR UNITS IN METRES

1 = R&/O/S — GOLDEN ASSOCIATES HARDNESS CODE

• ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS 1
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.s.b. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.	
45	196.42	196.69	.27	coal	Bright, hard, blocky to granular, polished surfaces.											R1
45	196.69	197.19	.5	shale	Black, carbonaceous, abundant bright coaly wisps, blocky to granular.											R2
45	197.19	197.46	.27	coal	Very soft, bright, powdery.											S1
45	197.46	198.09	.63	coal	Bright, polished, granular.											S2
45	198.09	198.33	.24	coal	Soft, bright, polished, flakey, granular to powdery.											
45	198.33	198.85	.52	coal	Bright, polished, granular to powdery											S2
	198.85	199.65	.8	lost coal												
45	199.65	200.09	.44	coal	Bright, polished, flakey, granular to powdery.											S2 - S3
45	200.09	200.18	.09	coal	Stick core, highly polished, bright and dull.			LPD-305								S5
46	200.18	200.40	.22	coal	Dull with bright flacks, very soft, compact.											S1
	200.40	200.75	.35	lost core						8.04	1.45	13.42	16.78	69.80	1.0	
46	200.75	201.48	.73	coal	Bright, highly polished, soft, compact, granular to powdery.											S1
46	201.48	201.73	.25	coal	Bright, polished, granular to powdery.											S2
46	201.73	201.83	.1	coal	Very soft, dull and bright.											S1
46	201.83	202.01	.18	coal	Bright, highly polished, flakey, granular to powdery.											S4
46	202.01	202.33	.32	coal	Bright, highly polished, flakey, granular.											S4
46	202.33	202.47	.14	coal	Dull with bright flecks.											S1
	202.47	203.05	.58	lost												
46	203.05	203.11	.06	coal	Bright, moderately hard, blocky to powdery.											S5
46	203.11	203.19	.08	coal	Bright, displays some cleat, polished.											R1
46	203.19	203.78	.59	coal	Bright, polished, moderately soft, blocky to granular.											S4
46	203.78	203.85	.07	coal	Dull with bright, very soft, powdery.											S1
46	203.85	204.09	.24	coal	Bright, polished, platy, blocky to granular.											S4
46	204.09	204.22	.13	shale	Black, carbonaceous, platy.											R2

ALL LINEAR UNITS IN METRES

1 - R & OR S - GOLDER ASSOCIATES HARDNESS CODE

*ROD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ DIPPING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA					REMARKS*	
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST % a r. b. residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
46		204.22	204.33	.11	coal	Bright, platy, granular to powdery.										R1
46		204.33	204.67	.34	shale	Black, carbonaceous, coaly in spots, polished surfaces.										R2
46		204.67	205.0	.33	shale	Dark grey, carbonaceous, plant fragments, stick-core.										R3
47		205.0	205.8	0.80	siltst	Dark grey, with very fine grain light grey sandstone interbeds some claystone bands 1 cm thick, Coaly stringers, carbonaceous plant fragments, coal bands, pyrite flecks on joint surfaces.										R3
47		205.8	206.08	0.28	siltst	Dark grey as above without sandstone interbeds										R3
47		206.08	206.21	0.13	siltst	As above.										R3
47		206.21	206.45	0.24	coaly sh	Black, Rubbly, hard, blocky, Bright coal bands.										R3
47		206.45	206.51	0.06	coal	Bright with dull bands, some pyrite flecks blocky to powdery.										R5
47		206.51	206.61	0.10	siltst	As above with pyrite on fracture surfaces.										
47		206.61	206.63	0.02	coal	As described above										
47		206.63	206.96	0.33	siltst	As above										
		206.96	207.69	0.73	lost core	In siltstone/coal unit.										
47		207.64	207.80	0.16	coal	As above hard, powdery at top.										R5-R2
47		207.80	208.10	0.30	coal	With 2 cm. sandstone bed at top, bright, displays clear, pyrite flecks			LPD-305 -15	3.92	.56	20.76	14.18	55.06	1.0	R3
47		208.10	209.07	0.97	sst	Very fine grain, light grey, silty at top, calcite filled fractures, coaly stringers,										R4
		209.17	209.15	0.08	bar sst	carbonaceous plant material on fracture surface, pyrite flecks, calcite lining joint surfaces										
48		209.15	209.34	0.19	shale	Silty at top, polished joint surfaces										R3
48		209.34	210.88	1.54	shale	As above										R3
48		210.88	211.38	0.50	shale	As above, Rubbly at base, becoming sandy at base.										R3
		211.38	211.90	0.52	lost sh											

ALL LINEAR UNITS IN METRES

† - R & OR S - GOLDER ASSOCIATES HARDNESS CODE
 + RQD - ROCK QUALITY DESIGNATION [%]
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
										o.r.b.	residual	d.b.	d.b.	d.b.		
48	211.90	212.46	0.56	sst	Light grey, very fine grain, calcite filled fractures, rubbly at base, pyrite flecks											R4
49	212.46	212.63	0.17	shale	Powdered and rubbly at top											R2
49	212.63	213.77	1.14	shale	Some fine grain sandstone bands, brecciated, black, pyrite flecks											R2
49	213.77	214.18	0.41	shale	As above becoming silty, rubbly and broken at top											R2
49	214.18	214.46	0.27	sst	Very fine grain, light grey, calcite lining joint surfaces, pyrite lining joints surfaces											R4
49	214.46	214.68	0.22	shale	Silty, As above brecciated at base, carbonaceous polished joint surfaces											R2
49	214.68	214.80	0.12	shale	Black, As above broken and powdered at top.											R2
49	214.80	215.71	0.91	sltstn/sst	Sandstone - very fine grain, light grey. Siltstone - dark grey, calcite filled fractures, shaley, calcite lining joint planes											R3
	215.71	216.40	0.69	lost core	Pyrite flecks on joint planes.											
49	216.40	216.92	0.52	sltstn/sst	Broken core as above, finely laminated											R3
50	216.92	217.04	0.12	shale	Silty, black, coaly bands, pyrite on fracture surfaces											R3
50	217.04	217.71	0.67	sst/sltstn	As previously described	31°										R3
50	217.71	217.79	0.08	shale	As above, Highly broken.											
	217.79	218.00	0.21	lost core	Since last marker block.											
50	218.00	218.40	0.40	sst/sltstn	As above with 6 cm. silty shale bed near top.											R3
50	218.40	219.25	0.85	breccia	Shale, silty in places.											
	219.25	219.50	0.25	lost core	Since last marker block											
50	219.50	219.61	0.11	sst/sltst/sh	Rubble, pyrite flakes, ground core											
50	219.61	220.03	0.42	shale	Black, silty, pyrite flecks on joint surfaces, calcite on joint surfaces. Broken and											R3
	220.03	220.40	0.37	lost core	brecciated near base.											
50	220.40	220.60	0.20	sst/sltst/sh	rubble, ground core, powdered at base											
	220.60	220.70	0.10	lost core												

ALL LINEAR UNITS IN METRES

†:RB/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	SOUTHEAST BRITISH COLUMBIA

HOLE No.	
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
50		219.50	219.61	0.11	ssst/altst/sh	Pyrite flakes. Ground core										
50		219.61	220.03	0.42	shale	Black, silty, pyrite flakes on joint surfaces, calcite on joint surfaces.										R3
		220.03	220.40	0.37	lost core	broken & rubbly near top, brecciated near base.										
50		220.40	220.60	0.20	ssst/altst/sh	Rubble, ground core, powdered at base										
		220.60	220.70	0.10	lost core											
50		220.70	220.76	0.06	ssst/altst/sh	Rubble as above.										
50		220.76	221.34	0.58	sltstn/sh	Breccia.										
51		221.34	221.64	0.30	sltst	Rubble, highly broken										R3
		221.64	221.90	0.26												
51		221.90	222.75	0.85	ssst/sltst	Interbedded, very thick siltstone bands, sandstone is light grey, fine grain.	23°									R3
		222.75	223.00	0.25	lost core	siltstone is dark grey, plant fragments										
51		223.00	223.52	0.52	shale	silty, dark grey, contains 4 cm. thick bright coal band at centre										R3
51		223.52	224.28	0.76	ssst/sltst	Sandstone is light grey, fine grain, mud drapes, siltstone is dark grey	35°									R3
51		224.28	225.23	0.95	sltst	With very fine grain sandstone interbeds, siltstone predominates, sandstone is light grey, siltstone is medium - dark grey, 2 joints, irregular bedding	32°									R3
51		225.23	225.46	0.23	shale	Black, carbonaceous, abundant plant fragments & coaly partings, contains fine grain sandstone clasts & lenses										R2
51		225.46	225.74	0.28	ssst	Medium grain, salt & pepper, light grey with numerous coaly partings & lenses										R3
51		225.74	225.88	0.14	ssst	As above.										
52		225.88	227.10	1.22	breccia	Siltstone/sandstone as above.										
52		227.10	227.28	0.18	breccia	As above.										
52		227.28	227.82	0.54	Sst	Fine grain, salt & pepper, dark grey, cut by brecciated zones										
		227.82	228.10	0.28	lost core											

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
52	228.10	229.28	1.18	SST	brecciated, fine to very fine grain, dark gray at top and light gray at base, finely laminated											R3
52	229.28	230.38	1.10	SLST/SS	interbedded, siltstone is dark gray, sandstone is fine grain, light gray, thinly bedded, brecciated at top											R3
53	230.38	230.44	.06	SS/SLST	as above											
	230.44	230.47	.03	Lost	core											
53	230.47	231.70	1.23	SST	fine grain to very fine grain, light gray alternating with dark gray, semi-stick core	10°										R3
53	231.70	231.80	.10	SST	very fine grain to siltstone											R3
53	231.80	231.93	.13	SST	breccia, medium grain, gouge zone											
	231.93	232.20	.27	Lost	core - brecciated sandstone											
53	232.20	232.29	.09	SST	medium grain, salt and pepper, medium gray, highly broken											
	232.29	232.51	.22	Lost	sandstone											
53	232.51	233.20	.69	SST	medium grain, light gray, numerous coaly wisps and partings, very coaly in upper .25 m, calcite lining joint planes											R3
53	233.20	233.30	.10	SST	as above											
53	233.30	234.33	1.03	SLTST	dark gray, semi-stick core, 3 joint sets, rubbly											R3
	234.33	234.50	.17	Lost	core											
53	234.50	234.82	.32	SLTST	as above, with sandstone clasts and lenses, sandstone salt & pepper, medium grained											
54	234.82	235.63	.81	SLTST	as above, with sandstone											R3
54	235.63	236.15	.52	SST	medium grained, salt & pepper, dark gray fresh light gray on surface, calcite-lined joints, rubbly at top, semi-broken											R4
54	236.15	237.55	1.40	SST	as above, broken core											
	237.55	237.70	.15	Lost	core											

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 *ROD — ROCK QUALITY DESIGNATION (1%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: LODGEPOLE
 AREA: _____

HOLE No. 305
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	F.C. %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
54		237.70	238.43	.73	SST	as above										
55		238.43	238.98	.55	SST	as above, slightly calcareous along broken surfaces										
55		238.98	239.52	.54	SST	as above, calcite along joint planes, very wet and soft in lower 0.20 metres										
		239.52	239.90	.38	Lost	core										
55		239.90	240.65	.75	SST	as above, numerous bright coaly partings and lenses										R3
		240.65	241.00	.35	Lost	core										
55		241.00	242.03	1.03	SST	as above, some coaly partings, broken core										R3
55		242.03	243.00	.97	SST	as above, some coaly partings and lenses, calcite-filled fractures										
56		243.00	243.34	.34	SST	as above, wet and broken										
		243.34	243.50	.16	Lost	core										
56		243.50	244.20	.70	SST	as above, possible gouge zone										
		244.20	244.40	.20	Lost	core										
56		244.40	245.79	1.39	SST	as above, semi-stick	36°									R3
		245.79	245.90	.11	Lost	core										
56		245.90	246.76	.86	SST	as above, broken core										
		246.76	247.10	.34	Lost	core										
56		247.10	247.59	.49	Shale	black, 1 joint set, gouged in upper 0.17 metres										R2
57		247.59	248.63	1.04	Shale	as above, grading into siltstone at base, stick core with 0.15 m gouge zone near base										
57		248.63	249.36	.73	SST	extremely rubblely at top, medium-grained, salt & pepper, dark gray fresh, light gray at surface, calcite-lined joint planes, very broken core										
		249.36	249.90	.54	Lost	core										

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 •RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 305
 CONTINUED

CORF. & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. / residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
57	249.90	251.25	.35	SLST/SS	sandstone light gray, fine grained; siltstone is medium gray, siltstone is greater than sandstone, semi-stick to broken core, calcite-lined fractures	29°										R3
	251.25	251.40	.15	Lost	core											
57	251.40	252.25	.85	SLST/SS	as above											
58	252.25	252.90	.65	SLST/SS	as above											
58	252.90	254.40	1.50	SLTST	minor sandstone beds, dark gray to black, semi-stick to broken core											
	254.40	254.60	.20	Lost	core											
58	254.60	255.52	.92	SS/SLST	sandstone light gray, fine-grained, siltstone medium to dark gray, finely interbedded, calcite-lined joint planes, broken core											
58	255.52	256.42	.90	SS/SLST	as above, broken core											
59	256.42	257.18	.76	SLST/SS	siltstone to fine grain sandstone, broken, brecciated with gouge on bedding planes, rubblely at base	27°										R2
	257.18	257.38	.20	Lost	core											
	257.38	257.96	.58	SLST/SS	siltstone/sandstone as above, siltstone is medium-dark gray, massive, sandstone is light gray, finely laminated, 4 calcite-lined joints broken and rubblely base	18°										
	257.96	258.13	.17	SLST/SS	siltstone/sandstone as above, grades to siltstone below 2 calcite-lined joints subparallel to core axis											R3
	258.13	258.71	.58	SLTST	siltstone medium to dark gray, massive, bedding indistinct, seven joints, calcite-lined at 20° to core axis											
	258.71	258.76	.05	SST	sandstone band at base											
	258.76	258.96	.20		breccia zone, compact gouge with fragments of sandstone and siltstone, sandstone fine grain, siltstone dark gray, massive											
	258.96	259.20	.24	SLTST	dark gray, carbonaceous, bedding indistinct, 4 clean joints											R2

ALL LINEAR UNITS IN METRES

1:RB/OR/S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQ — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	

HOLE No.	305
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	VM. % d.b.	FC. % d.b.	F.S.I.	C.V.	
59	259.20	259.32	.12	SLTST	as above, broken, rubbly											
59	259.32	259.60	.28	SLTST	as above, few fine grain sandstone beds, 1 clean joints, irregular, semi-stick	34°										R3
59	259.60	260.02	.42	SS/SLST	interbedded sandstone/siltstone, sandstone beds appear disturbed by bioturbation, 1 joint with fine sheen calcite	29°										
59	260.02	260.23	.21	SLTST	as previously described											
59	260.23	260.42	.19	SLTST	as above, 2 clean fractures smooth planes											
59	260.42	260.94	.52	SLST/SS	interbedded siltstone/sandstone, finely laminated, highly fractured, but compact, some thin fissile layers, fractures show evidence of small scale movement, sandstone is fine to medium grain, light gray, siltstone is dark gray, carbonaceous, shaly											
60	260.94	261.06	.12	SLST/SS	rubble, as above											
60	261.06	261.26	.20	Lost	core											
60	261.26	262.06	.80	SLST/SS	as previously described, semi-stick, gouge at base	25°										
60	262.06	262.09	.03		gouge zone											
60	262.09	262.58	.49	SST	fine to medium grain, salt & pepper, brecciated at top, highly fractured at base, fractures calcite-lined											R2
60	262.58	262.61	.03	Coal	coal split, soft, powdery, polished											
60	262.61	262.69	.08	SST	breccia, sandstone, ground and compact											
60	262.69	262.86	.17	SS/SLST	breccia, sandstone, few dark gray siltstone bands, sheared, ground compact, gouge at base											
60	262.86	263.32	.46	SST	sandstone is fine to medium grain, few silty bands, highly fractured bedding over steepened bedding truncated by fractures	44°										
60	263.32	263.72	.40	SST	sandstone, gouge, core ground, compact, with fragments											R1
60	263.72	263.80	.08	SST	fine to medium grain, massive, fractured and broken											R3

ALL LINEAR UNITS IN METRES

† - RB/OR S - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

-RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGEPOLE
AREA	

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	VM % d.b.	FC % d.b.	F.S.I.	C.V.	
60		263.80	263.84	.04	SST	gouge, as above, some dark gray to black coaly material										
60		263.84	264.20	.36	Lost	core										
60		264.20	264.89	.69	SST	fine to medium grain, dark gray silty matrix semi-stick, 4 irregular clean fractures										R2-R3
60		264.89	265.21	.32	SST	core ground, soft compact										
61		265.21	265.25	.04	Shale	shale - black, carbonaceous, massive										R2
61		265.25	265.54	.29	SST	breccia as previously described										
61		265.54	265.64	.10	Lost	core										
61		265.64	265.82	.18	Shale	highly fractured to brecciated compact dark gray to black, massive										R2
61		265.82	265.99	.17	Shale	as above										
61		265.99	266.69	.70	Shale	as above, semi-stick fracture zone in centre, fractures polished, clean smooth, 3 joints subparallel core axis, polished, becoming silty										R2
61		266.69	267.20	.51	Shale	as above, 7 polished fractures										R2
61		267.20	267.34	.14	Shale	as above, broken and brecciated, fragments polished, clean, non-calcareous										R2
61		267.34	267.73	.39	SLST/SH	interbedded siltstone and shale, finely laminated, fissile, 3 irregular clean joints	24°									R2
61		267.73	267.81	.08	SST	fine grain, light gray, fracture set parallel to core axis, one clean polished joint										R2
61		267.81	267.94	.13	Shale	silty, very dark gray, carbonaceous, finely laminated, broken at base, abrupt lower contact	21°									R2
61		267.94	268.16	.22	Lost	core										
61		268.16	268.90	.74	SST	medium-coarse grain, salt & pepper, massive, 3 calcite-lined joints, 4 clean joints, some steep crossbeds, light to medium gray, semi-stick	25°									R3
62		268.90	270.25	1.35	SST	coarse-medium grain at top, fine to medium grain towards base, coaly wisps along bedding, semi-stick, broken at base, 12 clean irregular joints	27°									R4

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 +RQ — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.		C.V.	
62		270.25	270.59	.34	SST	as above becoming coarser grain											R3
62		270.59	270.63	.04	SST	abundant coaly material, badly broken, as above, lithic											
62		270.63	270.86	.23	SST	as above, 4 coal-lined fractures, polished											R3
62		270.86	270.91	.05	Shale	dark gray black, coaly											S3
62		270.91	271.51	.60	SST	massive, coarse-medium grain, coaly interbeds, 3 coal-lined fractures, coaly partings, polished indistinct bedding											R3
62		271.51	271.53	.02	Coal	coal split, fragmental, polished											S2
62		271.53	271.68	.15	SST	as previous, rubblely at base											
62		271.68	271.78	.10	lost	core											
62		271.78	272.22	.44	SST	as above, rubblely											
62		272.22	273.32	1.10	SST	medium to coarse grain, salt & pepper, massive, some indistinct crossbeds, semi-stick, 3 joints subparallel to core axis, clean, 2 joints calcite and coal-lined	34°										R4
63		273.32	273.88	.56	SST	fine to medium grain, coarse at base, coaly splits, 4 coaly fractures											
63		273.88	273.90	.02	Coal	brittle, fragmented, polished											
63		273.90	274.24	.34	SST	as above, bedding indistinct, 3 coal-lined fractures											R3
63		274.24	274.77	.53	SST	coarse to medium grain, cleaner than above core, some poorly defined bedding, 3 coal-lined joints, 1 calcite-lined fracture, rubblely at base	21°										R3
63		274.77	274.87	.10	SST	fine to medium grain, coaly, fractured, broken											
63		274.87	275.07	.20	SST	as above, 2 coaly polished fractures											
63		275.07	275.61	.54	SST	as above, less coaly, harder, 3 siltstone clasts transported, rip-up clasts 3 coal-lined fractures, subparallel to bedding	29°										
63		275.61	275.64	.03		gouge											
63		275.64	275.96	.32	SST	coarse to medium grain, few coaly wisps, 3 clean irregular fractures											R3-R2

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT: LIDGEPOLE
 AREA: _____

HOLE No. 305
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. / residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
63		275.96	276.00	.04	Coaly	gouge, coaly											
63		276.00	276.33	.33	SST	as above, broken, abundant coal on fracture planes, polished											
63		276.33	276.48	.15	Lost	core											
63		276.48	276.57	.09	SST	as above											
63		276.57	277.77	1.20	SST	medium grain, salt & pepper, light to medium gray, semi-stick, 8 clean joints, 1 coaly fracture parallel to bedding, polished, rubblely in centre, some ground core	23°										R4
64		277.77	277.97	.20	Lost	core											
64		277.97	279.47	1.50	SST	as above, faint coaly sheen on fractures, stick core											R4
64		297.47	280.95	1.48	SST	as above, 5 fractures parallel to bedding, coal-lined, polished, 2 clean joints subparallel to core axis, rubblely at base	22°										
65		280.95	282.45	1.50	SST	as above, broken to semi-stick, 7 joints, coaly, polished, 1 calcite-lined fracture	23°										
65		282.45	283.02	.57	SST	as above, 4 calcite veinlets, 3 fractures lined with calcite											
65		283.02	284.02	1.00	SST	as above, few coaly wisps, stick, 2 joints: 1 clean, 1 coal-lined											
65		284.02	284.09	.07	SST	more coaly than above unit, 2 joints subparallel to bedding, some crossbedding	27.7										R3
65		284.09	285.56	1.47	SST	as previously described, semi-stick, 4 joints calcite-lined, subparallel to core axis, becomes more massive towards base	24°										
65		285.56	285.72	.16	Shale	medium gray, massive, 1 polished fracture											R2
66		285.72	286.38	.66	SLST/SS	interbedded with argillaceous clasts. siltstone is medium gray, massive, sandstone is light to medium gray											R2
66		286.38	287.09	.71	SST	as previously described, semi-stick to broken, fine to medium grain											R3
66		287.09	288.49	1.40	SST	becoming finer grain, laminations becoming distinct, broken to semi-stick, rubblely at base											R3

ALL LINEAR UNITS IN METRES

1:R&DRS — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 305
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT: LODGEPOLE
 AREA: _____

HOLE No. 305
 CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		WIDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
66		288.49	288.69	.20	Lost	core											
66		288.69	290.09	.40	SST	as above, 9 clean fractures parallel to core axis, rubblely at base											
66		290.09	290.59	.50	SST	rubblely at top, same as above											
67		290.59	291.36	.77	SST	fine to medium grain with a few siltstone and coal interbeds, bedding well developed, stick core, 1 clean joint	18°										R3
67		291.36	291.69	.33	SST	medium to coarse grain, broken at base, 2 fractures with gouge, becoming massive											
67		291.69	292.39	.70	SST	Lost core											
67		292.39	293.14	.75	SST	as above, semi-stick to broken											R3
67		293.14	293.34	.20	SST	as above with coaly splits highly fractured											
67		293.34	294.36	1.02	SST	as above, badly broken in coaly zones, 1 fracture subparallel to core axis, 10 fractures parallel to bedding, coal-lined and polished											R3
67		294.36	295.49	1.13	SST	fine to medium grain, salt & pepper, clean well bedded, 5 calcite-lined joints	24°										R4
67		295.49	297.06	1.57	SST	as above, stick to semi-stick, 3 calcite-lined fractures, 4 clean smooth joints	23°										
68		297.06	298.26	1.20	SST	as above becoming coarser grain, stick core at top, broken at base, 1 clean joint	25°										
68		298.26	298.39	.13	SLST/SS	interbedded, finely laminated, some coaly wisps, broken at base and top											R2
68		298.39	298.65	.26	SST	fine to medium grain, salt & pepper, light and dark gray bands	24°										R3
68		298.65	299.32	.67	SST	as above, broken at top, calcite on fracture planes	26°										R3
68		299.32	299.62	.30	Shale	silty, dark gray, carbonaceous, cut by 4 calcite-lined fractures, massive											R2
68		299.62	299.82	.20	SST	breccia											
68		299.82	300.30	.48	Lost	core											
69		300.30	301.22	.92	SST	brecciated, salt & pepper, medium to coarse grain, ground core with .3 solid core near centre											

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE
 *ROD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. 305
 CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	

HOLE No.	305
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %/V.M. %		FC %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
69		301.22	301.42	.20	Lost	core										
69		301.42	302.29	.87	SST	as above, rubble at top, some coaly wisps, shaly at base	24°									R3
69		302.29	303.20	.91	Shale	some silty bands, medium to dark gray, massive, becoming increasingly silty at base										R3
69		303.20	303.37	.17	SST	fine grain, light gray, finely laminated, abrupt lower contact, stick core	25°									
69		303.37	303.86	.49	SLIST	with a few gray sandstone beds, siltstone is dark gray to black, carbonaceous at base										R3
70		303.86	305.43	1.57	SLIST	with sandstone beds and a few coaly specks										R3

ALL LINEAR UNITS IN METRES

1:RB/OR S — GOLDR ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	305
CONTINUED	

COAL & COAL CORE DESCRIPTION

PROJECT	LOGGERS	R - McLATCHIE
AREA	S.E. B.C.	

DATE	BEGIN	AUGUST 2, 1980
	END	

HOLE No.	LPD-306	PAGE 1
		OF 30

HOLE PARTICULARS

LOCATION	LODGEPOLE	
	S.E. B.C.	
ELEVATION		HOLE BEARING (AZ) [*]
TOTAL DEPTH	293.93	HOLE ANGLE (°) [*] 90°

LOGGING

LOGS RUN	Gamma/Density/Cal/Son
LOGGED BY	Roke
OTHER TESTS	Piezometer

COAL CORING PERFORMANCE

TOTAL	CORE DIAMETER	H.Q.
	CORE RECOVERED	262.09
	LENGTH CORED	290.94
	CORE RECOVERY	90 %

EXAMINATION

LOG USED	Gamma Density
No. OF SEAMS SAMPLED	
EXAMINER(S)	H.K.
DATE	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS [†]
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
1		2.99	3.14	.15	Shale	rubble, medium gray, carbonaceous										R3
		3.14	3.27	.13	Breccia	shale										
		3.27	3.40	.13	Shale	medium gray with carbonaceous plant fragments, silty layers, semi-stick										
1		3.40	3.67	.27	Shale	as above becoming silty at base, broken to semi-stick										
1		3.67	4.42	.75	SLTST	finely laminated, medium to dark gray bands, bedding is carved and indistinct, may be bioturbated, very slightly calcareous	27°									R2
1		4.42	4.62	.20	SS/SLST	sandstone very fine grain, light gray, calcareous, siltstone is dark gray, massive and carbonaceous										
1		4.62	5.02	.40	SS/SLST	as above, wavy bedding, stick core, 1 joint coaly, polished, medium-gray	30°									
1		5.02	5.17	.15	SLTST	medium gray, massive R3										
1		5.17	5.33	.16	Shale	massive, medium gray, carbonaceous										
1		5.33	5.43	.10	Shale	breccia										
1		5.43	5.73	.30	Lost	core										
1		5.73	6.60	.87	Shale	with silty bands, brecciated at top, stick to semi-stick at base, 3 calcite-lined fractures										R3
2		6.60	7.31	.71	Shale	some calcite micro-veinlets										R3
2		7.31	7.77	.46	SLST/SS	siltstone is very fine grain, sandstone is medium to dark gray - indistinct banding, mostly massive, 3 calcite microveinlets - 1 clean joint, stick core	26°									R3-R4
2		7.77	9.07	1.30	SLTST	some shale splits, stick core, 1 polished coaly split	24°									R3
2		9.07	10.46	1.39	SLTST	as above, rubbly at base, 2 calcite-lined fractures	23°									R4

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

▲ ANGLE MEASURED FROM CORE AXIS

† : R &/OR S — GOLDR ASSOCIATES HARDNESS CODE

* ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LPD-306
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CORE & COAL CORE DESCRIPTION

PROJECT	LONGBOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.		C.V.
										w.r.b.	residual	d.b.	d.b.	d.b.			
3		10.46	10.53	.07	SLTST	as above											
3		10.53	12.11	1.58	SLTST	with very fine grain sandstone bands, bedding is vague, some irregular calcite stringers, 2 calcite-filled fractures, evidence of burrowing, becoming increasingly sandy at base, stick core.	28										R3
3		12.11	13.63	1.53	SLST/SS	interbedded - mildly calcareous, bedding disturbed by burrowing, 4 calcite-lined joints, sandstone very fine gray, medium gray - siltstone massive, dark gray.	23										R3
3		13.63	14.10	.47	SLST/SS	as above, 2 calcite-lined joints	24										
4		14.10	14.93	.83	SLTST	dark gray, massive, hard, a few dark shale bands, bedding indistinct, 2 calcite-lined joints at base.	31										R3
4		14.93	15.26	.33	SST	with some dark gray silty bands, semi-stick, medium gray - very fine grain to fine grain, burrowing evident	28										R4
4		15.26	16.74	1.48	SST	fine to very fine grain with some small silty bands, well bedded, light to medium gray, 3 clean joints; calcareous	26										R4
4		16.74	18.29	1.55	SST	as above											
5		18.29	19.39	1.10	SST	as above with a few dark gray carbonaceous shaley bands, 1 calcite-lined fracture, 3 coaly splits subparallel to bedding											R4
5		19.39	19.81	.42	SLST/SS	interbedded with very fine laminations, with coal split along bedding, fissile at base											R2-R3
5		19.81	21.26	1.45	SLST/SS	as above, becoming wavy bedded and more sandy towards base, 3 calcite-lined fractures, semi-stick	24										R3
6		21.26	22.54	1.28	SLST/SS	as above											
6		22.54	23.34	.80	SLST/SS	as above, light to dark gray with coaly splits, finely laminated, 3 calcite-lined joints	21										R3
6		23.34	23.68	.34	SST	fine to medium grain, light gray, hard and massive, with dark gray carbonaceous silty and shaley rip-up clasts, calcareous											R4
6		23.68	24.14	.46	SST	as above, with no mud clasts, stick core, no apparent bedding											R4

ALL LINEAR UNITS IN METRES

†:R#/OR \$ — GOLDR ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E., B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
6		24.14	24.19	.05	SST	as above											
6		24.19	25.74	1.55	SST	as above but with clasts, clasts appear to be aligned with long axis parallel to bedding, polished coal along bedding at base.	32										R4
6		25.74	26.79	1.05	SST	fine to medium grain, massive, light gray salt and pepper, with coaly splits along bedding planes, cut by 4 calcite-lined fractures, calcareous	31										R3
7		26.79	26.89	.10	SST	as above, stick core, coaly at base	30										R4
7		26.89	27.00	.11	Lost	shale											
7		27.00	27.11	.11	Coal	shaley in parts, powdery-fragmented, polished, bright and dull - compact			1	20% Recovered							S2
										5.92	1.83	12.27	18.27	69.46	8.0		
		27.11	27.80	.69	Lost	core - coal											
7		27.80	28.80	1.00	Shale	dark gray to black, carbonaceous, massive, broken at top, semi-stick at base											R3
7		28.80	29.60	.80	Shale	as above with some wispy silty layers, 1 calcite stringer at base, broken	33										R3
7		29.60	29.82	.22	Coal	fragmented - compact - dull with bright, polished			2	50% Recovered							S2
										9.61	6.08	1.27	19.59	73.14	8.0		
7		29.82	30.10	.28	Lost	core - coal											
7		30.10	30.80	.70	Shale	silty in places, carbonaceous with abundant plant fossils along bedding planes	29										R3
7		30.80	31.18	.38	Shale	as above with bright coaly parting in fracture; evidence of soft sediment deformation	34										R2-R3
7		31.18	31.90	.72	Shale	with 2 coaly splits and coaly wisps throughout, becoming silty at base, broken to semi-stick, dark gray to black, coal splits are polished	38										R2
8		31.90	32.95	1.05	Shale	becoming silty at base, dark gray, carbonaceous clean, stick core, 3 calcite-lined fractures, coaly at base	31										R3
		32.95	33.15	.20	Lost	core											
		33.15	33.22	.07	Rubble	coaly - sandstone very fine grain, polished broken fragments											

ALL LINEAR UNITS IN METRES

1-RB/ORS - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC. % d.b.	F.S.I.	C.V.		
8		33.22	34.04	.82	Shale	dark gray and carbonaceous at top, silty at base	33										R3
8		34.04	34.79	.75	SST	fine to medium grain, sandstone - dark gray at top, light to medium gray at base - R3 - calcareous	32										R3
8		34.79	36.40	1.61	SST	as above, stick core, 1 clean joint, becomes finer grain with a few silty bands, bedding oversteepened at base	33										
9		36.40	36.90	.50	SST	as above, stick core, no fractures, calcareous	39										R4
9		36.90	37.30	.40	SS/SLST	medium gray - interbedded - poorly bedded to massive, 2 calcite-lined fractures, semi-stick	31										R3
9		37.30	37.90	.60	SST	as previously described											R4
9		37.90	38.07	.17	SLST	medium - dark gray, massive, moderately calcareous											R4
9		38.07	39.55	1.48	SST	fine to very fine grain with a few dark gray silty layers, well bedded with some cross-bedding, 3 polished coaly splits at base, bedding top-33, middle-43, base-37											R3
9		39.55	40.06	.51	SST	as above, stick core											R4
10		40.06	40.95	.89	SST	fine to medium grain, light gray, massive, salt and pepper, 3 calcite-lined fractures, some coaly wisps on bedding plane	35										R4
10		40.95	41.11	.16	SST	fine to medium grain, finely laminated with abundant coaly wisps											
10		41.11	42.71	1.60	SST	as above becoming massive with coaly specks, 3 clean joints, moderately calcareous	31										R4
10		42.71	43.97	1.26	SST	as above, calcite fracture and coal at base	37										
10		43.97	44.00	.03	Rubbly	sandstone with coaly surfaces polished											
10		44.00	44.26	.26	SST	as above, becoming coarser grained, some irregular calcite stringers											R4
10		44.26	44.42	.16	SST	as above, dark gray, broken and rubbley, abundant coal specks											
10		44.42	44.62	.20	Lost	core											

ALL LINEAR UNITS IN METRES

† RR/OR5 - GOLDR ASSOCIATES HARDNESS CODE

• RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS†	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	P.S.I.	C.V.		
10		44.62	45.10	.50	SST	medium to coarse grain, some indistinct bedding, light and dark gray bands, 4 calcite stringers, semi-stick, moderately calcareous	27										R3
11		45.10	45.71	.61	SST	as above, 1 clean joint, stick core	37										R3
11		45.71	46.60	.89	SST	clean - light gray, coarse to medium at top, becomes fine to medium grain at base - salt and pepper, stick-core, calcareous, 3 calcite stringers	31										R3
11		46.60	47.27	.67	SST	fine grain, broken to semi-stick at base, 3 calcite-lined fractures, light gray, salt and pepper	26										R3
11		47.27	48.63	1.36	SST	as above with 7 calcite-lined fractures sheared at base, semi-stick	40										R3
11		48.63	48.74	.11	SLTST	with shale fragments, medium gray											
12		48.74	50.00	1.26	SLTST	as above, with sandy bands, mostly medium to dark gray and massive	29										R3
12		50.00	50.25	.25	SST	fine grain, light to medium gray, with 3 calcite stringers, stick-core											
12		50.25	51.78	1.53	SST	as above, 4 calcite stringers, some coaly splits, pyrite blebs on one fracture near base											R3
12		51.78	51.83	.05	SLTST	with very fine grain sandstone, rubble											
12		51.83	52.00	.17	Lost	core - shale											
		52.00	52.13	.13	Lost	coal											
12		52.13	52.23	.10	Coal	shaley - shear - polished - fragmental											
12		52.23	52.31	.08	Coal	as above											
12		52.31	52.40	.09	Lost	core - coal											
12		52.40	52.72	.32	SLST/SH	dark, carbonaceous, finely laminated, bioturbated, coaly wisps											R3
12		52.72	52.95	.23	Coal	as above											
12		52.95	53.10	.15	Lost	coal											
12		53.10	53.34	.24	Shale	dark gray, massive, carbonaceous - 1 polished coal split, semi-stick											

ALL LINEAR UNITS IN METRES

† RR/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS*		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. residual	ASH % d.b.	V.M. % d.b.	FC. % d.b.	F.S.I.		C.V.	
12		53.34	53.44	.10	Shale	as above, grading to siltstone below											
12		53.44	54.03	.59	SLST	medium gray, massive at top, laminated and interbedded with very fine grain sandstone at base, semi-stick - 2 irregular clean joints with iron staining and surface evidence of burrowing											R3
13		54.03	54.91	.88	SLST/SH	some calcite and iron staining on 3 joints, very faint bedding, dark gray carbonaceous, semi-stick	32										
13		54.91	55.07	.16	Shale	as above, irregular contact at base with a very fine grain, light gray sandstone											
13		55.07	55.61	.54	SST	with irregular interfingering layers of shale as above, calcareous, no bedding											R3
13		55.61	56.29	.68	SST	very fine grain to fine grain, light to medium gray, abundant crossbeds, with some minor shale splits, semi-stick, 2 calcite-lined joints, moderately calcareous	30										R4
13		56.29	56.40	.11	SST	rubble as above with one large calcite stringer - abundant iron-staining											
13		56.40	56.53	.13	SST	rubble as above, some breccia at end of interval											
13		56.53	56.96	.43	SS/SLST	interbedded sandstone, fine grain, light gray - siltstone medium to dark gray, calcite and iron-stains on 3 joints, worm burrows, some small-scale crossbedding	28										R4
14		56.96	58.15	.19	SST	fine grain with some bands of siltstone, medium gray, salt and pepper, 6 calcite-filled joints, calcareous											R3
14		58.15	58.22	.07	SST	very fine grain, very dark gray, 1 calcite stringer											R3
14		58.22	58.60	.38	SST	fine to medium grain, salt and pepper, light to medium gray, massive to poorly bedded, calcareous											R4
14		58.60	59.17	.57	SST	fine grain to very fine grain, light to medium gray, salt and pepper, semi-stick, 2 irregular joints, coaly wisps at base, calcareous	30										R3

ALL LINEAR UNITS IN METRES

F:R4/OR3 - GOLDBER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
14		59.17	59.44	.27	SS/SLST	sandstone is as above with dark gray laminae and coaly polished surfaces parallel to bedding. broken - fissile	33									R2
14		59.44	59.67	.23	SST	with dark gray coaly bed, 4 polished joints, fine grain	31									R3
14		59.67	60.07	.40	Rubble	as above becoming coarser grained below	28									R3
14		60.07	60.53	.46	Rubble	sandstone, medium to coarse grain, medium to dark gray, salt and pepper, massive, alightly calcareous										
14		60.53	60.93	.40	Lost	core										
14		60.93	61.55	.62	SST	medium grain, light and medium gray band, salt and pepper, mildly calcareous, 1 calcite-filled fracture, 2 clean rough joints, stick core, highly crossbedded										R4
15		61.55	62.48	.93	SST	as above, semi-stick, 5 joints parallel - lined with calcite	30									R3
15		62.48	63.63	1.15	SST	as above, 3 calcite-lined fractures, 1 coaly, cross-bedded										
15		63.63	63.86	.23	SST	as above, rubbley, iron-stained, some polished coaly surfaces										
15		63.86	63.99	.13	SST	as above, semi-stick	27									R3
15		63.99	64.91	.92	SST	as above, 1 calcite-lined, polished fracture	30									R4
15		64.91	65.41	.50	Rubble	mixture of coaly shale - sandstone medium grain and siltstone dark gray, partly ground and sheared, polished on coaly surfaces										
16		65.41	65.61	.20	SST	as previously described	32									R4
16		65.61	66.25	.64	SST	medium grain with abundant coaly wisps with coal in matrix, medium to dark gray, salt and pepper, equigranular, mildly calcareous	26									R3
16		66.25	66.78	.53	SST	fine grain with shale clasts and few coaly lined fractures which are polished broken to semi-stick, massive, moderately calcareous										R3
16		66.78	67.31	.53	SST	as above - stick core	22									R3
16		67.31	67.61	.30	SST	fine to medium grain, finely laminated, medium grain, 3 coaly fractures.	21									R3

ALL LINEAR UNITS IN METRES

† R&/OR S → GOLDER ASSOCIATES HARDNESS CODE
 * RQD → ROCK QUALITY DESIGNATION (%)
 FF → FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		MOISTURE ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
16		67.61	68.57	.96	SST	medium to coarse, light gray, salt and pepper, highly cross-bedded, 4 clean joints	24										RA
16		68.57	68.65	.08	SST	coaly - medium grain - 1 coaly polished fracture											RJ
16		68.65	69.45	.80	SST	as above, 1 calcite-3 coal-lined fractures	19										RJ
17		69.45	70.03	.58	SST	as above with shaley fragments as well as coaly bedding, 4 coaly polished joints	30										RJ
17		70.03	70.68	.65	SST	sandstone as above, 5 coaly polished fractures	32										RJ
17		70.68	71.18	.50	Coal	shaley, dull, polished, fissile, brighter toward base											
17		71.18	71.30	.12	Coal	as above with bright bands			4	82% recovery							
17		71.30	71.75	.45	Shale	dark gray to black, with 1 coaly split				3.70	0.86	9.20	20.11	70.69	8.0		
17		71.75	72.00	.25	Lost	core - shale											
17		72.00	72.23	.23	Coal	bright - fragmental, polished, sheared											S3
17		72.23	72.41	.18	Shale	as previously described											R2
17		72.41	72.51	.10	Lost	core											
17		72.51	72.71	.20	Shale	as above, becoming silty											R2
17		72.71	73.01	.30	Coal	bright, polished, with shale split in middle											S3
17		73.01	73.31	.30	Shale	as above											R2
17		73.31	73.41	.10	Coal	as previously described											S3
17		73.41	73.51	.10	Lost	core - coal											S3
17		73.51	73.87	.36	Shale	dark gray, carbonaceous - 2 polished coaly joints, semi-stick											
18		73.87	74.14	.27	Shale	as above	24										
18		74.14	75.04	.90	SLTST	dark gray with medium gray bands, finely laminated	28										R3
18		75.04	76.21	1.17	SLTST	as above	27										
18		76.21	77.81	1.60	SLTST	as above	25										R3

ALL LINEAR UNITS IN METRES

† RR/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
18		77.81	78.01	.20	SLTST	as above	30									R3
19		78.01	78.49	.48	SLTST	shaley, dark gray, carbonaceous with some plant fragments, massive, 3 calcite-lined fractures	32									R3
19		78.49	78.88	.39	Coal	fissile, polished, bright with 2 thin shaley splits			5	100% recovery						
										.90	.90	9.37	19.04	71.59	9.0	
19		78.88	79.14	.26	Shale	very dark gray, carbonaceous with coaly blebs and plant fragments, massive										R2-R3
19		79.14	79.33	.19	Shale	Coaly, fissile, broken										
19		79.33	79.55	.22	Shale	as above, broken										
19		79.55	79.95	.40	Shale	medium to dark gray, carbonaceous, massive with plant fragments, 1 polished curved fracture, semi-stick										R2
19		79.95	80.07	.12	SST	very fine grain, light gray, broken into siltstone below, burrowing evident										R3
19		80.07	80.82	.75	SLTST	dark gray with shaley layers, mostly massive, 1 calcite-lined fracture, stick core	26									R3
19		80.82	82.14	1.32	SLTST	as above, 1-3 cm sandy band near centre, 2 fractures lined with pyrite and calcite	26									R3
20		82.14	83.69	1.55	SLTST	as above, stick core, 2 thin calcite veinlets, 2 polished carbonaceous fractures	27									R3
20		83.69	85.26	1.57	SLTST	as above, becoming sandy and lighter gray at base	26									R3
20		85.26	86.59	1.33	SLST/SS	light gray sandstone - medium gray siltstone, sandstone is very fine grain, stick core, 4 calcite veinlets, 1 polished clean fracture	27									R3
21		86.59	86.87	.28	SLST/SS	bioturbated as above, bedding very disturbed										R3
21		86.87	88.07	1.20	SLST/SS	becoming sandier grading to sandstone below, 2 carbonaceous polished fractures	26									R3
22		88.07	88.44	.37	SST	sandstone fine to medium grain, well-bedded, probably calcareous	23									R3
22		88.44	90.00	1.56	SST	as above, 2 calcite stringers	25									R3
22		90.00	91.49	1.49	SST	as above, 6 coaly fractures										

ALL LINEAR UNITS IN METRES

1:RB/DR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
22		91.49	91.54	.05	SST	as above, rubble, more medium grain, more massive											R3
22		91.54	93.01	1.47	SST	as above, salt and pepper, stick	26										R3
22		93.01	94.53	1.52	SST	as above, salt and pepper, stick	24										R3
22		94.53	95.05	.52	SST	as above, salt and pepper, stick	22										R3
23		95.05	96.08	1.03	SST	fine to medium grain (mostly fine at base) abundant coaly wisps - medium dark gray, 1 calcite fracture - 2 coaly fractures, coaly fracture parallel to bedding	27										R4
23		96.08	97.53	1.45	SST	as above with abundant coaly and carbonaceous partings at base	27										R3
23		97.53	99.04	1.51	SST	as above, 3 polished calcite fractures - 2 coaly polished fractures, semi-stick	36										R4
24		99.04	100.54	1.50	SST	as above, becoming cross-bedded, stick-core, 3 coaly fractures	26										R4
24		100.54	102.07	1.53	SST	as above, bedding finely laminated, some cross-bedding, 7 coaly fractures	29										R3
24		102.07	103.43	1.36	SST	as above, 2 calcite stringers, 1 coaly polished fracture, 1 rough calcite joint, rubble at base	30										
24		103.43	103.63	.20	Lost	core											
25		103.63	103.91	.28	SST	fine grain with carbonaceous-coaly partings, broken along coaly partings, no apparent beddings											R3
25		103.91	104.23	.32	SST	broken, medium grain, clean with 1 carbonaceous parting											
25		104.23	105.23	1.00	SST	medium to coarse grain, salt and pepper, light to medium gray, abundant coaly wisps parallel to bedding, massive - bedding poorly developed, 2 calcite stringers at base, semi-stick	29										R1-R4
25		105.23	105.56	.33	SST	as above, semi-stick, 1 carbonaceous polished split at base											
25		105.56	106.69	1.13	SST	fine grain - light gray, massive with a few light and dark gray bands, 7 slightly carbonaceous joints	30										R4

ALL LINEAR UNITS IN METRES

1-RR/ORS - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.	
25		106.69	107.24	.55	NST	as above, 2 clean smooth joints, abrupt lower contact										
25		107.24	107.69	.45	Shale	dark gray to black, massive with coaly splits at base	28									R2
26		107.69	108.10	.41	Coal	shaley, dull with bright bands - sheared, polished and fragmental										S3
		108.10	108.30	.20	Lost	shale										
26		108.30	108.60	.30	Lost	core - coal - probably shaley										
26		108.60	108.95	.35	Shale	as above, semi-stick, polished coaly splits, massive										S3
26		108.95	109.38	.43	Shale	becoming silty, medium to dark gray, 2 calcite stringers, stick-core										R2
26		109.38	109.83	.45	SLTST	with some very fine grain sandstone, 3 calcite stringers, finely laminated, 1 calcite-lined fracture	29									R3
26		109.83	111.40	1.57	SLTST	as above, fine wavy laminations with some small scale cross-bedding (stick-core)	28									R3
26		111.40	111.52	.12	SLTST	as above, stick core, shale below, 1 calcite-lined fracture										
26		111.52	112.15	.63	Shale	dark gray to black, carbonaceous, coaly splits, semi-stick to broken, some wavy bedding disrupted by burrowing, 2 carbonaceous polished fractures										R2-R3
27		112.15	112.66	.51	SLTST	with sandy very fine grain bands near base - finely laminated with a few wavy beds, 1 irregular calcite-lined fracture	28									R4
27		112.66	112.77	.11	Shale	very dark gray, massive, no bedding, a clean joint										R3
27		112.77	114.39	1.62	Shale	silty, some fine lamination, dark gray with very dark gray bands, mildly carbonaceous, abundant calcite micro-veinlets, 2 large calcite veins, stick-core	25									R3
27		114.39	114.61	.22	SLST/SH	as above, stick-core										R3
27		114.61	115.70	1.09	SLTST	hard, massive with shaley bands, 5 calcite veinlets, 1 joint	27									R3

ALL LINEAR UNITS IN METRES

1-RB/DRS - GOLDBER ASSOCIATES HARDNESS CODE
 •ROD - ROCK QUALITY DESIGNATION (1%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGPOLE - McLATCHIE
AREA	S. E. R. C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS [†]
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. / residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
27		115.70	115.82	.12	Shale	very dark gray to black with coaly plant fragments, no bedding										R2
27		115.82	116.37	.55	Shale	as above										
28		116.37	117.30	.93	SLTST	as previously described, 2 calcite veins, stick core	26									R2-R3
28		117.30	117.40	.10	Shale	silty, massive, dark gray										
28		117.40	118.05	.65	Shale	as above, 2 calcite-lined joints	28									R1
28		118.05	118.82	.77	SLTST	shaley, dark gray with 2 clean joints	30									R3
28		118.82	120.30	1.48	SLTST	as above with some very fine grain sandstone bands, 2 calcite micro-veinlets, stick core	23									R3
29		120.30	121.80	1.50	SLTST	3 polished calcite fractures, massive - bedding indistinct, medium to dark gray, stick core										R4
29		121.80	123.34	1.54	SLTST	as above, 3 clean joints, 2 calcite micro-veinlets at base	16									R4
29		123.34	124.34	1.00	SLTST	as above, stick	34									R4
30		124.34	124.79	.45	SLTST	as above, rubble to broken	30									R3
30		124.79	125.57	.78	SLTST	as above with 3 carbonaceous joints, 1 with calcite as well, with very fine grain sandstone on top, stick to semi-stick	26									R4
30		125.57	125.72	.15	SST	fine to medium grain, abrupt upper and lower contact, light to medium grain with dark carbonaceous wisps, 2 fractures with polished carbonaceous coating										R3
30		125.72	126.32	.60	SLTST	as previously described, stick core, no breaks	33									R3
30		126.32	126.35	.03	SST	fine to medium grain, polished carbonaceous fracture at base	28									R4
30		126.35	127.78	1.43	SST	as above, 5 carbonaceous fractures, polished, carbonaceous-coaly wisps near base, rubblely at base	30									R4
30		127.78	127.98	.20	Lost											
30		127.98	128.38	.40	SST	as above, 1 clean joint, some cross-bedding	32									
31		128.38	129.58	1.20	SST	as above, 2 carbonaceous polished surfaces, stick core, rubblely at base	27									R4

ALL LINEAR UNITS IN METRES

† - RA/OR S — GOLDER ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODCEROLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.v.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.		
31		129.58	129.83	.25	SST	as above, 1 carbonaceous joint with coaly splits, massive											R4
31		129.83	129.86	.03	Coal	split - shaley, polished, rubble											
31		129.86	130.50	.64	SST	as above, 2 carbonaceous fractures, 3 coal split near base, cross-bedded	28										R3
31		130.50	130.70	.20	SST	rubble, abundant carbonaceous polished material on broken chunks											
31		130.70	131.30	.60	SST	large conglomerate (.5 cm) angular fragment, coarse grain, 2 carbonaceous fractures, abundant coaly wisps, coal at base											R4
31		131.30	132.35	1.05	Coal	hard, bright - exhibits good cleat - highly polished well developed fracture parallel to core axis, pyrite on fractures			6	131.30 to 131.49							
									↑	3.26 0.68	2.65	21.35	76.00	+9.0			
									7	131.49 to 132.35							
									↓	2.92 0.63	5.86	18.59	75.55	4.0			
32		132.35	133.25	.90	Coal	as above, some powdery coal along fractures											
32		133.25	133.58	.33	Shale	very coaly - black carbonaceous, 3 coaly fracture surfaces, massive											
32		133.58	133.88	.30	Shale	dark gray, carbonaceous with coaly fragments	20										R3
32		133.88	134.46	.58	Shale	as above, becoming silty at base, one polished coal-lined fracture	27										R4
32		134.46	135.20	.74	SST	very fine grain, 4 coal-lined fractures, massive coal, ground, polished, semi-stick to broken											R3
32		135.20	135.30	.10	Lost	core											
32		135.30	135.50	.20	Coal	sheared, polished, fragmented with powder bright with dull			8	135.30 to 135.50							
									↑	11.94 2.33	2.94	20.04	77.02	6.5			R1
32		135.50	136.40	.90	Lost	core - coal											
32		136.40	137.20	.80	Coal	as above, comparatively shaley at base			9	136.40 to 137.20							
									↓	11.60 2.43	2.07	21.02	76.91	8.0			R1-R2
32		137.20	137.84	.64	Lost	core - coal											
32		137.84	138.10	.26	Coal	as above, shear, polished, rubble											R1
32		138.10	138.60	.50	Shale	silty with abundant coal splits, broken to rubble, coaly rubble at base											R2
32		138.60	138.81	.21	Shale	as above, massive											R2

ALL LINEAR UNITS IN METRES

1 = R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLAUGHLIN
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		ROCK QUALITY ANGLE (%)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
										a.r.b.	residual	d.b.	d.b.	d.b.		
33		138.81	139.47	.66	SH/SLST	mostly as above, becoming silty just near base, dark to medium gray, semi-stick, abundant carbonaceous wisps	27									
33		139.47	139.64	.17	SLTST	medium grain with light gray very fine grain sandstone wisps, fissile, coal along bedding	28									R3
33		139.64	139.71	.07	Breccia	with shaley and silty fragments										
33		139.71	139.84	.13	Shale	black, carbonaceous, coaly rubble, broken										R2
33		139.84	140.20	.36	Lost	core										
33		140.20	140.90	.70	Coal	dull, powdery, compact, polished			10	78% recovery						S2
33		140.90	141.10	.20	Lost	core - coal				8.37	1.14	11.05	18.34	70.61	5.5	
33		141.10	141.75	.65	Shale	dark gray, carbonaceous, abundant plant debris, one polished coaly fracture, no visible bedding										R3
33		141.75	141.82	.07	SLTST	light to medium gray, fine laminations, some plant debris on bedding, semi-stick	26									R3
33		141.82	143.24	1.42	SLTST	as above, 2 sandy bands, 7 joints, smooth, lined with calcite and carbonaceous material	26									
33		143.24	144.53	1.29	SLTST	shaley partings, as above, 5 joints lined with carbonaceous material, semi-stick										R3
34		144.53	144.80	.27	SLTST	as above, two calcite stringers, 2 calcite-lined joints, a few very fine grain sandstone laminations										R3
34		144.80	146.27	1.47	SLTST	as above, shaley at top, shaley at base, carbonaceous, 9 carbonaceous polished fractures sub-parallel to bedding, small-scale cross-beds, broken at top, semi-stick	24									R3
34		146.27	146.78	.51	Shale	blocky to fissile, dark gray to black, semi-stick to broken, abundant coaly partings										R3
34		146.78	147.86	1.08	SLTST	as previously described										R3
35		147.86	149.39	1.53	SLTST	as above, dark gray with medium gray bands, some worm burrowing in centre, becoming shaley as base, 5 carbonaceous joints, 1 calcareous joint, 3 calcite stringers	28									R4
35		149.39	149.89	.50	Shale	very dark gray - black, carbonaceous, coaly split at base										R3

ALL LINEAR UNITS IN METRES

1 - R&/OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*ROD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % m. f. b. residual	ASH %	VM %	FC %	F.S.I.	C.V.	
35		149.89	150.81	.92	SLTST	as previously described, 2 calcite-lined fractures										R4
35		150.81	152.09	.28	SLTST	as above, 1 - 0.01 cm calcite vein at base, rubblely at base										R4
		152.09	152.40	.31	Lost	core										
36		152.40	153.06	.66	SLTST	sandy, light to medium gray, core cut by network of calcite veins, semi-stick, rubblely in centre										R3
36		153.06	153.18	.12	Coaly	breccia, polished and highly broken										
36		153.18	153.58	.40	SLTST	with very fine grain sandstone, finely laminated, medium gray	34									R4
36		153.58	155.12	.54	SLTST	as above, becoming less sandy, massive towards base, 8 calcite-lined fractures	29									R4
36		155.12	156.40	.28	SLTST	as above, medium gray, 3 calcite veinlets, 3 polished calcite-lined fractures, coal-lined fractures										R4
37		156.40	156.66	.26	SLTST	as above, stick core										R4
37		156.66	157.21	.55	SLTST	as above, 1 calcite-lined fracture										R4
37		157.21	157.35	.14	Shale	coaly, fissile, polished and sheared										R2
37		157.35	157.75	.40	SLTST	as previously described, stick-core, 1 coaly pyritic polished fracture										R4
37		157.75	157.95	.20	Shale	dark gray, carbonaceous										R3
37		157.95	158.43	.48	Shale	as above										R3
37		158.43	159.59	.16	SLTST	sandy at base, very fine grain, 3 calcite-lined fractures, one polished coal-lined fracture, massive at top, very finely laminated at base	30									R3
37		159.59	159.64	.05	SLTST	as above										R3
37		159.64	159.83	.19	Shale	medium to dark gray, 1 coal-lined fracture, 1 calcite stringer										R3
38		159.83	160.76	.93	SLTST	as previously described, 3 calcite-lined fractures										R3

ALL LINEAR UNITS IN METRES

1:R4/OR 5 — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE 1-1	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS 1
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r. b. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.	
38		160.76	161.08	.32	SLST/SH	medium to dark gray, light and dark banding, 5 polished shaley fractures	32									R3
38		161.08	161.15	.07	SLST/SH	as above										
38		161.15	161.45	.30	SLST/SH	as above with 2 coaly fractures	31									R3
38		161.45	162.40	.95	Shale	coaly, 2 joints sub-parallel to core axis, polished										R2-R3
38		162.40	162.73	.33	SLTST	dark gray, carbonaceous, some indistinct laminations, 4 coal-lined fractures, polished										R3
38		162.73	162.99	.26	SLTST	as above										R3
38		162.99	163.12	.13	SLTST	rubble, highly broken, polished, coaly material on fracture surfaces										R3
38		163.12	163.22	.10	Lost	core										
38		163.22	164.24	1.02	SLST	indistinct, wavy bands, 9 fractures lined with polished coal	27									R3
39		164.24	164.31	.07	Shale	dark gray to black, carbonaceous										R2
39		164.31	165.95	1.64	Shale	silty at base, dark gray to black, few coaly splits along bedding, 5 coaly polished fractures, 1 calcite-lined joint sub-parallel to core axis	27									
39		165.95	167.35	1.40	Shale	as above, 4 carbonaceous polished fractures, some irregular calcite veinlets, 1 joint sub-parallel to core axis, minor calcite, coaly										R3
39		167.35	167.46	.11	Coal	shaley, polished, sheared, fissile										R1
		167.46	167.66	.20	Lost	coal										
39		167.66	167.86	.20	Shale	dark gray, carbonaceous, calcite and coal on two irregular fractures										R2-R3
39		167.86	168.20	.34	Coal	shaley, bright with dull bands, polished, powdered at base			11	56%	recovery					
										5.72	1.14	9.40	18.63	71.97	7.0	
		168.20	168.60	.40	Lost	shale										
39		168.60	168.70	.10	Coal	shaley, bright with dull bands, polished, powdered at base										R2
		168.70	169.50	.80	Lost	coal										

ALL LINEAR UNITS IN METRES

1-R&/OR S — GOLDBER ASSOCIATES HARDNESS CODE
 •RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. / residual	ASH %	V.M. %	FC %	F.S.I.	C.V.	
40		169.50	169.75	.25	SLTST	rubble										
		169.75	170.03	.28	Lost	Coal										
40		170.03	170.10	.07	Shale	with abundant coaly wisps, dark gray to black										R3
40		170.10	170.23	.13	Shale	dark gray to black, 1 polished coal split										
40		170.23	171.57	1.34	SLTST	medium to dark gray, finely laminated, fissile at top, becoming massive to blocky at base			27							R3
40		171.57	171.04	0.47	SLTST	as above, very fine grain sandstone at base, 1 calcite veinlet, 1 calcite-lined fracture										R3
40		173.04	173.41	.37	SLTST	as above, shaley at top, becoming more massive at base										R3
41		173.41	173.59	.18	LSTST	dark gray, carbonaceous										R3
41		173.59	173.95	.36	SLTST	as above, semi-stick										R3
41		173.95	174.29	.34	SLTST	as above			28							R3
41		174.29	174.95	.66	SLTST	as above, a few wavy sandstone beds, worm burrows, shaley at base, 3 veinlets of calcite										R3
41		174.95	175.00	.05	Coal	very shaley, dirty										R2
41		175.00	175.50	.50	Shale	dark gray, carbonaceous, coaly at base										R3
41		175.50	175.75	.25	Coal	shaley, rubblely										
41		175.75	175.95	.20	Breccia	rubble, shaley, dark gray										
41		175.95	176.17	.22	Shale	dark gray, carbonaceous, massive										R3
41		176.17	176.30	.13	Lost	core - shale										
41		176.30	176.43	.13	Coal	very shaley										R2
41		176.43	176.80	.37	Lost	coal										
41		176.80	178.26	1.46	SLTST	finely laminated with medium to dark gray bands			31							R3
42		178.26	178.62	.36	SLTST	dark gray, 2 clean, smooth joints										R3
42		178.62	178.85	.23	Shale	fissile, dark gray, carbonaceous, 10 calcite micro-veinlets sub-parallel to bedding										
42		178.85	179.91	1.06	Shale	dark gray carbonaceous, massive with coal along 4 fracture planes, abundant calcite stringers at top										R2

ALL LINEAR UNITS IN METRES

T:R&/OR S - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	VM %	FC %	F.S.I.		C.V.
42		179.91	181.05	.14	Shale	as above, grades to siltstone below, stick core, 1 calcite stringer										R3
42		181.05	181.19	.14	SLTST	medium to dark gray bands, bioturbated, a few shaley layers										R3
42		181.19	181.43	.24	Shale	as previously described	24									R3
42		181.43	182.78	1.35	Shale	as above, silty at base, stick core, 2 calcite-lined joints										R3
43		182.78	182.91	.13	Shale	as above										R3
43		182.91	183.48	.57	Shale	silty, massive - 3 calcite-filled joints, medium gray, semi-stick core - some calcite micro-veinlets										R3
43		183.48	183.63	.15	Shale	fissile, platy with coaly splits, 1 calcite-lined fracture, polished, dark gray, broken										R1
43		183.63	184.36	.73	Shale	dark gray to black, semi-stick, as previously described										R3
43		184.36	184.50	.14	GeoTech	sample as above										R3
43		184.50	185.30	.80	SLTST	medium dark gray, finely laminated, bioturbated, few calcite stringers	28									
43		185.30	185.90	.60	Shale	as before, abundant calcite stringers in centre										R2
44		185.90	187.33	1.43	SLT/SH	silty, semi-stick, 1 calcite-lined fracture	26									R1
44		187.33	188.57	1.24	SLTST	dark gray, carbonaceous, some shaley and some fine grain, sandy intervals, 3 joints										R2
44		188.57	189.77	1.20	Shale	dark gray, carbonaceous, slightly silty, 1 joint										R2
45		189.77	189.83	.06	Shale	dark gray, carbonaceous										R2
45		189.83	190.03	.20	Gouge	earthy coaly material, ground up, probably slough			12	6.84	0.72	87.34		0.0		
45		190.03	190.18	.15	Geotech	as above sample taken										
		190.18	190.50	.32	Lost	gouge										
45		190.50	191.10	.60	SLTST	dark gray, carbonaceous, sandy, some fine grain sandy cross-beds, broken										R2

ALL LINEAR UNITS IN METRES

1:R4/R5 — GOLDR ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS*		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %		F.S.I.	C.V.
										a.r.b.	residual						
45	191.10	192.03	.93	SS-SLST	siltstone - dark gray, sandstone - fine grain, light gray, convolute bedding, broken core, 2 joints												R2
45	192.03	192.93	.90	SLTST	dark gray, shaley												R2
45	192.93	193.01	.08	Coal/SI	chunky (broken chunks)												
45	193.01	193.11	.10	SLTST	dark gray, carbonaceous												R2
45	193.11	193.56	.45	SLTST	dark gray, carbonaceous, sandy, 2 joints												R3
46	193.56	194.12	.56	SS/SLST	light gray, fine grain sandstone - siltstone is dark gray, cross-beds, 1 joint calcite-lined												R3
46	194.12	194.30	.18	Shale	silty, dark gray, carbonaceous, trace of coaly material, 2 joints, 1 slicked joint												R2
46	194.30	194.57	.27	Shale	black, carbonaceous to coaly, slicks												R1
46	194.57	194.80	.23	SILT/SS	fine grain, medium gray, broken stick												R2
46	194.80	194.85	.05	Lost	coal - as below												R2
46	194.85	195.00	.15	Coal	dull, powder												
	195.00	195.82	.82	Lost	shale, as below				13	4.58	0.70	82.40			0.0		
46	195.82	195.90	.08	Shale	black, carbonaceous, coaly												R2
	195.90	196.30	.40	Lost	coal - as below												
46	196.30	196.40	.10	Coal	broken pieces to powder, dull, shaley												
	196.40	196.59	.19	Lost	shale - as below												
46	196.59	197.00	.41	Shale	dark gray, carbonaceous, polished, broken stick												R2
46	197.00	197.30	.30	Shale	very dark gray to black, carbonaceous to coaly												R1-R2
	197.30	198.38	1.08	Lost	coal - as below												
46	198.38	199.03	.65	Coal	very soft, powdered, dull												
	199.03	199.10	.07	Coal	broken chunks, dull, polished				14	24.37	3.97	6.17	18.54	75.29	3.5		
46	199.10	199.22	.12	Shale	dark gray, carbonaceous												

ALL LINEAR UNITS IN METRES

† :R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS†	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	VM. %	FC. %	F.S.I.		C.V.
46		199.22	199.50	.28	SLTST	dark gray, carbonaceous, sandy										
46		199.50	199.89	.39	SS/SLST	sandstone light gray, fine gray with dark gray, carbonaceous siltstone cross-beds										
47		199.89	200.51	.62	SST	fine grain, light gray with dark gray siltstone cross-beds, 4 joints	26									R3
47		200.51	202.11	1.60	SS	as above, 4 joints, a few thin calcite-filled fractures, more convolute than cross-bedded	34									
47		202.11	202.44	.33	SLTST	dark gray, carbonaceous, sandy at top, 1 slick, broken stick										R2
47		202.44	202.57	.13	SST	light gray, fine grain with dark gray convolute siltstone beds giving mottled appearance										R3
47		202.57	202.94	.37	SLTST	dark gray, carbonaceous, 1 joint										R2
47		202.94	203.63	.69	SLST/SS	convolute light gray, fine grain sandstone and dark gray siltstone, 1 joint and a few calcite-filled fractures, 1 slick										R2
47		203.63	203.76	.13	SLST/SS	as above										
47		203.76	203.96	.20	SLTST	dark gray, carbonaceous										R2
48		203.96	205.06	1.10	SLTST	as above with some light gray sandstone interbeds, stick	27									R2
48		205.06	205.56	.50	SLTST	as above, very little sandstone										R2
48		205.56	205.58	.02	Coal	dull, shaley, earthy, gouged										
48		205.58	205.76	.18	SLTST	as above										S4
48		205.76	205.80	.04	Clay	very dark gray, earthy, gouge										S4
		205.80	206.11	.31	Lost	shale or clay										
48		206.11	206.31	.20	SLTST	as above										
48		206.31	206.44	.13	Coal	powdered, dull, shaley										S2
48		206.44	206.86	.42	Shale	silty, carbonaceous plant fragments, very dark gray, 2 joints										R2
48		206.86	207.32	.46	Shale	increasingly silty and slightly sandy at base, 2 joints										R2

ALL LINEAR UNITS IN METRES

† RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION [%]

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		READING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % D.F.B.	residual	ASH %	V.M. %	FC %	F.S.I.	
48	207.32	208.10	.78	SST	fine grain, light gray, with dark gray siltstone interbeds, broken stick											R3
48	208.10	208.19	.09	SLTST	rubble		23									
	208.19	208.23	.04	Lost	siltstone											
49	208.23	208.36	.13	SS/SLST	light gray, fine grain sandstone and dark gray siltstone, convolute, 1 joint											R3
49	208.36	208.96	.60	SS/SLST	as above, 2 joints 1 slick, broken stick		26									
	208.96	209.26	.30	Lost	sandstone											
49	209.26	210.66	1.40	SST	light gray, fine to medium-grained, poorly defined, dark gray silty beds, 5 joints, broken stick to rubble, thin calcite-filled fractures throughout											
49	210.66	210.85	.19	SST	as above											R3
49	210.85	211.14	.29	Lost	sandstone											
49	211.14	211.24	.10	SLTST	dark gray, carbonaceous, shaley, broken											R2
49	211.24	211.46	.22	SLTST	as above, rubble, ground up, gouge											
49	211.46	211.56	.10	SLTST	as above, broken stick to rubble											
49	211.56	211.61	.05	SST	rubble, fine grain, light gray											R3
	211.61	211.87	.26	Lost	sandstone											
49	211.87	212.25	.38	SLTST	dark gray, carbonaceous, shaley, broken stick, 1 joint											R2
49	212.25	212.45	.20	SLTST	pieces to gouge, as above											
50	212.45	212.52	.07	SLTST	gouge, as above											
50	212.52	212.60	.08	Shale	stick, very dark gray, carbonaceous, pyritic, conchoidal type fracture when broken											R2
50	212.60	213.01	.41	Coal	dull, polished, powdered stick to friable			15	37% recovery							S2
50	213.01	213.70	.69	Lost	coal				17.87	0.78	5.87	19.85	74.33	8.5		
50	213.70	214.45	.75	SLTST	dark gray, carbonaceous, stick, plant fragments											R2
	214.45	214.55	.10	Lost	siltstone											

ALL LINEAR UNITS IN METRES

† -R&/OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEMOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % p.r.b. / residual	ASH %	VM %	FC %	F.S.I.	C.V.	
50	214.55	215.65	1.10	SLTST	as above, mainly broken stick with some rubble, 3 joints											
50	215.65	215.74	.09	SST	light gray, fine grain, with dark gray carbonaceous cross-beds		30									R3
	215.74	215.77	.03	Lost	sandstone											
50	215.77	216.00	.23	SLTST	dark gray, carbonaceous, slightly sandy											
50	216.00	216.68	.68	SLST/SS	interbedded light gray, fine grain sandstone and dark gray carbonaceous siltstone, broken core, 7 joints											R2
50	216.68	216.80	.12	SLTST	dark gray, carbonaceous											R2
50	216.80	216.94	.14	Shale	dark gray, carbonaceous, plant material											
	216.94	217.04	.10	Lost	shale											
51	217.04	217.83	.79	Shale	as above, sandy in part, 3 joints											R2
51	217.83	217.93	.10	Shale	as above, rubble											
51	217.93	218.08	.15	Shale	as above, broken stick											
51	218.08	218.40	.32	Shale	as above, stick											
51	218.40	219.50	1.10	SLTST	medium to dark gray, sandy, bioturbated, sandstone is light gray, very fine grain, 3 joints											R2
	219.50	219.65	.15	Lost	Siltstone											
51	219.65	219.75	.10	SLTST	as above											
51	219.75	220.70	.95	SST	light gray, fine grain, with dark gray siltstone beds poorly defined, bioturbated, broken stick to rubble at base		26									R3
51	220.70	220.99	.29	SST	rubble											
	220.99	221.10	.11	Lost	sandstone											
52	221.10	221.30	.20	SST	as above, broken, 1 joint											
	221.30	222.35	1.05	SST	as above, siltstone is convolute to cross-bedded, 3 joints, bioturbated, a few thin calcite-filled fractures, broken stick		26									
	222.35	222.62	.27	Lost	sandstone											

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

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BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS 1	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. residue	ASH %	V.M. %	F.C. %	F.S.I.	C.V.		
52	222.62	222.88	.26	SLTST	medium to dark gray, sandy - fine grain, light gray - broken												
52	222.88	223.78	.90	SLTST	dark gray, carbonaceous, sandy, broken stick, plant debris, 2 joints												R2
52	223.78	224.15	.37	Shale	very dark gray, abundant carbonaceous plant debris												R2
52	224.15	224.30	.15	Coal	dull, pieces to powder				16	100% recovery	2.67	0.57	19.93	17.78	62.29	5.0	S2
52	224.30	224.40	.10	Shale	earthy, coaly, broken pieces, gouge												
	224.40	224.50	.10	Lost	shale												
52	224.50	224.80	.30	SS/SLST	interbedded, light gray, siltstone and dark gray carbonaceous siltstone, ripple to cross-bedded, broken stick to pieces, 1 joint												
52	224.80	225.09	.29	SS/SLST	as above but increasing in siltstone	25											
53	225.09	225.22	.13	Coal	broken pieces to powder, bright with dull												S2
53	225.22	225.92	.70	Lost	core - coal												
53	225.92	226.37	.45	Coal	compact, fissile, dull and bright bands, some powdery ground coal at base				17	55% recovery	10.40	2.85	8.92	19.45	71.63	6.5	S3
53	226.37	226.70	.33	Coal	powder - compact some pieces - bright with dull												S2
53	226.70	226.75	.05	Lost	coal												
53	226.75	227.13	.38	Shale	coaly bands - dark gray to black, fissile, broken at base												R2
53	227.13	227.21	.08	SLTST	rubble, light to medium gray, finely laminated, calcite on fracture surfaces												R3
	227.21	227.31	.10	Lost	siltstone												
53	227.31	228.21	.90	SLTST	as above, broken to rubble, with fracture parallel to core axis, calcite and carbonaceous material on polished surfaces, abundant fine grain light gray sandstone throughout												
53	228.21	228.71	.50	SS/SLST	light gray, fine grain to very fine grain sandstone - convolute bedded dark gray carbonaceous siltstone, broken core, partial stick	24											R3

ALL LINEAR UNITS IN METRES

1 - R&/OR 5 - GOLDR ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.		
53		228.71	229.00	.29	Lost	shale											
53		229.00	229.46	.46	Shale	very dark gray, carbonaceous, slicked, broken											R2
53		229.46	229.56	.10	Shale	as above											
54		229.56	230.35	.79	Shale	as above, slightly silty at base											
54		230.35	230.38	.03	SST	light gray, fine grain											R3
54		230.38	230.46	.08	SLTST	dark gray, slightly carbonaceous, sandstone lenses											R3
54		230.46	230.53	.06	Shale	very dark gray, carbonaceous, slicked											R2
54		230.53	230.76	.23	Lost	shale											
54		230.76	231.06	.30	SS/SILT	interbedded light gray, fine grain, siltstone and dark gray carbonaceous siltstone, some convolute bedding to slightly ripple bedded, good stick, abundant thin calcite-filled fractures, 4 joints, 3 bedding plain fractures	39-45										Fault zone below (broken)
54		231.06	232.62	1.56	SILT/SS	as above											
54		232.62	232.91	.29	SILT/SS	as above	45										R3
54		232.91	233.62	.71	Shale	very dark gray, carbonaceous, broken to rubble, polished throughout											R2
		233.62	233.79	.17	Lost	shale											
55		233.79	234.52	.73	Shale	as above											
		234.52	235.23	.71	Lost	shale											
55		235.23	235.80	.57	Shale	as above											
55		235.80	235.95	.15	Coal	dull, broken, polished			18	23% recovery							R1
										Tag shows 236.95, should be 236.50							
										4.20 1.11 11.51 19.69 68.80 8.0							
55		235.95	236.50	.55	Lost	coal											
55		236.50	236.64	.14	Shale	very dark gray, carbonaceous, carbonaceous plant debris, broken, polished											R2
		236.64	236.94	.30	Lost	core											
55		236.94	237.38	.44	Shale	as above											
		237.38	237.73	.35	Lost	core											

ALL LINEAR UNITS IN METRES

1 - R&DR 3 - GOLDR ASSOCIATES HARDNESS CODE
 RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LONGPOLE - McINTACHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	VM %	FC %	F.S.I.	
55	237.73	238.36	.63	Shale	as above with a .06 m coaly shale bed in middle, slightly sandy at base										
55	238.38	238.80	.42	Shale	as above, dark gray, carbonaceous, broken, some slicks										R2
56	238.80	239.53	.73	Shale	as above, becoming silty, 1 joint										
56	239.53	239.79	.26	Shale	as above, grading to siltstone at base										
56	239.79	240.39	.60	SLTST	medium to dark gray, sandy in places, thin calcite-filled fractures, lower .25 m rubble										
56	240.39	241.01	.62	SLTST	as above										
56	241.01	241.34	.33	SST	light gray, fine grain, with intermixed dark gray siltstone, bioturbated, abundant calcite-filled fractures										
56	241.34	241.54	.20	Shale	very dark gray, carbonaceous, polished, broken, rubble										
	241.54	241.57	.03	Lost	core										
56	241.57	242.13	.56	SST	light gray, fine grain, broken stick to rubble, some silty zones, numerous calcite-filled fractures										
56	242.13	242.55	.42	SST	as above										
57	242.55	242.99	.44	SST	as above										
57	242.99	243.29	.30	SST	as above										
57	243.29	244.59	1.30	SST	as above, bedding is ripple to convolute, 1 joint, dark gray siltstone ripple beds			37							
57	244.59	245.51	.92	SS/SLST	interbedded fine grain, light gray, sandstone and dark gray siltstone			37							R3
57	245.51	245.86	.35	SS/SLST	as above, rubble										
57	245.86	246.72	.86	SS/SLST	as above, broken stick										
58	246.32	246.68	.36	SS/SLST	as above										
58	246.68	247.18	.50	SS/SLST	as above, rubble										
58	247.18	247.38	.20	Lost	core										
58	247.38	248.21	.83	SS/SLST	as above, rubble, some broken stick										

ALL LINEAR UNITS IN METRES

1 = RB/RS — GOLDR ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM. %	FC. %	F.S.I.		C.V.
										a.f.b.	residual						
58		248.21	248.51	.30	SLTST	dark gray, carbonaceous, sandy, rubbly											
58		248.51	248.58	.07	SLTST	as above, rubble											
		248.58	248.78	.20	Lost	core											
58		248.78	249.21	.43	SLTST	as above, broken stick											R2
58		249.21	250.01	.80	SLTST	as above, 4 joints, a few calcite-filled fractures											
58		250.01	250.31	.30	SLTST	as above, broken											
		250.31	250.56	.25	Lost	core											
59		250.56	251.15	.59	SLTST	as above, broken to broken stick, 2 joints											R2
59		251.15	251.23	.08	SSF	light gray, fine grain											R3
59		251.23	251.60	.37	SLTST	as above, broken stick, shaley at base											
59		251.60	252.70	1.10	Shale	very dark gray, carbonaceous, silty, broken to rubbly, some calcite-filled fractures, slicked throughout											R2
59		252.70	253.36	.66	Shale	as above, rubbly											
59		253.36	253.58	.22	Shale	as above, rubble											
59		253.58	254.18	.60	SLTST	medium to dark gray, broken stick, completely riddled with thin calcite-filled fractures, random pattern											R2
59		254.18	254.40	.22	Shale	dark gray, carbonaceous, silty, broken stick											R2
60		254.40	254.93	.53	Shale	as above, 3 joints											
60		254.93	255.00	.07	Shale	dark gray, carbonaceous, calcite-filled fractures, sheared surfaces											R2
60		255.00	255.10	.10	Coal	dull, shaley, polished											S3
60		255.10	255.50	.40	Lost	coal											
60		255.50	255.80	.30	Shale	very dark gray to black, slicked, carbonaceous, slightly coaly, rubble to stick											R2
		255.80	256.30	.50	Lost	shale											
60		256.30	256.75	.45	Coal	dull, powdery			19	8.59	0.49	10.60	20.11	69.29	8.5		

ALL LINEAR UNITS IN METRES

*ORR/OR S — GOLDER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHLE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.		
60		256.75	256.90	.15	Lost	shale											
60		256.90	257.30	.40	Lost	coal			19	48%	Recovery						
60		257.30	257.80	.50	Shale	black, carbonaceous, slicked, broken to broken stick											R2
60		257.80	257.90	.10	Shale	lost											
60		257.90	257.94	.04	Coal	dull, powder											S4
60		257.94	258.08	.14	Coal	dull, powder											S4
		258.08	258.20	.12	Lost	coal											
60		258.20	258.99	.79	Shale	black, carbonaceous, with some bright coaly bands, sheared, polished fracture surfaces, carbonaceous plant material, silty at base, some calcite-filled fractures											R3
60		258.99	259.26	.27	Shale	as above, becoming rubbly											
		259.26	259.36	.10	Lost	core											
61		259.36	260.48	1.12	Shale	as above, semi-stick, sheared and polished											R3
61		260.48	261.38	.90	Shale	as above, becoming rubbly at base											R3
61		261.38	262.14	.76	Shale	as above											
		262.14	262.60	.46	Lost	shale											
61		262.60	262.65	.05	Coal	dull, powdery											S2
		262.65	263.30	.65	Lost	coal											
		263.30	263.77	.47	Lost	shale											
61		263.77	263.89	.12	Shale	as above, very carbonaceous, rubbly to powdery											
61		263.89	264.46	.57	Shale	as above, rubbly at top, broken to broken stick at base											R3
62		264.46	264.91	.45	Shale	as above, rubbly near base											
62		264.91	265.00	.09	Shale	black, very carbonaceous, polished, some bright coaly bands, sheared											R3
62		265.00	265.47	.47	Coal	bright, hard, semi-stick, shaley and blocky at top			20	5.39	0.60	10.58	18.75	70.67	2.5		R1-R2

ALL LINEAR UNITS IN METRES

1-10/R/S - GOLDER ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	L.P.D-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										d.r.b.	residual						
62		265.47	265.64	.17	Coal	bright and dull, powdery			21								R2
62		265.64	266.04	.40	Coal	bright, blocky to powdery, polished, some pyrite flecks			21	63% recovery	10.44	0.98	12.30	18.70	69.06	2.5	S3
62		266.04	266.24	.20	Coal	as above											S3
		266.24	266.49	.25	Lost	shale											
62		266.49	266.55	.06	Shale	black, very carbonaceous, polished carbonaceous joint surfaces											R3
62		266.55	266.89	.34	Coal	bright, flakey to powdery											S3
62		266.89	266.93	.04	Shale	rubble, as previously described											
		266.93	267.20	.27	Lost	shale											
62		267.20	267.25	.05	Coal	as previously described											S3
62		267.25	267.67	.42	Coal	bright with dull, flakey to powdery											S3
62		267.67	267.76	.09	Coal	mostly dull, powdery											S1
		267.76	267.80	.04	Lost	coal											
62		267.80	267.92	.12	Coal	hard, dull with bright bands, blocky											R2
		267.92	268.23	.31	Lost	coal											
62		268.23	268.30	.07	Coal	mostly dull, powdery											
62		268.30	269.15	.85	Shale	dark gray to black, carbonaceous, bright coal bands, pyrite flecks, polished fracture surfaces, rubblely to powdery at base			22	2.12	0.61	14.03	19.10	66.87	7.5		R2
		269.15	269.30	.15	Lost	shale											
63		269.30	269.50	.20	Lost	shale - as above											
63		269.50	270.90	.40	Shale	dark gray to black, carbonaceous, polished carbonaceous fracture surfaces, some pyrite flecks, semi-stick, slightly silty											R3
63		270.90	271.45	.55	Shale	medium to light gray, broken stick, becoming more silty, polished joint surfaces, carbonaceous											R3
63		271.45	272.45	1.00	Shale	as above, very silty, rubblely at top											R3

ALL LINEAR UNITS IN METRES

† →R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	L.P.D-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIGN.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. / residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
63		272.45	273.40	.95	SLST	light to medium gray, shaley, broken stick, 4 clean joints sub-perpendicular to bedding, some very fine grain sandy laminations										R3
64		273.40	273.84	.44	SLST/SS	siltstone is medium gray, sandstone is light gray, fine to very fine grain, broken core										R3
64		273.84	275.41	1.57	SLST/SS	as above			11							R3
64		275.41	276.89	1.48	SLST/SS	as above, some polished joint surfaces, some calcite-filled fractures, becoming sandier towards base, semi-stick to stick			15							R3
64		276.89	277.41	.52	SLST/SS	as above										R3
65		277.41	278.38	.97	SLST/SS	as above, with numerous sandy lenses										R3
65		278.38	279.58	1.20	SLST/SS	as above										R3
65		279.58	279.96	.38	SST	fine to medium grain, light gray, some dark gray silty laminations, broken core										R3
65		279.96	281.32	1.36	Lost	core										
65		281.32	282.20	.88	SST	as above, very broken core, some carbonaceous polished joint surfaces										
65		282.20	283.40	1.20	Lost	coal										
65		283.40	284.20	.80	Lost	core - sandstone										
65		284.20	284.66	.46	SST	as previously described, broken core, becoming medium to coarse grain, some calcite-filled fractures										R3
66		284.66	285.22	.56	SST	as above, rubble and carbonaceous in places										R3
66		285.22	286.67	1.45	SST	as above										R3
66		286.67	288.12	1.45	Lost	core										
66		288.12	288.53	.41	SST	rubble at top, as above										
66		288.53	288.67	.14	SST	rubble, as above										
		288.67	289.17	.50	Lost	core										
66		289.17	289.73	.56	SST	as above, broken stick with carbonaceous stringers										R3

ALL LINEAR UNITS IN METRES

1-R&ORS - GOLDER ASSOCIATES HARDNESS CODE
 *RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LPD-306
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.	
										o.r.b.	residual							
66		289.73	289.83	.10	SST	rubble, as above, with some coaly, polished material												
66		289.83	289.95	.12	SST	rubble, as above												
66		289.95	290.21	.26	SST	as above, stick core, with numerous calcite-filled fractures											R3	
67		290.21	291.17	.96	SST	as above, rubblely at base, numerous coaly stringers and bands at base	13											R3
67		291.17	291.57	.40	SST	breccia, as above												
67		291.57	292.36	.79	SST	as above, highly fractured and broken, numerous calcite-filled fractures and coaly stringers												R3
		292.36	292.56	.20	Lost	core												
67		292.56	293.93	1.37	SST	as above with 2 - 2 cm dull coaly bands at base, slightly conglomeratic in places, numerous polished carbonaceous surfaces												
						END OF HOLE												

ALL LINEAR UNITS IN METRES

† -R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

-RQD — ROCK QUALITY DESIGNATION [%]

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-306
CONTINUED	

CROWS NEST RESOURCES LIMITED
COR. & COAL CORE DESCRIPTION

PROJECT LODGE
AREA S.E. B.C.

DATE BEGIN July 15, 1980
END July 21, 1980

HOLE No. LPD-307

HOLE PARTICULARS

LOCATION	LODGEPOLE S.E. B.C.	
ELEVATION	2131.3	HOLE BEARING (AZ ^m)
TOTAL DEPTH	195.0	HOLE ANGLE (°): Vert.

LOGGING

LOGS RUN	Gamma, Density, Resistivity, Calliper
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER	110
LORE RECOVERED	146.6 m
LENGTH CORED	177.8 m
LORE RECOVERY	82.5 %

EXAMINATION

LOG USED	Gamma, Density
No. OF SEAMS SAMPLED	2
EXAMINER (S)	HK / DL
DATE	July 18/80

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	RECORDING INSTR.	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA							REMARKS ¹
		FROM	TO						MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
										a.e.b.	residual	d.b.	d.b.	d.b.		
					COAL RECOVERY											
					Upper Seam: Core Recovered: 7.24											
					Length Cored: 8.02											
					Core Recovery: 90.3%											
					Lower Seam: Core Recovered: 8.30											
					Length Cored: 17.33											
					Core Recovery: 47.9%											
1	14.74	15.14	.40	Shale	rubble, as below											
1	15.14	15.60	.46	Shale	silty, medium gray, some calcite stringers, some carbonaceous material, 4 joints											
1	15.60	16.00	.40	Shale	rubble, as below											
1	16.00	16.90	.90	Shale	light gray, some calcite-lined fractures, rubblely, soft, could be from caving											
1	16.90	17.65	.75	Shale	very rubblely, dark gray, carbonaceous											
1	17.65	17.85	.20	Shale	soft, coaly, some plant material											R2
2	17.85	18.15	.30	Shale	dark gray, carbonaceous yellow coating on fracture planes, rubblely, some coaly material											
2	18.15	18.25	.10	Shale	coaly, rubble											
2	18.25	19.35	1.10	Shale	silty, dark gray, 8 joints, all joints are smooth, some are polished											R3
2	19.35	19.50	.15	Shale	same as below, probably some core loss in this unit											R3
2	19.50	19.70	.20	Shale	very dark gray, carbonaceous, very rubblely											R3
2	19.70	21.93	2.23	Lost	core											
2	21.93	22.35	.42	Shale	same as below, supposed to be at 19.7 according to logs in lost core below											R3

ALL LINEAR UNITS IN METRES

* MEASURED FROM THE HORIZONTAL PLANE
 † : R &/OR S — GOLDR ASSOCIATES HARDNESS CODE
 • RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

HOLE No. LPD-307

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. / residual	ASH %	V.M. %	FC %	F.S.I.	C.V.	
2		22.35	22.70	.35	Shale	shale rubble - dark gray, carbonaceous, some polished surfaces, some coaly specks, no visible bedding										R3
2-3		22.70	23.12	.42	SLTST	very dark gray, carbonaceous with coal wisps, becomes shaley near top										R4
3		23.12	24.37	1.25	SS/SLST	same as below but grading into siltstone near top, 5 joints lined with pyrite and calcite, some iron-staining, fewer calcite stringers than below, stick coal										
3		24.37	25.82	1.45	SS/SLST	same as below but becoming slightly more fine grained, 7 joints, surfaces lined with calcite and have deep red iron-stain, some surfaces show bluish weathering - may be phosphate bloom	27									
3		25.82	25.98	.16	SS/SLST	same as below	22									
4		25.98	27.18	1.20	SS/SLST	same as below, semi-stick core with 9 joints, joints contain pyritic sheen	25									
4		27.18	27.58	.40	SS/SLST	rubble as below										
4		27.58	28.98	1.40	SS/SLST	same as below with calcite stringers										
4		28.98	29.41	.43	SS/SLST	fine grain sandstone interbedded with dark gray carbonaceous siltstone, ripple bedded with small scale cross-beds, abundant joints and fractures, joints coated with calcite and a pyrite sheen										R4
5		29.41	30.59	1.18	SST	same as below										R4
5		30.59	30.85	.26	SST	light gray fine grain sandstone, mottled to cross-bedded with dark gray siltstone, 1 joints iron-staining, calcareous, some pyrite blobs										R4
5		30.85	31.12	.27	SLTST	dark gray, finely laminated calcite-filled fractures, irregular upper contact										R3
5		31.12	31.47	.35	SST	medium grain, salt and pepper with some darker bands, small scale cross-beds, contains .2 m unit of siltstone in center, calcite fills veins, undulose bedding near top, dip 16°	16									R4
NOTE: all core above 38.0 has calcareous matrix																

ALL LINEAR UNITS IN METRES

1:R&/OR S - GOLDR ASSOCIATES HARDNESS CODE
 RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ DIPPING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.f.b. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.		
5		31.47	31.67	.20	Shale	silty dark gray, finely laminated, friable, highly fractured, rusty weathering in upper 2 cm, calcareous matrix.											R4
5		31.67	23.10	.43	SST	fine grain, contains clasts of shale up to 2 cm in diameter near base of unit, small scale cross-bedding with calcite fractures											R4
5		32.10	32.57	.47	SLST/SS	siltstone dark gray, finely laminated, contains fine grain sandstone bands .06 m thick at .1 from base and .23 from base, sandstone bands show small scale cross-beds with silt											R3
5		32.57	32.67	.10	SST	rubble, very fine grain, small scale cross-beds with mud drapes, small scale truncated, dendritic, calcite-lined fractures											
5		32.67	33.01	.34	SST	fine to medium grain, small scale cross-beds, salt and pepper, calcite-filled fractures, rubblely at top											R4
6		33.01	33.41	.40	SST	very fine grain, small scale cross-beds with muddy drapes, fractures with calcite infilling becomes silty upsection											R3
6		33.41	33.61	.20	Shale	dark gray, fractured, polished surfaces											R2
6		33.61	33.91	.30	SS/SH	rubble, sandstone as described below, shale dark gray to black, carbonaceous, soft, friable											Rubble
6		33.91	34.26	.35	SST	medium grain, salt and pepper, sharp irregular base contact, grades finer upward, rubblely, calcite-filled fractures, becomes interbedded siltstone/sandstone at top											R4
6		34.26	34.78	.52	SLTST	dark gray, highly fractures, some darker gray bands visible	22										R3
6		34.78	34.87	.09	SST	medium grain, salt and pepper, light gray, grades into overlying siltstone, has calcite veining											R4
6		34.87	35.00	.13	SLTST	dark gray, siltstone, as below											
6		35.00	36.28	.28	Logr	core											
6		36.28	36.84	.56	SLTST	dark gray siltstone with a few fine grain light gray sandstone beds, 2 joints, iron-staining on joints											R4

ALL LINEAR UNITS IN METRES

1 = RA/ORS — GOLDER ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOGGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		READING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.	
										a.r.b.	residual					
6		36.84	37.54	.70	SLST/SS	interbedded dark gray siltstone, fine grain light gray sandstone, some minor cross-bedding a few calcite-filled fractures	22									R4
6		37.54	37.74	.20	SLST	interbedded medium and light gray										
7		37.74	37.95	.21	SS/SLST	interbedded dark gray siltstone and light gray very fine grain sandstone, slightly carbonaceous and very calcareous										R4
7		37.95	38.15	.20	SST	interbedded light and dark gray, very fine grain, very calcareous										R4
7		38.15	39.15	1.00	Shale	dark gray, with interbedded medium gray siltstone, very calcareous	18									R3
7		39.15	40.20	1.05	Shale	very dark gray, carbonaceous, silty, carbonaceous plant debris, siltstone is medium gray in some places, moderately calcareous	15-20									R3
7		40.20	40.66	.46	Shale	dark gray, carbonaceous										R3
7		40.66	40.72	.06	Shale	black, earthy										
7		40.72	40.80	.08	Shale	dark gray, carbonaceous										
7		40.80	40.88	.08	Shale	black, coaly, powder										
7		40.88	40.97	.09	Shale	dark gray, carbonaceous, iron-staining										
7		40.97	41.15	.18	Coal	dull										
7		41.15	41.25	.10	Coal	dull, powdery			1	10.10	0.72	10.87	19.55	59.58	1.0	
8		41.25	41.31	.06	Coal	dull, very soft, powder										
8		41.31	41.53	.22	Coal	dull										S5
8		41.53	41.79	.26	Coal	dull, very soft										S2
8		41.79	41.90	.11	Shale	black, coaly										
8		41.90	42.02	.12	Coal	dull										
8		42.02	42.49	.47	Shale	medium to dark gray, slickensides, some iron-staining, some coaly material										
8		42.49	42.74	.25	Shale	black, coaly, polished										S2
8		42.74	43.52	.78	lost	shale										

ALL LINEAR UNITS IN METRES

* RB/ORS - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ?	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b.	residual	ASH %	V.M. %	FC. %	F.S.I.		C.V.
8		43.52	43.71	.19	Coal	dull, earthy											S1
8		43.71	44.18	.47	Coal	dull, earthy											S1-S2
8		44.18	44.66	.48	Coal	dull, soft			2	14.79	0.61	12.47	18.88	68.65	3.0		S2-S3
8		44.66	44.86	.20	Coal	very soft											S2
8		44.86	45.60	.74	Coal	dull, some pyrite staining, slightly shaley in part											S4
8		45.60	45.82	.22	Shale	as below, coaly											
9		45.82	46.06	.24	Shale	dark gray, carbonaceous, iron-stain, carbonaceous plant debris											R3
9		46.06	46.48	.42	Coal	mainly dull, trace of bright, pyrite stain and plates											
9		46.48	46.90	.42	Coal	mainly dull with a trace of bright, pyrite stain and plates											
9		46.90	48.06	1.16	Coal	moderately bright with abundant pyrite stain and plates											S5
9		48.06	48.26	.20	Coal	dull, broken stick, with some bright											
9		48.26	48.99	.73	Coal	bright and dull, S-5, broken, some pyrite stain, 0.03 m shale split in middle											
9		48.99	49.48	.49	Shale	dark gray, carbonaceous, abundant coaly plant debris, coaly in part, trace pyrite stain on coal, 0.07 m coal near base, R2											
9		49.48	49.59	.11	Shale	as above											
9		49.59	49.79	.20	Coal	soft, crumbly, some pyrite stain, dull, S5											
9		49.79	49.92	.13	Shale	dark gray, carbonaceous, R3, plant debris											
10		49.92	50.95	1.03	Shale	silty, dark gray, carbonaceous with plant fragments on bedding planes, occasional siltstone band, light to medium gray, finely laminated, iron-staining on fracture planes, 3 joints											R3
10		50.95	52.20	1.25	Shale	as above with some fine grain sandstone units, non-calcareous, more rubblely toward base											R3
10		52.20	52.85	.65	SST	as above with thicker sandstone units in it, shale becoming siltier, badly broken at base											

ALL LINEAR UNITS IN METRES

1:RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
 •RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS 1
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	P.C. %	F.S.I.	
11		52.85	53.15	.30	SST	medium grain, salt and pepper, medium gray, coaly, rubbly, calcite-filled fractures with some iron-staining on fracture planes, 3 joints										R4
11		53.15	53.40	.25	SST	as above										R4
11		53.40	53.94	.54	SST	as above, finely bedded with coaly partings, joint along bedding exhibits iron-staining	23									
11		53.94	54.16	.22	SST	as above, rubble										
11		54.16	54.46	.30	SST	as above, semi-slick, lower .1 m iron-stain										
11		54.46	54.86	.40	SST	medium grain, coarser than above unit, salt and pepper, coaly calcite-filled fractures, calcareous irregular joints (2)										
11		54.86	55.01	.15	SST	rubble, as above										
11		55.01	55.45	.44	SST	rubble as above with coal on bedding planes										
11		55.45	55.72	.27	SST	sandstone as above, abundant calcareous joints, some pyrites and coal on joints, cleaner than above unit										R4
12		55.72	56.42	.70	SST	slightly calcareous, fine grain, very dark matrix, calcite on fracture planes, very rubbley										R3
12		56.42	56.92	.50	Lost	core										
12		56.92	58.27	1.35	SST	fine to medium grain, cleaner than above unit, calcite stringers, slightly calcareous, 11 joints, becomes highly fractured near base	22									R3
12		58.27	58.37	.10	SST	slightly more coaly, salt and pepper, very rubbley										
12		58.37	59.07	.70	SST	as above, ~.75 m lost core in this zone										
		59.07	59.82	.75	Lost	core										
13		59.82	60.12	.30	SST	hard, salt and pepper with dark wisps, fine to medium grain, cleaner than previously described unit, slightly calcareous										R4
13		60.12	60.24	.12	coaly	gouge - soft, gouge material, highly polished, slick										

ALL LINEAR UNITS IN METRES

1-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS 1
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SFAM)				MOIST % a.r.b. / residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
13		60.24	60.59	.35	SST	medium grain, dirty in spots, becomes fine grain near base, slightly calcareous (more so than previously described sandstone), some calcite-filled fractures, 3 joints										R4
13		60.59	61.50	.91	Lost	core - possible zone of lost core										
13		61.50	61.76	.26	Shale	coaly, highly fractured										
13		61.76	62.33	.57	Shale	silty, non-calcareous, 3 joints lined with calcite, some pyrite, medium to dark gray										R4
13		62.33	62.57	.24	Shale	as above, grades to siltstone below										
13		62.57	63.36	.79	SST	fine to medium grain, salt and pepper, very slightly calcareous, calcite-lined fractures, badly broken up in places, .5 m lost core in unit										R3
		63.36	63.86	.50	Lost	core										
13		63.86	64.66	.80	SST	as above										R3
14		64.66	65.41	.75	SST	as above	47									R3
14		65.41	65.61	.20	SST	as above, but with abundant coaly wisps and calcite-filled fractures										R3
14		65.61	66.41	.80	Lost	core										
14		66.41	67.06	.65	SST	medium to coarse grain, very coaly in places with some thin coal stringers, some calcite stringers, easily eroded, easily broken, fine grain bands										R2
14		67.06	67.41	.35	SLST/SS	siltstone to fine grain sandstone, badly broken, some polished coaly surfaces, ~2 m lost core in unit										R2
		67.41	69.41	2.00	Lost											
14		69.41	70.31	.90	SLST/SS	as above but less coaly, broken up, finely laminated	18									R3
14-15		70.31	71.01	.70	SST	fine grain near base, medium grain near top, less broken up and less coaly than above unit, coal on bedding planes and joint surfaces, ~5 joints										R4
15		71.01	71.21	.20	SST	very poorly sorted, very coarse to very fine grain, non-calcareous	45									

ALL LINEAR UNITS IN METRES

1-R&/OR S - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM. %	FC. %	F.S.I.		C.V.
										a.r.b.	residual						
15		71.21	71.71	.50	Lost	core											
15		71.71	72.41	.70	SST	as above, non-calcareous											
15		72.41	73.21	.80	Lost	core											
15		73.21	73.41	.20	SST	as above											
15		73.41	76.20	2.79	Lost	core - missing core (accumulation)											
15		76.20	77.70	1.50	Shale	dark gray, carbonaceous, abundant plant material, calcareous in some places, joints coated with calcite, rubble											
15		77.70	78.10	.40	Shale	silty, dark gray, carbonaceous, rubble											
15		78.10	78.45	.35	SST	non-calcareous, rubblely											
15		78.45	78.85	.40	SLTST	shaley, dark gray, carbonaceous, abundant fractures lined with calcite											
		78.85	79.40	.55	Lost	missing core											
16		79.40	80.10	.70	SLTST	shaley, dark gray, finely laminated, moderately calcareous, plant debris on bedding planes	19										R3
16		80.10	80.50	.40	Shale	silty, coaly, highly fractured											R3
		80.50	81.50	1.00	Lost	core - probably from unit just described											
16		81.50	82.20	.70	Shale	dark gray, carbonaceous with coaly material on bedding planes, calcite lining on joint faces, slightly calcareous, semi-stick core, no apparent bedding, 2 joints											R3
16		82.20	82.58	.38	Shale	as above											
16		82.58	83.88	1.30	SLTST	undulose, fine laminations, small scale cross-beds, joints lined with calcite, coaly wisps	23										R4
16-17		83.88	84.83	.95	Shale	very dark gray, carbonaceous, abundant plant material, silty in some places, becoming increasingly siltier towards base, becomes very friable, brittle and broken near base	20										R2
17		84.83	85.57	.74	SLTST	shaley in parts, highly fractured, abundant joint planes	27										R3-R2

ALL LINEAR UNITS IN METRES

1-R4/OR 5 - GOLDER ASSOCIATES HARDNESS CODE
 *RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % O.F.B. / residual	ASH %	VM %	FC %	F.S.I.		C.V.
17		85.57	86.35	.78	SLTST	bedding planes lined with pyrite and coal, dark gray, 4 joints, becomes shaley in middle of unit										R3
17		86.35	86.55	.20	Shale	coaly, polished and slickensided, very dark gray, rubblely, calcareous coal on polished surfaces										R3
17		86.55	87.95	1.40	Shale	pyrite sheen on joint faces, very dark gray, some plant debris on bedding planes, some silty stringers and joints, non-calcareous										R3
17		87.95	88.58	.63	Shale	as above, semistick core										R3
17-18		88.58	89.58	1.00	Shale	as above, highly fractured and broken										R3
18		89.58	91.08	1.50	Shale	as above, semi-stick core, 5 joints										R3
18		91.08	92.08	1.00	Shale	as above, semi-stick, with cleaner joint faces										R3
18		92.08	92.68	.60	Shale	very dark gray, rubblely, coaly, some plant debris on fractures										R2
18-19		92.68	93.38	.70	Shale	as above										
19		93.38	93.53	.15	Shale	rubble, as above										
19		93.53	93.88	.35	Lost	core - possible lost core in shale rubble zone										
19		93.88	94.38	.50	Lost	core - core loss (accumulated)										
19		94.38	95.78	1.40	Shale	as previously described but not as rubblely										
19		95.78	95.98	.20	Shale	silty, brittle, rubblely, very dark gray, sheared zone										
19		95.98	96.13	.15	Shale	silty, some coal specks, calcite on bedding planes, 1 joint	23									
19		96.13	97.47	1.34	Shale	as above, becomes siltstone towards base										
20		97.47	97.97	.50	SLT/SS	interbedded siltstone and very fine grain sandstone, siltstone is very dark gray, sandstone is light gray, non-calcareous										R4
20		97.97	98.73	.76	Shale	very dark gray, some coaly material, some joints are polished, some pyrite and calcite lining joint surfaces										R3

ALL LINEAR UNITS IN METRES

1-RB/OR 5 - GOLDER ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	MOIST %		ANALYTICAL DATA					REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				a.r.b.	residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
20		98.73	98.97	.24	Lost	core											
20		98.97	99.22	.25	Coal	soft, powdery, dull			↑								S2
20		99.22	100.07	.85	Lost	core - coal			3	(98.97-100.10 m)							
20		100.07	100.17	.10	SST	very fine grain, abundant coal throughout			↓	7.90	0.78	7.64	18.34	74.04	1.0		R4
20		100.17	100.80	.63	Lost	core - coal			↑								
20		100.80	101.05	.25	Coal	powdery with some small chunks, dull, soft											S2
		101.05	101.40	.35	Lost	core - coal											
20		101.40	102.24	.84	Coal	soft, dull, powdery with some fragments, occasional shaley partings											S2
		102.24	102.50	.26	Lost	coal											
20		102.50	102.60	.10	Coaly Shale	black, highly sheared, polished											R2
		102.60	102.70	.10	Lost	shale											
20		102.70	103.40	.70	Coal	powdery, dull, contains 0.03 m coaly shale partings near top											S2
		103.40	104.00	.60	Lost	coal			4	Lower Seam							
21		104.00	104.16	.16	Coal	as above				8.82	0.87	12.13	18.43	69.46	1.0		S2
		104.16	104.30	.14	Lost	coal											
21		104.30	104.50	.20	Coaly Shale	rubble, highly sheared, dull, earthy, soft, almost mud in places											S3
		104.50	104.60	.10	Lost	core											
21		104.60	105.62	1.02	Coaly Shale	as above, contains some hard shale bands 0.02 m in thickness that are ~ R3, abundant coal on joint surfaces, unpolished											
		105.62	105.70	.08	Lost	core											
21		105.70	106.10	.40	Coaly Shale	as above											
21		106.10	106.68	.58	Coal	powdery, dull, soft											S2
21		106.68	107.32	.64	Coal	as above with some bright fragments											S2

ALL LINEAR UNITS IN METRES

1-R&OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION [%]

FF - FRACTURE FREQUENCY

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. R.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH BY TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.c.b.	MOIST % residual	ASH %	V.M. %	F.C. %	F.S.I.	
21		107.32	107.60	.28	Shale	coaly, polished surfaces on joints (3)										R3
21		107.60	108.20	.60	Lost	shale										
21		108.20	108.46	.26	Coal	soft, powdery, very dirty										S2 Molded by Fingers
		108.46	109.80	1.34	Lost	coal										
22		109.80	110.30	.50	Shale	black, coaly, dull, very slightly calcareous, joints do not appear to be polished			5	3.09	0.41	88.91			0.0	R2
22		110.30	110.65	.35	Shale	very dark, coaly, highly fractured, dull, coaly, polished surfaces										R2
		110.65	112.60	1.95	Lost	shale										
		112.60	114.05	1.45	Lost	coal										
22		114.05	114.51	.46	Coal	powdery, dirty, with some fragments near base, soft										S3 near base
22		114.51	114.65	.14	Coal	shaley, dull, hard, abundant polished surfaces										R2
22		114.65	114.80	.15	Shale	coaly										R2
		114.80	115.38	.58	Lost	coal										
22		115.38	116.30	.92	Coal	soft, powdery										S2
22		116.30	116.80	.50	Shale	very silty, coal on bedding surfaces near top, becomes increasingly silty near base, some irregular fractures, some calcite stringers, non-calcareous, no apparent bedding										R3
22		116.80	116.90	.10	Shale	as above										R3
22-23		116.90	118.35	1.45	SLTST	dark gray, coaly partings on bedding planes, 1 or 2 calcite stringers, faint quartz sheen lining joints (4), semi-stick, some fine laminations, bedding angle becomes shallower towards base, non-calcareous	28									R3
23		118.35	118.49	.14	SLTST	as above										R3
23		118.49	118.73	.24	SLTST	sheared zone - highly fractured, friable, siltstone breccia, calcite lining fracture surfaces, non-calcareous	25									R2
23		118.73	119.36	.63	SLTST	as above, non-calcareous										

ALL LINEAR UNITS IN METRES

1 = RB/0'S - GOLDR ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIP ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SFAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
23		119.36	119.99	.63	SLTST	as above, non-calcareous										
23		119.99	120.61	.62	SS/SLST	interbedded very fine grain sandstone and siltstone, siltstone is dark gray, sandstone is lighter gray, finely laminated, joint surfaces lined with calcite and pyrite, 5 joints (cross-joints), 2 bedding plane fractures	22									R3
23		120.61	121.00	.39	SLTST	dark gray, carbonaceous plant fragments, very minor amount of coal debris on some joint planes, no apparent visible bedding, minor amounts of pyrite	26									R1
23		121.00	121.48	.48	SLTST	as above with three cross-joints										
24		121.48	121.82	.34	Shale	silty with abundant plant fragments, dark gray, no visible bedding, some stickensides on joints, 2 joints, some silicate stringers										R3
24		121.82	122.29	.47	SST	fine grain to very fine at top, dark gray irregular bedding, 1 calcite-lined joint	35									R4
24		122.29	122.47	.18	Shale	silty dark gray, polished surface sub-parallel to bedding, 2 joints (smooth)										R4
24		122.47	123.17	.70	Shale	silty, coaly along polished joint surfaces, dark gray - carbonaceous, coaly in spots, plumose marks on one clean fracture, 3 joints, polished, coal-lined, silty near base, grades into sandstone below	27									R3
24		123.17	123.82	.65	SST	medium gray contains darker gray interbedded siltstone bands near base, 1 irregular joint plane	32									R4
24		123.82	124.00	.18	Shale	dark gray, no visible bedding										R3
24		124.00	124.30	.30	Shale	as above, grades to siltstone below										R4
24		124.30	125.75	1.45	SLTST	pyrite rich bands, medium gray, mottled with some shaley areas, coal present along bedding planes										R3
25		125.75	126.10	.35	SLTST	as above with Gypsum in fractures, highly polished surfaces										R3
25		126.10	127.68	1.58	SS/SLST	sandstone-siltstone interbedded, sandstone is fine grain to very fine grain, medium gray, salt and pepper; siltstone is medium to dark dark gray, calcite fracture planes, 2 joints, sandstone beds become less frequent down section	33									R3

ALL LINEAR UNITS IN METRES

SLICK CORE

R & OR S — GOLDR ASSOCIATES HARDNESS CODE

RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST %		ASH %	V.M. %	FC. %	F.S.I.		C.V.
										air d.	residual						
25	127.68	129.03	129.03	.75	SS/SLST	as above, sandstone exhibits small scale cross-bedding, 1 clean smooth joint	26										R3
25	129.03	129.90	129.90	.87	SS/SLST	as above											
25	129.90	130.30	130.30	.40	Shale	dark gray to black, bedding plane fracture shows slickensided coaly material											R3
26	130.30	130.54	130.54	.24	SLTST	medium dark gray, rubblely, 3 joints, no visible bedding, white soft crystal lined fractures (not calcite)											R3
26	130.54	130.74	130.74	.20	SLTST	as above, grades into sandstone below											
26	130.74	131.38	131.38	.64	SS/SLST	interbedded very fine grain sandstone and siltstone, sandstone is light to medium gray, salt and pepper with dark gray bands; siltstone is dark gray; gouge zone 38 from top of unit, it is 1 cm thick											R3
26	131.38	131.73	131.73	.35	SST	medium grain, salt and peppery, dolomite and calcite lining fracture planes, bedding oversteepened probable fold, highly fractured, silty toward base											R3
26	131.73	133.20	133.20	.47	SST	as above, semi-stick, gets siltier in lower .45 metres.	52										
26	133.20	133.60	133.60	.40	SLTST	dark gray, dirty, rubblely											R3
27	133.60	133.74	133.74	.14	SLTST	dark gray, carbonaceous, very rubblely											R3
27	133.74	134.10	134.10	.36	Lost	core, as above											
27	134.10	134.73	134.73	.63	SLST/SS	predominately silty at top, interbedded with very fine grain sandstone near base, bedding plane fracture slickensided with calcite, siltstone is described above, finely bedded, wavy bedding, 2 irregular joint planes											
27	134.73	134.83	134.83	.10	SST	medium grain, salt and pepper, dark gray, finely bedded, 1 joint plane											R4
27	134.83	135.17	135.17	.34	SST	as above, graded into unit below											
27	135.17	135.26	135.26	.09	SLTST	dark gray, no visible bedding											R3
27	135.26	135.50	135.50	.24	SST	as previously described											R4
27	135.50	135.58	135.58	.08	Shale	dark gray, platy, friable, 2 joint planes, carbonaceous											R2

ALL LINEAR UNITS IN METRES

† - R&ORS - GOLDER ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIP ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.r.b.	Residual						
27	135.58	135.65	.07	SST	rubble, as previously described											R4	
27	135.65	135.95	.30	SLTST	dark gray, no visible bedding, slightly carbonaceous											R3	
27	135.95	137.22	1.27	SST	medium grain, salt and pepper, medium gray, small scale cross-beds with mud drapes, becomes calcareous towards base, 2 joints		23									R4	
27	137.22	137.57	.35	SST	as above											R4	
28	137.57	137.80	.23	SLTST/SS	interbedded silt and very fine grain sandstone siltstone is very dark gray; sandstone is ripple bedded with small scale cross-beds, 2 joints, non-calcareous											R3	
28	137.80	138.40	.60	SST	fine grain, irregular jointing, dark gray, salt and pepper		33									R3	
28	138.40	138.48	.08	SLTST	dark gray, very finely laminated, some calcite stringers											R3	
28	138.48	139.15	.67	SST	medium gray, fine to medium grain, ripple bedded, grades into siltstone at base		28									R4	
28	139.15	139.80	.65	SLTST	grades down into silty-shale, dark gray, a few plant fragments, rubblely												
28	139.80	140.00	.20	SST	very fine grain, very dark gray, abundant plant fragments, polished on bedding planes		27									R3	
28	140.00	140.17	.17	Shale	breccia zone, crumbly											R2	
28	140.17	140.42	.25	SST	carbonaceous splits throughout, dark gray, rubblely, gouge zone at base ~0.05 m												
28	140.42	141.20	.78	SST	very fine grain, coaly matrix, very dark gray, finely laminated, some coal on bedding surfaces, 3 calcite stringers		24									R3	
29	141.20	141.56	.36	SST	as above, but harder, bedding steepens, becomes rubblely near base		38									R4	
29	141.56	141.76	.20	SST	rubble, as above												
29	141.76	142.40	.64	Lost	core												
29	142.40	142.90	.50	SST	medium grain, coaly, dark gray, rubblely												
29	142.90	143.43	.53	Shale	becomes silty 0.2 m from top, highly fractured and rubblely below												

ALL LINEAR UNITS IN METRES

1-#8/0R 5 - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		REFRACT. ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.f.	residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
29	143.43	143.51	.08	SST		as previously described											
29	143.51	145.11	1.60	SST		medium to coarse grain, coaly in places, a few calcite stringers, 4 joints, core is semi-stick to rubblely, becomes cleaner towards base	41										R3
29	145.11	145.51	.40	SST		as above, very rubblely											
	145.51	146.31	.80	Lost		core											
30	146.31	146.61	.30	SST		fine to medium grain, dark gray, plant fragment, coaly matrix, some polished joint surfaces, rubblely											
	146.61	147.40	.79	Lost		core											
30	147.40	147.65	.25	SH/Coal		friable, dull, except where polished											
30	147.65	147.70	.05	Lost		core											
30	147.70	147.80	.10	SST		medium gray, irregular fracture, coaly											R4
	147.80	147.90	.10	Lost		sandstone											
30	147.90	148.42	.52	Shale		dark gray, carbonaceous, plant fragments, contains 0.05 m siltstone split at 148.20											R2
	148.42	148.92	.50	Lost		core											
30	148.92	149.12	.20	SST		medium grain, carbonaceous plant debris on bedding surfaces, polished bedding plane fractures (2)	29										R4
30	149.12	149.17	.05	Shale		carbonaceous, fissile, platy											R2
30	149.17	150.22	1.05	SST		fine to medium grain, some thin silty layers, non-calcareous, joints polished or coaly (6 joints), medium gray, salt and pepper	28										R3
30	150.22	150.62	.40	SST		as above											R3
30	150.62	151.21	.59	SST		finer grain than above, some coal in matrix, carbonaceous plant debris on bedding surfaces, well bedded, 2 clean joints	34										R3
30-31	151.21	151.56	.35	SST		medium grain, salt and pepper, less plant debris than above unit (cleaner)											R3
31	151.56	152.36	.80	SST		rubble, as above, abundant cross-joints	33										R3

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	DIPPING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO						MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %		F.S.I.
31		152.36	153.56	1.20	SST											R3
		153.56	154.16	.60	Lost											
31		154.16	154.86	.70	SST											
31		154.86	155.50	.64	Lost											
31		155.50	155.85	.35	SST											R3
31		155.85	156.10	.25	Lost											
32		156.10	156.34	.24	Gouge											R2
32		156.34	156.99	.65	Shale											R2
		156.99	156.27	.28	Lost											
32		156.27	157.60	1.33	Shale											R3
32		157.60	159.05	1.45	Shale											R2
		159.05	159.10	.05	Lost											
32		159.10	159.50	.40	Shale											R2
32		159.50	160.25	.75	Shale											R3
32-33		160.25	160.66	.41	Shale											R2
33		160.66	160.71	.05	Shale											R3
33		160.71	161.03	.32	Shale											R3
33		161.03	161.65	.62	Coaly Shale											R2
		161.65	161.90	.25	Lost											

ALL LINEAR UNITS IN METRES

1-84/ORS - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.F. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC. %	F.S.F.		C.V.
33	161.90	162.06	.16	Shale	coaly, becoming harder and less fractured downsection, joints polished with coal (4)											R2
33	162.06	162.66	.60	Shale	as above											R2
33	162.66	163.42	.76	Shale	dark gray, coaly splits at 0.05 m intervals, brecciated near base, 6 curved joint faces - some coaly, some clean											R2-R3
33	163.42	164.10	.68	Shale	silty, coaly wisps, hairline cracks throughout core, medium to dark gray											R3
33	164.10	164.75	.65	Breccia	brecciated zone, shale at top - soft, carbonaceous, becomes silty towards base - more platy, fissile, highly polished											
33	164.75	164.98	.23	Shale	silty, light and dark gray, thin laminations	29										
34	164.98	166.58	1.60	Shale	upper 0.5 m highly sheared, silty bands, 2 calcite stringers, 2 joints	28										R3
34	166.58	167.08	.50	Shale	as above, very silty, 3 joints	28										R3
34	167.08	167.98	.90	Shale	carbonaceous, light gray with a few harder dark gray silty bands, highly sheared, 10 curved joints											R2
34	167.98	168.08	.10	SLTST	fractured, some curved polished surfaces, medium gray, no apparent bedding											R3
34	168.08	168.58	.50	SLT/SS	interbedded siltstone and very fine grain sandstone, siltstone is medium gray; sandstone is light gray, rubblely											R3
34	168.58	168.70	.12	Shale	carbonaceous, highly sheared and polished											R2
35	168.70	169.14	.44	SLTST	has polished joints, medium gray, no apparent bedding											R3
35	169.14	169.29	.15	Shale	as previously described											
					NOTE: Sheared coal: gouge could be caving to account for excess core											
35	169.29	169.69	.40	SLTST	medium gray, some darker bands	40										R3
35	169.69	169.71	.02	Gouge	breccia, lies sub-parallel to bedding											

ALL LINEAR UNITS IN METRES

1 - R&/OR 5 - GOLDER ASSOCIATES HARDNESS CODE
 •RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		MECHANIC ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	
35		169.71	170.41	.70	SLTST	ripple bedded, finely laminated, some very fine grain sandstone bands, light and dark gray bands, calcite on 5 joints, becomes rubblely towards base	43								R3	
35		170.41	171.66	1.25	SLTST	as above, becomes increasingly sandy towards base, joint planes smooth and planar	45								R3	
35		171.66	171.76	.10	SLTST	rubble, as above									R3	
		171.76	171.92	.16	Lost	core										
36		171.92	172.90	.98	SST	medium to coarse grain, salt and pepper, calcite-lined joints (?), light and dark gray banding, brittle with zones of high fracture density	28								R4	
36		172.90	173.50	.60	SST	as above, rubblely									R4	
36		173.50	174.90	1.40	SST	as above, pyrite crystals along some joints, 12 joints, bedding steepens towards base - 41° (probably due to cross-bedding)	30								R4	
		174.90	175.00	.10	Lost	sandstone										
36-37		175.00	176.50	1.50	SST	as above, more rubblely than above, no pyrite									R4	
37		176.50	177.70	1.20	SST	as above, 2 calcite stringers, 6 joints									R4	
		177.70	178.00	.30	Lost											
37		178.00	178.40	.40	SST	as above, but with darker matrix, some pyrite on 3 joints									R4	
37-38		178.40	179.47	1.07	SST	grades from unit above into fine to medium grain, pyritic with a dark gray matrix, more easily eroded than above unit, calcite-lined fractures, rubblely									R3	
38		179.47	179.87	.40	SST	grades into medium to coarse grain, salt and pepper, 2 polished coaly joint surfaces	28								R3	
38		179.87	180.00	.13	SST	medium grain, very coaly, sheared									R2	
38		180.00	181.65	1.65	Fault gouge	appears to be fault gouge, sandstone breccia in shaley, muddy matrix, non-calcareous									R2	
38		181.65	182.07	.42	Shale-breccia	highly sheared, disoriented, fragments are carbonaceous, dark gray shale									R3	
		182.07	182.88	.81	Lost	core										

ALL LINEAR UNITS IN METRES

F = RB/OR 5 - GOLDBER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*ROD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-307
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE 1:1	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.		
38		182.88	183.13	.25	Shale	dark gray, carbonaceous											R3
38		183.13	183.50	.37	SST	medium grain, salt and pepper, coal on bedding plane fractures, polished											R3
38		183.50	184.10	.60	SST	medium grain, coaly wisps, polished on joint surfaces, pyrite coating some surfaces											
39		184.10	184.53	.43	Shale	dark gray, carbonaceous											R3
39		184.53	185.39	.86	Breccia	as above											R2
		185.39	186.42	.03	Lost	core											
39		186.42	186.60	.18	Shale	dark gray, carbonaceous, no apparent bedding											R3
39		186.60	187.09	.49	Shale	as above, some coaly wisps, polished on joint faces, 5 joints											R3
		187.09	187.19	.10	lost	core											
39		187.19	188.09	.90	Shale	silty, medium to dark gray, some carbonaceous material on joint faces, calcite lining 5 joints, grades into sandstone below	29										R3
39		188.09	189.19	1.10	SST	medium grain, salt and pepper, coaly											R3
40		189.19	189.69	.50	Shale	silty, highly fractured, some breccia, dark gray, some slicks on joint surfaces											R3
40		189.69	190.57	.88	Shale	as above, some pyrite specks, calcite on 8 joints											R3
40		190.57	190.83	.26	SST	fine grain, coaly specks, interbedded with siltstone - very dark gray, 2 joints, slightly calcareous joints											R4
40		190.83	191.69	.86	SST	fine grain, abundant coaly material, very rubblely, some polished surfaces, joints are curved, some pyrite, some calcite lining fractures											
40		191.69	192.58	.89	SST	fine to medium grain with silty bands, some calcite on joint faces, sandstone is salt and pepper, light gray, some coaly material in vugs, ripple bedded, very slightly calcareous, 4 joints											
						END OF HOLE											

ALL LINEAR UNITS IN METRES

† HRS/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LPD-307
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

DATE	BEGIN	
	END	

HOLE No.	LPD-308
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AGE OF 5

HOLE PARTICULARS

LOCATION	LODGEPOLE		
	S.E. B.C.		
ELEVATION		HOLE BEARING (AZ ^m)	
TOTAL DEPTH	69.7	HOLE ANGLE (°)*	90

LOGGING

LOGS RUN	Density, Gamma, Sonic, Caliper
LOGGED BY	Roke Oil
OTHER TESTS	

COAL CORING PERFORMANCE

TOTAL	CORE DIAMETER	HQ
	LORE RECOVERED	52.93
	LENGTH CORED	62.58
	CORE RECOVERY	85 %

EXAMINATION

LOG USED	Gamma Density
No. OF SEAMS SAMPLED	
EXAMINER (S)	BWM
DATE	19.8.80

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC. %	F.S.I.		C.V.
										a.s.b.	residual	d.b.	d.b.	d.b.			
1		6.33	6.49	.16	SST	fine grain, laminated, weathering rusty brown, alternate light gray and dark gray laminations giving the rock a striped appearance, rubblely at top (ground core)											R3
1		6.49	6.55	.06	Shale	carbonaceous black with good shaley parting, strongly weathered	18										R1
1		6.55	7.05	.50	SST	as above but semi-stick	19										R3
1		7.05	7.30	.25	SST	as above but 3 - 4 mm wide coal bands, coal is black and strongly weathered											R3
		7.30	8.20	.90	Lost	core											
1		8.20	8.61	.41	Rubble	sandstone fine grain - grading into medium grain salt and pepper											R3
		8.61	9.31	.70	Lost	core											
1		9.31	9.63	.32	SST	as below											
1		9.63	10.08	.45	SST	medium grain to coarse grain, rock is speckled with white quartz, black clay and argillite, and orange limonite grains, equigranular, rock has a salt and pepper look overall, rubble core with many ground pieces											R3
		10.08	10.78	.70	Lost	core											
1		10.78	11.41	.63	SST	as above but fine grain to medium grain and argillite fragments are now 2 - 3 times larger than matrix. Coal veinlets also common.											R3
		11.41	12.21	.80	Lost	core											
1		12.21	12.86	.65	SST	as above, very rubblely core											R3
		12.86	13.76	.90	Lost	core											
2		13.76	14.02	.26	SST	as above, still very rubblely											R3
		14.02	14.42	.40	Lost	core											

ALL LINEAR UNITS IN METRES

* MEASURED FROM THE HORIZONTAL PLANE
 † R &/OR S — GOLDR ASSOCIATES HARDNESS CODE
 • ROD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No. LPD-308

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LPD-308
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS†	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	MOIST % Residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
2		14.42	14.88	.46	Rubble	sandstone salt and pepper, coaly, fine to medium grain											R3
		14.88	15.38	.50	Lost	core											
2		15.38	15.80	.42	SST	rubble as above but with occasional black, argillite clasts, ground core											R3
		15.80	16.50	.70	Lost	core											
2		16.50	16.90	.40	SST	medium grain, salt and pepper, occasional black argillite clasts, matrix is equigranular, orange weathering iron-mineral in matrix, broken core but breccia at bottom											R3
		16.90	17.10	.20	Lost	core											
2		17.10	17.46	.36	SST	fine grain, thinly bedded, dark gray and silty, semi-stick											R3
2		17.46	17.58	.12	Shale	black, coaly and carbonaceous, compact											R1
2		17.58	17.90	.32	Gouge	siltstone, compact, coaly, dark gray											R1
		17.90	18.80	.90	Lost	core											
2		18.80	19.14	.34	Breccia	sandstone, salt and pepper, medium grain, sandstone pebbles in carbonaceous, black clay-like matrix											R1
2		19.14	19.78	.64	SST	rubble, fine grain, thinly laminated, gray coaly fractures											R2
3		19.78	19.94	.16	SST	fine grain, thinly bedded, light gray, moderately calcareous, stick to semi-stick core											R3
3		19.94	20.63	.69	SST	as above, moderately calcareous, three fractures											R3
3		20.63	21.00	.37	SST	as above, broken to rubble core, one fracture, moderately calcareous											
3		21.00	21.95	.95	SST	fine grain, gray, silty, with light gray wispy trails of thin sandstone, stick core, moderately calcareous											R3
3		21.95	22.47	.52	SST	as above, rubblely at top											R3

ALL LINEAR UNITS IN METRES

† R4/R5 - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD - ROCK QUALITY DESIGNATION (%)

FF - - - FRACTURE FREQUENCY

HOLE No.	LPD-308
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOMGPPOLE
AREA	S.E. B.U.

HOLE No.	LPD-308
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. h. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.	
3		22.47	23.17	.70	SST	dark gray, fine grain, calcareous, white to light gray sandstone patches in dark gray matrix giving the rock a splotchy appearance, stick core										R3
3		23.17	23.55	.38	SST	fine grain, calcareous, light and dark gray, finely bedded, dark gray to black siltstone rip-up clasts, dark gray beds are more silty, rock weathers rusty brown	48									R3
		23.55	23.75	.20	Lost	core										
4		23.75	24.70	.95	SST	as above, moderate to strongly calcareous, semi-stick	35									R3
4		24.70	26.13	1.43	SST	as above, small-scale cross-bedding, rubblely at base	31									R3
4		26.13	26.84	.71	SST	strongly calcareous, light and dark gray, cross-bedded, fine grain, thinly bedded, black siltstone rip-up clasts, numerous thin white veinlets, rock is mostly light gray but dark gray wisps define cross-bedding and flaser structures.	55									R3
4		26.84	27.66	.82	SST	as above but colour is more evenly balanced between light and dark gray giving the rock a striped appearance, still strongly calcareous, 1 calcite-lined joint set	29									R3
5		27.66	27.76	.10	SST	as above										R2
5		27.76	28.57	.81	SST	as above, gouge at bottom, one fracture set	34									R2
5		28.57	28.67	.10	Lost	core										
5		28.67	29.28	.61	SST	as above, strongly calcareous										R2
5		29.28	29.69	.41	SST	medium grain, equigranular, very weakly calcareous, weakly laminated with dark silty bands, coaly fractures and lenses, rubblely and gouged at top										R2-R1
5		29.69	30.54	.85	SST	as above, broken to rubblely core										
5		30.54	31.42	.88	SST	as above, less coaly, semi-stick core	43									R3
5		31.42	31.76	.34	SST	as above, very rubblely										

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDBER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-308
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT LODGEPOLE
AREA S.E. B.C.

HOLE No. LPD-308
CONTINUED

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	▲ RECORDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO							MOIST % a. r. b.	ASH %	VM %	FC %	F.S.I.	C.V.		
6		31.76	32.0	.24	SST	as above, broken, semi-stick, yellow weathering - iron mineral speckled throughout matrix	38										R3
6		32.03	33.63	.60	SST	as above, semi-stick core	46										R3
		33.63	33.73	.10	Lost	core											
6		33.73	34.70	.97	SST	as above, semi-stick to broken, numerous 1 to 2 mm coaly and carbonaceous lenses parallel to bedding	36										R3
		34.70	34.90	.20	Lost	core											
6		34.90	35.87	.97	SST	as above, rubblely at top and bottom, broken core											
6		35.87	35.97	.10	Lost	core											
6-7		35.97	36.50	.53	SST	as above, very rubblely, some gouge zones											
7		36.50	36.59	.09	Coal	shaley, soft, dull, polished, flakey											S1
7		36.59	36.73	.14	Coal	shaley, black, soft, crenulated			1	13.34	3.77	7.75	18.43	73.62	1.0		S2
7		36.73	36.79	.06	Coal	as above											
7		36.79	37.16	.37	Coal	dull, powdery, soft, compact coal											S1
7		37.16	37.36	.20	Coal	coal dull, flakey, polished, powdery when crushed											S1
7		37.36	37.74	.38	Coal	granular and flakey, polished, polish gives it a bright appearance											S2
7		37.74	37.81	.07	Coal	bright and flakey			2	9.77	1.95	9.11	18.19	72.76	1.0		S2
7		37.81	38.10	.29	Coal	dull, powdery, compact											
7		38.10	38.22	.12	Coal	flakey and polished as before											S1
7		38.22	38.34	.12	Coal	dull, soft, powdery											S1
7		38.34	38.55	.21	Coal	flakey, strongly polished and slickensided, some pyrite flecks											S3
7		38.55	38.74	.19	Coal	as above											S2
7		38.74	38.94	.20	Coal	dull, soft, powdery, compact, as before											
7		38.94	39.24	.30	Lost	coaly shale											S1

ALL LINEAR UNITS IN METRES

1-R&/OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*ROD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No. LPD-308
CONTINUED

CORE & COAL CORE DESCRIPTION

PROJECT	LUDGEPOLE
AREA	S.V. R.C.

HOLE No.	LPD-308
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
7		39.24	39.88	.64	Coal	dull, soft, powdery as above			2							S1
7		39.88	39.98	.10	Shale	carbonaceous, coaly, crenulated, black										S2
8		39.98	40.48	.50	Coal	flakey, polished, as before										
8		40.48	40.67	.19	Coal	shaley, dark gray to black, pyrite specks, slicked surfaces										S2
8		40.67	41.07	.40	Coal	bright and flakey, bright due to polished surfaces										S1
8		41.07	41.17	.10	Coal	dull, soft, powdery										
8		41.17	41.31	.14	Coal	flakey, bright coal as before										
8		41.31	41.58	.27	Coal	flakey, polished coal										S1
8		41.58	41.73	.15	Coal	dull, soft, powdery to flakey										S1
8		41.73	41.93	.20	Lost	core										
8		41.93	42.09	.16	Coal	very shaley, dark gray, soft, flakey										S2
8		42.09	42.25	.14	SLTST	split - very coaly, polished surfaces with flattened, tarnished pyrite, siltstone is dark gray										R3
8		42.25	42.44	.19	Coal	granular to flakey, polished										S1
8		42.44	42.65	.21	Coal	dull, soft, powdery										S1
8		42.65	42.92	.27	Coal	dull, soft, powdery as above			2							S1
		42.92	43.12	.20	Lost	core										
8		43.12	43.24	.12	Coal	flakey, soft, polished as before										S1
8		43.24	43.29	.05	Coal	soft, flakey, powdery, dull with polished surfaces										
8		43.29	43.35	.06	Shale	coaly, black, polished surfaces, some coaly plant debris, rubblely core										S2
8		43.35	43.65	.30	Coal	compact, soft, dull, powdery										S1
8		43.65	43.75	.10	Coal	flakey, moderately hard, dull, compact with pyrite specks, polished surfaces										
8		43.75	43.79	.04	Coal	as above										

ALL LINEAR UNITS IN METRES

1 - #R/OR S - GOLDER ASSOCIATES HARDNESS CODE
 *RQD - ROCK QUALITY DESIGNATION [%]
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LPD-308
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No	LPD-308
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA					REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %		F.S.I.
										a.r.b.	residual					
8		43.29	44.20	.41	Coal	dull, soft, powdery, compact coal, as above										S1
8		44.20	44.32	.12	Coal	as above, but more flakey			2							
8		44.32	44.62	.30	Lost	core										
8		44.62	44.92	.60	Lost	core										
8		44.92	45.23	.31	Coal	soft, dull, powdery as before										S1
9		45.23	45.35	.12	Coal	soft, dull, powdery										S1
9		45.35	45.39	.04	SLTST	dark gray, carbonaceous										
9		45.39	45.52	.13	SLTST	as before										
9		45.52	45.60	.08	Shale	carbonaceous, coaly, dark gray-black, rubblely core										R2
9		45.60	45.85	.25	Lost	core										
9		45.85	46.39	.54	SLTST	as before, gouge to rubblely core, carbonaceous plant fragments										R3
9		46.39	46.42	.03	Coal	shaley, granular, bright										
9		46.42	46.49	.07	SLTST	as before, ground core										
9		46.49	46.64	.15	SLTST	as before, rubblely core										
9		46.64	46.67	.03	Shale	coaly and carbonaceous, coaly lenses have been polished										
9		46.67	46.97	.30	SLTST	dark gray, stick core, occasional white sandstone wisps and bands	35									R3
9		46.97	47.01	.04	Mud	strongly weathered siltstone, dull gray, soft										S1
9		47.01	47.06	.05	SST	rubble, as before										
9		47.06	47.10	.04	Coal	granular, dull but polished, soft										S1
9		47.10	47.39	.29	SLTST	as before, compact, strongly weathered, rubblely at base										
9		47.39	47.93	.54	SLTST	as before, stick core, carbonaceous plant fragments, 1 fracture										R2
9		47.93	48.39	.46	Shale	good shaley partings, coaly and carbonaceous, abundant plant debris, polished coal surfaces, dark gray	31									

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDBER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*ROD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No	LPD-308
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	L.P.D-308
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO						MOIST %	ASH %	V.M. %	FC %	F.S.I.	C.V.	
					AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				a.f.	b. residual					
9	48.39	48.65	.26	Coal	granular, bright at top to dull at base, shaley near base			3	4.71	0.95	74.96			0.0	S2
10	48.65	48.96	.31	SLTST	as before, abundant carbonaceous plant debris, semi-stick core										R2-R1
10	48.96	49.40	.44	SLTST	gray to dark gray, massive, 2 breccia zones 0.16 to 0.2 m wide, stick core										R1
10	49.40	49.98	.58	SST	fine grain, gray, equigranular, massive, 5 fractures, core semi-stick to broken, R1 where strongly fractured										R1-R3
10	49.98	50.46	.48	SST	as above										
10	50.46	51.52	1.06	SST	thinly bedded, dark gray silty bands and light gray sandstone beds give rock laminated appearance	43									R3
11	51.52	52.02	.50	SST	as above										
11	52.02	52.15	.13	SST	gouge										
11	52.15	52.67	.52	SST	as above, broken to rubble core, 3 fractures, occasional ellipsoid, dark gray siltstone clasts										R3
11	52.67	53.16	.49	Breccia	gray sandstone fragments in creamy sandstone gouge matrix										R1
11	53.16	53.65	.49	SST	fine grain massive light gray, carbonaceous plant fragments, rubble core										R3
11	53.65	53.78	.13	Breccia	siltstone dark gray, somewhat sandy										R1
11	53.78	54.08	.30	SST	laminated, laminations show bedding contortions, some weak cross-bedding, dark and light laminations give striping effect, gouge in breccia zone, stick core - rubble at base										
11	54.08	54.43	.35	SST	fine grain, somewhat silty, dark gray, very weak laminations, semi-stick core, breccia and crushed zones	44									R1
12	54.43	54.96	.53	SST	laminated as above, fine grain, broken to rubble core										R3
12	54.96	55.07	.11	Rubble											

ALL LINEAR UNITS IN METRES

† - RB/DR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

* RQD - ROCK QUALITY DESIGNATION (%)

ff - FRACTURE FREQUENCY

HOLE No.	L.P.D-308
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.G.

HOLE No.	LPD-308
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
12		55.07	55.59	.52	SST	alternate light and dark laminations giving rock striped appearance, semi-stick, 7 fractures clean, 1 fracture calcite-filled, laminations, discontinuous and wispy, some weak cross-bedding	45									R2
12		55.59	56.31	.72	SST	as above, but laminations strongly contorted into folds, core broken, brecciated and rubble at base										R1-R2
		56.31	56.41	.10	Lost	core										
12		56.41	57.65	1.24	SST	laminated as before, laminations do not show contortions, semi-stick, 1 clean fracture, small scale cross-bedding in laminations	37									
12		57.65	58.65	1.00	SST	strongly laminated, laminations are wispy and discontinuous, weak cross-bedding, stick core	44									R3
12		58.65	58.75	.10	SST	weakly laminated, salt and pepper, medium grain, stick core										R3
13		58.75	59.19	.44	SST	as above	36									
13		59.19	59.61	.42	SST	very coaly and carbonaceous, strongly weathered appearance, salt and pepper, medium grain, coal occurs as thin veinlets in sandstone, core semi-stick, rubble at base										R1
		59.61	59.81	.20	Lost	core										
13		59.81	60.30	.49	SST	fine grain, light gray, dark gray, wispy laminations	15									R3
		60.30	60.50	.20	Lost	core										
13		60.50	60.54	.04	Mud	appears to be strongly weathered, coaly, sandstone as above, core compact										
13		60.54	60.66	.12	Mud	as above										
		60.66	60.86	.20	Lost	core										
13		60.86	61.99	1.13	SST	weakly laminated as above, fine grain, stick core, 1 clean fracture										R2
13		61.99	62.01	.02	SST	coaly, as before										

ALL LINEAR UNITS IN METRES

1:R2/OR 3 - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

#F - FRACTURE FREQUENCY

HOLE No.	LPD-308
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No	LPD-308
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
13		62.01	63.12	.11	SST	massive, equigranular, medium grain, salt and pepper, stick core, core is moderately fractured, occasional .01 m carbonaceous fragments										R2
13		63.12	63.27	.15	SST	as above										
13		63.27	63.65	.38	SLST	coaly, dark gray, thinly laminated, occasional light gray discontinuous sandstone lenses, very thin coal lenses (.01 m) parallel to laminations	31									R2
13		63.65	64.22	.57	SST	weakly laminated salt and pepper, medium grain occasional 2 to 10 mm wide coal bands, core is stick but highly weathered and soft										
14		64.22	64.54	.32	SLTST	sandy in places and coaly, dark gray, massive, core is compact, soft, and strongly weathered										R1-R2
14		64.54	65.33	.79	SLTST	dark gray, massive, regular bands of light gray sandstone, contorted and brecciated at base, fracture surfaces coaly and slicken-sided, 2 fractures										R2
14		65.33	65.79	.46	SST	salt and pepper, clay rip clasts, medium grained, very weak laminations at base, core broken										R2
14		65.79	66.18	.39	SLTST	dark gray, massive, semi-stick										R2
14		66.18	67.73	.55	SLTST	as above, stick core										
14		67.73	68.91	.18	SLTST	as above, occasional thin light gray sandstone bands, stick to semi-stick core	14									
						END OF HOLE										

ALL LINEAR UNITS IN METRES

† = RB/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

=RGD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No	LPD-308
CONTINUED	

CORL & COAL CORE DESCRIPTION

PROJECT	LODGE
AREA	S.B. B.C.

DATE	BEGIN	Aug. 3/80
	END	

HOLE No.	LP-D309
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19

HOLE PARTICULARS

LOCATION	LODGEPOLE		
ELEVATION	1999.4	HOLE BEARING (AZ) ¹	0
TOTAL DEPTH	222	HOLE ANGLE (°) ²	Vert.

LOGGING

LOGS RUN	Calliper, Gamma, Density, Detail Density
LOGGED BY	Bob Davies
OTHER TESTS	2 Piezometers

COAL CORING PERFORMANCE

TOTAL	CORE DIAMETER	HQ
	LORE RECOVERED	185.77
	LENGTH CORED	215.77
	CORE RECOVERY	86.02 %

EXAMINATION

LOG USED	Gamma Density
No. OF SEAMS SAMPLED	2
EXAMINER (S)	T. Cole
DATE	Aug. 3/80

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECOVERY ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	P.S.I.	C.V.		
																	R4
1		6.02	6.44	.42	SST	coarse-grained, conglomeratic, salt and pepper											R5
1		6.44	6.50	.06	SST	medium to coarse grained, salt and pepper											R5
1		6.50	7.00	.50	Congl.												R5
1		7.00	7.50	.50	Lost	probably carbonaceous coaly shale											
1		7.50	7.60	.10	SST	fine grained, light gray with wispy dark gray siltstone stringers											R4
1		7.60	7.80	.20	Lost	sandstone											
1		7.80	7.90	.10	SST	rubble											
1		7.90	9.10	1.20	Lost	probably shale											
1		9.10	9.64	.54	Shale	dark gray, coaly debris, silty											R3
1		9.64	9.77	.13	SLTST	medium gray, slightly sandy											R3
1		9.77	10.50	.76	SLTST	medium gray, 2 joints											R3
1		10.50	11.20	.70	SLTST	as above, becoming sandy, 2 joints											
1		11.20	11.77	.57	SST	medium to coarse grained, salt and pepper, with some dark gray, probably silty interbeds, orange specks											
1		11.77	11.93	.16	Lost	sandstone											
2		11.93	12.00	.07	SST	rubble, as above											
2		12.00	13.53	1.53	SST	stick, as above, 4 joints (clean)											
2		13.53	13.93	.40	SST	as above											
2		13.93	14.13	.20	SST	fine grained, medium gray with convolute coaly lenses											R4
2		14.13	14.43	.30	SST	fine to coarse grained, broken stick to rubble, coal traces											R4

ALL LINEAR UNITS IN METRES

* MEASURED FROM THE HORIZONTAL PLANE

▲ ANGLE MEASURED FROM CORE AXIS

1 - R &/OR S - GOLDER ASSOCIATES HARDNESS CODE

• ROD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No. LP-D309

FILE No BA-211A
REVISED Nov 1978

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS		
		FROM	TO							MOIST %		ASH %	V.M. %	FC %	F.S.I.		C.V.	
										a.r.b.	residual							
2	14.43	14.59	.16	coal	Shaley coal, laminated												R2	
	14.59	14.84	.25	ss	Med. to coarse grained massive, orange specs, salt & pepper, 1 joint, broken stick												R5	
2	14.84	15.88	1.04	ss	As above, 3 joints													
3	15.88	16.28	.40	ss	As above thin coaly bed near base (.01 m), 1 joint, iron stained													
	16.28	16.70	.42	ss	As above, some coaly lenses													
	16.70	17.74	1.04	ss	Fine grain, light grey sandstone with dark grey thin siltstone beds, some dark grey siltstone clasts.	27											R4	
	17.74	19.22	1.48	ss	Medium to coarse grained, abundant coaly lenses at top, salt & pepper, orange specs, poorly defined bedding	25											R4	
3	19.22	19.72	.50	ss	As above becoming rubbly													
	19.72	20.40	.68	lost	Sandstone													
4	20.40	20.72	.32	ss	As above rubble.													
	20.72	21.49	.77	lost	Sandstone													
	21.49	22.02	.53	ss	As above rubble, more medium grained													
	22.02	22.52	.50	ss	Completely rubble.													
	22.52	23.85	1.33	lost	Sandstone													
	23.85	24.30	.45	ss	Salt & pepper, rubble.													R5
	24.30	24.50	.20	sh	Rubble, iron stained, silty, plant debris													R2
4	24.50	25.30	.80	lost	Shale													
	25.30	26.40	1.1	ss/slst	Interbedded fine grained, light grey sandstone and dark grey siltstone, laminated, slightly calcareous, siltstone is carbonaceous, ripple to cross-bedded	22											R3	
5	26.40	26.74	.34	ss/slst	As above													
	26.74	27.14	.40	ss/slst	As above													
	27.14	27.74	.60	ss	Fine to medium grained, slightly carbonaceous and coaly, appears weathered, mostly rubble, some stick at base, moderately calcareous												R3	

ALL LINEAR UNITS IN METRES

1 - #R/OR S - GOLDR ASSOCIATES HARDNESS CODE
 *RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No	309
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. / residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
3	27.74	27.81	.07	ss		As above, rubble.										
	27.81	27.97	.16	lost		Sandstone										
	27.97	28.84	.87	sist		Medium grey, sandy, massive, calcareous, broken to broken stick										R4
	28.84	29.82	.98			Siltstone										
	29.82	30.65	.83	sist		As above										
5	30.65	30.99	.34	sist		As above, increasingly sandy, iron staining, rubbly to stick jointing evident										
6	30.99	31.56	.57	sist		As above										
	31.56	31.90	.34	ss		Light grey sandstone, fine grained with dark grey siltstone interbeds, calcareous, 1 stick	26°									R3 - R4
	31.90	32.12	.22	shale		Dark grey, carbonaceous, silty, abundant plant debris, rubbly										
	32.12	32.50	.38	ss		Light grey, fine grained with dark grey siltstone interbeds, orange specs, seems to be slightly weathered, very calcareous, broken to rubble										R2
	32.50	32.54	.04	ss		Medium grained, salt & pepper, orange specs, massive, calcareous										
	32.54	32.66	.12	ss		As above										
	32.66	33.70	1.04	ss		Light grey, fine grained with some siltstone interbeds and clasts, calcareous	25°									R3 - R4
	33.70	34.03	.33	ss		As above, but is thinly cross-bedded throughout.										
6	34.03	34.79	.76	ss		Salt & pepper, medium grained, some dark grey siltstone clases, massive, very poorly defined bedding, calcareous, 2 joints										
7	34.79	34.99	.20	ss		As above										
	34.99	35.49	.50	ss		As above										R3 - R4
	35.49	36.36	.87	ss		Fine to medium grained, light grey with some dark grey wispy siltstone interbeds, a .02 m, laminated carbonaceous interval in middle, very slightly calcareous	23° to 27°									R3 - R4

ALL LINEAR UNITS IN METRES

† :R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		MEASURING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. r. b. residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.	
7	36.36	36.40	.04	ss		Coaly sandstone, laminated										
	36.40	36.50	.10	ss		Fine to medium grained, salt & pepper massive slightly calcareous										
	36.50	37.13	.63	ss		As above, 2 joints, a few small siltstone clasts										R3 - R4
	37.13	37.78	.65	ss		Light grey, fine to medium grained, with dark grey silty interbeds, 1 joint, massive, breaks along siltstone beds when hit, calcareous	14"									
	37.78	38.01	.23	ss		Salt & pepper, medium grained with some dark grey siltstone clasts, massive, very slightly calcareous										
	38.01	38.1	.09	ss		As above										R3 - R4
	38.1	38.81	.71	slst/ss		Dark grey siltstone with light grey inter-mixed fine grain sandstone occurrences (irregular wave action) mottled appearance, plant debris, calcareous										R3 - R4
8	38.81	39.23	.42	slst.		As above but decreasing in sandstone content										R3 - R4
	39.23	39.45	.22	slst.		Dark grey, carbonaceous, abundant plant debris										R3
	39.45	39.89	.44	lnst		Siltstone, as above										
	39.89	40.07	.18	slst.		As above, becoming shaley, slightly sandy										
	40.07	41.38	1.31	slst.		Dark grey, carbonaceous, plant debris										R3
	41.38	41.70	.32	slst.		As above										
	41.70	42.82	.12	coal		Dull, core is stick, however, it is very soft and can be moulded in hand. Powders very easily.	41.70	1	9.18	1.28	7.38	17.48	73.86	1/2		
9	42.82	43.22	.4	coal		As above, powdery										
	43.22	43.72	.50	lost		Coal										
	43.72	43.95	.23	coal		As above, breaks into small chunks when probed with nail										
	43.95	44.42	.47	coal coaly		Dull, soft, easily molded, powder										
	44.42	44.52	.1	shale		Shaley coal, powder										
	44.52	44.58	.06	coal		Soft, powdery										

ALL LINEAR UNITS IN METRES

1 - HRB/DRS - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		CORRECTION ANGLES (%)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	FC. %	F.S.I.	
9	44.58	44.75	.17	lost	Coal											
9	44.75	44.85	.1	coal	Dull, stick, soft but can't be molded											
9	44.85	46.20	.35	coal	Powdered stick, can be molded											
9	46.20	46.55	.35	coal	Slightly shaley, can be molded											
9	46.55	47.29	.74	lost	Coal											
9	47.29	47.37	.08	shale	Black, carbonaceous - coaly, polished, trace pyrite											
9	47.37	47.7	.33	coal & shale	Shale is polished, black & coaly, shale breaks out in irregular chunks as though intermixed with coal											
9	47.70	48.05	.35	lost	Coal											
9	48.05	48.35	.3	Coal	Soft, breaks into small pieces, 0.3 cm - powder in size (20% powder), cannot be molded but powders easily											
9	48.35	48.77	.42	coal	Dull, powder											
10	48.77	48.80	.03	coal	As above											
10	48.80	49.50	.70	lost												
10	49.50	49.86	.36	coal	Dull, possibly shaley, polished, powder - 0.0 m, size pieces, traces of pyrite											
10	49.86	49.99	.13	shale	Black, coaly, polished, pyrite stained, breaks with curved faces, slicked on curved faces											
10	49.99	50.91	.92	lost	Coal											
10	50.91	51.27	.36	coal	Dull, powder, polished											
10	51.27	51.40	.13	shale	Very dark grey, carbonaceous, waxy texture											S5
10	51.40	51.83	.43	coal	Powder to chunky, chunks can be ground to powder in fingers with slight difficulty											
10	51.83	51.93	.1	shale	Black, carbonaceous				2							S5
10	51.93	52.5	.57	lost	Coal											
10	52.5	53.0	.5	Coal	Powders easily, polished, dull											
10	53.00	53.64	.64	lost	Coal											

ALL LINEAR UNITS IN METRES

1:R&ORS - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

+RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	1.P-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOT	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. / residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.		
10		53.64	54.28	.64	Coal	as above											
10		54.28	55.08	.80	Coal	stick, very soft, powders easily, appears to be duller at bottom, polished											
11		55.08	55.14	.06	Shale	black, carbonaceous											
11		55.14	55.20	.06	Coal	powdered (fine)											
11		55.20	55.24	.04	Earthy	earthy material											
11		55.24	55.75	.51	Lost	shaley material											
11		55.75	55.92	.17	Shale	very dark gray, carbonaceous, iron-stained, signs of slickensides											R2
11		55.92	56.00	.08	Shaley	rubble			2								
11		56.00	57.03	.03	Coal	dull, shaley, pulverizes easily in fingers, some chunks resist pulverizing, probably shaley (0.01 m)											
11		57.03	57.10	.07	Shale	black, carbonaceous											R2
11		57.10	57.36	.26	Coal	dull, polished, shaley, can be powdered in part to 0.005 m in diameter											
11		57.36	57.48	.12	Lost	coal											
11		57.48	57.90	.42	Coal	as above, polished											
11		57.90	58.70	.80	Shale	dark gray, carbonaceous											R2
11		58.70	58.80	.10	Shale	rubble, as above											
11		58.80	59.40	.60	Shale	medium gray, can be partially powdered in hands, claystone-like, but probably due to movement											R2
11		59.40	59.80	.40	SST	fine grain, light gray, argillaceous, appears to be weathered											
12		59.80	60.10	.30	Lost	shale											
12		60.10	60.60	.50	SST	very fine grain, gray, weathered with fractured zones where core is very sandy, broken core, ground core at bottom											R2
12		60.60	62.15	1.55	SST	as above											

ALL LINEAR UNITS IN METRES

f:•R•/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	1.P-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ WEDGING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % d r b. residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
12		62.15	63.00	.85	Lost	coal band?										
12		63.00	63.50	.50	SST	as above										R2
12		63.50	63.85	.35	SST	as above but very rubblely and broken										
		63.85	64.20	.35	Lost	shale?										R2
12		64.20	64.61	.41	SS/SLST Intbdd	1-2 cm interbeds of dark gray to black siltstone beds in 1-2 cm light gray, fine to medium grain, massive, sandstone beds, semi-stick										R2
12		64.61	64.83	.22	SST	medium grain, light gray, massive with black siltstone wisps, stick core										R3
12		64.83	65.41	.58	SST	silty, dark gray with 1 cm medium grain, light gray sandstone interbeds, semi-stick core, black carbonaceous plant fragments	24									R2
13		65.41	65.71	.30	Lost	shale?										R2
13		65.71	66.40	.69	SST	medium grain, massive, salt and pepper, very rubblely core, coaly at top of unit										R2
13		66.40	66.48	.08	SST	as above										R2
13		66.48	66.68	.20	SLTST	finely laminated, broken core, carbonaceous, dark gray										R2
13		66.68	66.98	.30	SST	medium grain, salt and pepper, very coaly, rubblely, almost powdery										S2
13		66.98	67.81	.83	SST	medium grain, salt and pepper, massive, strongly fractured, dark gray to black, bright 1 cm coal seams, powdery, polished on shear surfaces, core is broken to rubblely										R1
		67.81	68.28	.47	Lost	core										
13		68.28	68.36	.08	SST	as above										R1
13		68.36	68.46	.10	SST	very coaly, dark gray to black, medium grain, massive										R1
13		68.46	69.26	.80	SST	as above, coaly										R1
13		69.26	69.62	.36	SST	as above										R1
14		69.62	69.90	.28	Coal	bright, flakey, hard, sandy at bottom										S2

ALL LINEAR UNITS IN METRES

1 = R & OR S — GOLDER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %		F.S.I.
										a.r.b.	residual					
14	69.90	71.30	1.40	SST	as previously described											R1
	71.30	71.50	.20	Lost	core											
14	71.50	72.64	1.14	SST	as above, less coaly, top has very rubblely zone, looks highly weathered											R1
14	72.64	73.20	.56	SST	medium grain, salt and pepper, very rubblely, paper thin coal stringers, massive, some ground core at the top											S5
14	73.20	73.76	.56	SST	as before, semi-slick		11									
	73.76	74.25	.49	Lost	core											
15	74.25	75.14	.89	SST	as above, ground and pulverized at base											R2
15	75.14	76.19	1.05	SST	as above, powdered in places, some bright coaly bands											R2
	76.19	76.49	.30	Lost	core											
15	76.49	77.47	.98	SST	as above, powdered in places, very broken at base											R2
15	77.47	77.89	.42	SST	rubble, as above											R2
15	77.89	78.03	.14	SST	as above											R2
16	78.03	78.76	.73	SST	as above											R2
16	78.76	79.65	.89	SST	as above with carbonaceous and coaly bands, easily broken, powdered in places, calcareous											R2
16	79.65	79.95	.30	SST	as above, very broken											R2
16	79.95	80.21	.26	Shale	medium gray, brecciated and compacted, carbonaceous fracture surfaces (polished), some coaly specks											R1
16	80.21	80.76	.55	Shale	as above, very silty											
16	80.76	81.38	.62	Shale	black, carbonaceous, some polished fracture surfaces, silty and brecciated at centre											R1
16	81.38	81.55	.17	Shale	as above											
17	81.55	81.60	.05	Shale	as above											

ALL LINEAR UNITS IN METRES

1-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 •RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE-McLATCHIE
AREA	S.F. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS	
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST %	ASH %	V.M. %	FC %	F.S.I.		C.V.
										a.r.b.	residual					
17		81.60	82.00	.40	SST	Fine grain, light gray, broken core, non-calcareous, polished clean joint surfaces										R3
		82.00	82.20	.20	Lost	core										
17		82.20	83.07	.87	Shale	dark gray, silty, semi-slick, some polished fracture surfaces										R2
17		83.07	84.48	1.41	Shale	as above										
17		84.48	85.72	1.24	Shale	silty, as above										R2
18		85.72	85.92	.20	Shale	as above										R2
18		85.92	86.32	.40	Shale	as above										R2
		86.32	86.70	.38	Lost	core - shale										
18		86.70	87.82	1.12	SST	very fine grain to fine grain, light gray, massive, indistinct bedding, broken and rubble in centre										R3
18		87.82	88.55	.73	SST	medium grain, salt and pepper, broken at top										R3
		88.55	88.80	.25	Lost	core										
18		88.80	90.14	1.34	SST	very fine grain, massive	26									R3
19		90.14	90.29	.15	SST	rubble, as above										R3
		90.29	92.05	1.76	Lost	core										
19		92.05	93.20	1.15	SST	as above, rubble in centre										R3
19		93.20	94.56	1.36	SST	medium grain, salt and pepper, powdered and compact at top, calcareous at base										
19		94.56	95.16	.60	SST	as above, calcareous, becoming coarser grain, calcite-filled fractures, calcite lining joint planes										R3
20		95.16	96.11	.95	SST	coarse grain, salt and pepper, calcite-filled fractures, calcareous, calcite lining joints, broken core										R3
20		96.11	97.34	1.23	SST	as above	24									R3
20		97.34	98.36	1.02	SST	as above, rubble at top, thin (1 cm) coal bands, coaly stringers, polished carbonaceous fracture surfaces, non-calcareous										R3

ALL LINEAR UNITS IN METRES

F - R4/OR 5 - GOLDER ASSOCIATES HARDNESS CODE

RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.f.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
21		98.36	98.42	.06	SST	stick core, medium to coarse grain, salt and pepper, non-calcareous, clean joints										
21		98.42	99.82	1.40	SST	as above, stick core, medium to coarse grain, salt and pepper, non-calcareous, clean joint surfaces										R3
21		99.82	101.31	1.49	SST	as above, compacted and powdered at base										S5
21		101.31	102.30	.99	SST	as above										
21		102.30	102.36	.06	SLTST	brecciated, compacted, medium gray										R1
22		102.36	102.71	.35	SLTST	breccia, as above										
22		102.71	103.02	.31	SLTST	breccia, as above										
22		103.02	103.72	.70	SLTST	light gray, massive, broken, fine grain sandy lenses										R3
22		103.72	104.12	.40	SLTST	breccia, as previously described										
22		104.12	105.53	1.41	SLTST	breccia, as above, powdered sandy lenses										
22		105.53	106.32	.79	SS/SLST	breccia, compact and powdery, carbonaceous strings, sandstone is medium grain, salt and pepper; siltstone is medium gray										R1
23		106.32	106.98	.66	SST	breccia, compact, calcite infilling fractures										R1
23		106.98	107.95	.97	SST	as above, coaly stringers and carbonaceous in places										
23		107.95	108.27	.32	SST	medium grain, salt and pepper										R3
23		108.27	108.95	.68	SST	as above, high broken, brecciated at base										
23		108.95	109.00	.05	SST	rubble, as above										
		109.00	110.20	1.20	Lost	core										
23		110.20	110.60	.40	SST	fine grain, coaly bands, broken and brecciated at top										R4
23		110.60	111.19	.59	SST	medium grain, with claystone lenses, 4 cm dull coal band near top										
23		111.19	111.42	.23	SST	as above, rubble, carbonaceous										

ALL LINEAR UNITS IN METRES

1-4R/OR 5 — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	T.P.-D309
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
24		111.42	111.81	.39	SST	as above, numerous claystone clasts										
		111.81	112.61	.80	Lost	core										
24		112.61	112.99	.38	SLTST	medium gray, rubblely at base										R3
24		112.99	113.96	.97	SLTST	as above with calcite-filled fractures and calcite along the joints										
24		113.96	114.81	.85	SLTST	as above, interbedded with very fine grain sandstone at bottom, laminated										
24		114.81	115.26	.45	SST	medium grain, salt and pepper, light and dark laminations	23									R4
24		115.26	115.36	.10	SST	as above										
24		115.36	115.84	.48	SST	medium grain, salt and pepper, massive, semi-stick										R4
25		115.84	116.57	.73	SST	medium grained, salt and pepper, coaly stringers, laminated, broken										R2
25		116.57	117.15	.58	SLTST	shaley, dark gray, calcite on joints										R3
25		117.15	117.41	.26	SLTST	as above, brecciated										
25		117.41	117.91	.50	SST	as previously described, broken core, rubble at base										
25		117.91	119.19	1.28	SST	as above, highly broken										
25		119.19	119.25	.06	SST	as above										
26		119.25	119.99	.74	SST	breccia, as above										
26		119.99	120.51	.52	SST	as above, stick core										
26		120.51	121.33	.82	SST	as above, stick core										
26		121.33	121.98	.65	SST	medium grain, salt and pepper, light and dark laminations, polished carbonaceous bedding planes, small scale cross-beds	24									R3
26		121.98	122.16	.18	SST	as above										
26		122.16	123.28	1.12	SST	medium grain, salt and pepper, small scale cross-beds at top										R4
27		123.28	124.87	1.59	SST	as above, stick core, no cross-beds, massive										

ALL LINEAR UNITS IN METRES

† RB/QR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQ — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	T.P.-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	1.P-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.r.b.	residual						
27	124.87	126.46	1.59	SST	as above												
27	126.46	127.89	1.43	SST	as above												
28	127.89	128.07	.18	SST	fine grain, light gray, carbonaceous partings												R3
28	128.07	129.30	1.23	SST	as above, laminated, slightly polished joint planes												R3
28	129.30	130.71	1.41	SST	as above, brecciated and powdered in centre, calcite on fractures												
28	130.71	130.93	.22	SST	as above, broken core												
28	130.93	131.03	.10	SLTST	fine grain, light gray, sandy laminations, polished carbonaceous bedding surfaces												R3
28	131.03	131.48	.45	SST	as previously described, brecciated at top												
29	131.48	131.86	.38	SST	medium grain, salt and pepper, rubbly, carbonaceous, lined joints												R3
29	131.86	132.17	.31	SST	as above												R3
	132.17	133.50	1.33	Lost	core												
29	133.50	134.50	1.00	SLTST	laminated, calcite on joints, medium gray, some small-scale cross-beds												R3-R4
29	134.50	135.20	.70	SLTST	as above												
29	135.20	135.43	.23	Coal	flakey at top, powdered at base, bright flakes, powder is dull			135.2									
	135.43	135.58	.15	Lost	core				3	5.25	1.03	16.33	17.61	65.03	2		
29	135.58	135.80	.22	Coal	shaley, pyrite flecks, compact, friable, dark gray			135.72									
29	135.80	135.89	.09	SLTST	coaly, pyrite flecks, dark gray, friable												R1
	135.89	136.00	.11	Lost	core												
29	136.00	136.19	.19	Coal	shaley, as previously described												S4
29	136.19	136.30	.11	Shale	coaly, pyrite flecks				4	1.40	5.21	18.14	17.48	62.92	3½		R1
29	136.30	136.53	.23	Coal	bright, powdery												S4
30	136.53	136.66	.13	Coal	bright and dull, flakey, pyrite flecks												S5

ALL LINEAR UNITS IN METRES

1:RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
 -RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	1.P-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McINTYRE
AREA	S, E, B, C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC. %	F.S.I.		C.V.
30		136.66	136.70	.04	Coal	powdery, dull with bright, small 2 cm interbed of shaley coal.										S1
30		136.70	137.46	.76	Coal	shaley at top, bright, powdery										S1
30		137.46	137.56	.10	Coal	shaley at base, bright, powdery										S2
30		137.56	137.70	.14	Coal	bright, powdery										S3
30		137.70	138.09	.39	Coal	dull with bright, powdery										S2
		138.09	138.70	.61	Lost	shaley coal										
		138.70	139.27	.57	Lost	coal										
30		139.27	139.63	.36	Coal	bright, powdery										S3
30		139.63	139.91	.28	Coal	bright, powdery										S2
30		139.91	140.11	.20	Coal	very bright, polished and powdery			4							S2
30		140.11	140.66	.55	Coal	bright and dull, powdery										S3
30		140.66	140.80	.14	Coal	shaley, polished surfaces										R1
30		140.80	140.95	.15	Coal	bright and dull, powdery										S3
31		140.95	141.06	.11	Coal	dull and bright, powdery, shaley at top										S3
31		141.06	141.25	.19	SST	fine grain, easily broken with fingers, light gray, carbonaceous material, calcareous										R1
31		141.25	142.63	1.38	SST	light gray, fine grain, numerous carbonaceous partings (polished), crumbly										R2
31		142.63	144.09	1.46	SST	as above										
31		144.09	144.81	.72	SST	fine grain, light gray, light and dark laminations, broken core										R3-R2
32		144.81	145.11	.30	SST	fine to medium grain, light gray, brecciated, rubblely										R2
		145.11	146.11	1.00	Lost	core										
32		146.11	147.15	1.04	SST	as above, calcite-filled fractures, some carbonaceous layers										
32		147.15	148.54	1.39	SST	fine to medium grain, light gray, brecciated										R2

ALL LINEAR UNITS IN METRES

F: R2/R3 - GOLDEN ASSOCIATES HARDNESS CODE

RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHER
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS*		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %		F.S.I.	C.V.
										a.r.b.	residual						
32	148.54	149.97	1.43	SST	as previously described, no carbonaceous layers												
33	149.97	150.02	.05	SST	as above												
33	150.02	151.17	1.15	SST	as above, calcareous												
33	151.17	152.56	1.39	SST	as above, brecciated at base, calcareous												
33	152.56	153.71	1.15	SST	fine grain, light gray, calcite-filled fractures, rubblely at top and base, calcareous												R4
33	153.71	153.79	.08	SST	sandstone rubble, as above												
	153.79	154.79	1.00	Lost	core												
34	154.79	155.97	1.18	SST	breccia, as previously described, calcareous												R2
34	155.97	157.37	1.40	SST	fine grain, calcareous, light gray, rubblely at top, semi-stick in center, calcite-filled fractures, carbonaceous partings												
	157.37	158.37	1.00	Lost	core												
34	158.37	158.67	.30	SST	as above		36										
34	158.67	159.77	1.10	SST	fine grain, brecciated, calcareous, calcite-filled fractures, rubblely at base												R2
35	159.77	159.82	.05	SST	fine grain, light gray, laminated in places, calcite veins												R3
35	159.82	160.88	1.06	SST	as above												
35	160.88	161.14	.26	SST	dark gray, fine grain, carbonaceous												R3
35	161.14	162.54	1.40	SST	as previously described, fine grain, light gray, laminations, calcite veins, stick core, rubblely at base												
	162.54	163.54	1.00	Lost	core												
35	163.54	164.48	.94	SST	as above												
36	164.48	164.52	.04	SST	as above												
36	164.52	164.67	.15	Shale	brown, compact, carbonaceous												S3
36	164.67	164.93	.26	SST	fine grain, carbonaceous, calcite on joints, calcite stringers												R2

ALL LINEAR UNITS IN METRES

†:RB/OR S — GOLDR ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.	
36	164.93	166.25	1.32	SS/SH	shale is as previously described, sandstone as above, polished carbonaceous surfaces, calcite on fracture surfaces, lamination at base											R2-R3
36	166.25	167.67	1.42	SST	fine grain, light gray, calcite veins, calcite-lined joint planes, carbonaceous lined joint planes, stick core at base											R3-R4
36	167.67	168.13	.46	SST	as above, laminated, calcareous											
37	168.13	168.82	.69	SST	as above, calcareous											
37	168.82	169.03	.21	SST	as above											
37	169.03	170.34	1.31	SST	fine grain, dark gray, non-calcareous, good stick core in centre, calcareous at base, calcite lining joint planes											R3
37	170.34	171.32	.98	SST	fine grain, medium gray, rubblely in center, calcite veins, some laminations											
37	171.32	171.68	.36	SST	as above											
38	171.68	172.66	.98	SST	very fine grained, calcite-filled fractures, calcite-lined joints	22										R4
38	172.66	172.79	.13	SLTST	carbonaceous, calcite-filled fractures calcareous											R2
38	172.79	172.82	.03	SS/SLST	polished carbonaceous joints, calcareous											R3
38	172.82	173.34	.52	SS/SLST	laminated, calcite-filled fractures, calcite-lined joints, core is highly broken, carbonaceous plant material, carbonaceous joint surfaces, calcareous											R3
38	173.34	173.54	.20	SLTST	carbonaceous, calcite veins, pyrite specks, black, calcareous											
38	173.54	173.95	.41	SST	very fine grained, light gray, finely laminated, brecciated in center, calcite-filled fractures, calcareous											R3
38	173.95	175.02	1.07	SST	as above, with pyrite flecks on joint surfaces, calcite on joint surfaces, broken in center and at base, calcareous											
38	175.02	175.68	.66	SST	fine grain, brecciated, calcite-filled fractures											R1

ALL LINEAR UNITS IN METRES

† R&/OR S — GOLDEN ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		WEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.		
39		175.68	176.08	.40	SST	fine grained, light gray, massive, calcite-filled fractures, calcite lining joint planes, broken core, rubblely at base, calcareous											R3
		176.08	177.08	1.00	Lost	core											
39		177.08	177.86	.78	SST	as above, highly broken											
39		177.86	178.46	.60	SST	as above, very rubblely at center and base											
39		178.46	178.52	.06	SST	rubble, as above											
		178.52	179.52	1.00	Lost	core											
39		179.52	179.60	.08	Shale	brown to black, compact, carbonaceous, calcareous											R1
39		179.60	179.81	.21	SST	very fine grain, light and dark laminations, calcite lining joints, load cast at base, calcareous	30										R3
39		179.81	179.94	.13	SLTST	dark gray, calcite-lined fractures, calcite stringers, polished carbonaceous fracture surfaces											R3
39		179.94	180.56	.62	SS/SLST	sandstone is very fine grain, light gray, laminated; siltstone is medium gray, coaly stringers, calcite-lined joint planes, calcite stringers, rubblely at base											R2
39		180.56	181.23	.67	SS/SLST	as above, calcareous											
40		181.23	181.87	.64	SS/SLST	as above, semi-stick, calcareous											
40		181.87	183.38	1.51	SS/SLST	as above, calcareous											
40		183.38	184.23	.85	SS/SLST	as above, carbonaceous and rubblely at base, calcareous											
40		184.23	185.13	.90	SS/SLST	as above, load casts, 1 m carbonaceous shale band in center											R3
41		185.13	185.23	.10	SS/SLST	sandstone is very fine grain, medium gray, numerous laminations and small-scale cross-beds, loading evident on interface between siltstone and sandstone; siltstone is medium to dark gray, calcite stringers, calcite on fracture surfaces, polished carbonaceous joints	30										R3

ALL LINEAR UNITS IN METRES

1-R&/OR S — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										o.r.b.	residual						
41		185.23	186.51	1.28	SS/SLST	as above	20										
41		186.51	187.91	1.40	SS/SLST	as above											
41		187.91	188.79	.88	SS/SLST	as above											
41		188.79	189.03	.24	SS/SLST	as above											
42		189.03	190.09	1.06	SS/SLST	as above, rubblely at base											
42		190.09	190.67	.58	SST	as above											
42		190.67	191.12	.45	SST	very fine grain, some calcite stringers, broken core										R2	
42		191.12	191.40	.28	SST	fine grain, some laminations, some calcite stringers, calcite on fracture surfaces, R2 at base										R4	
42		191.40	192.69	1.29	SS/SLST	as previously described	4										
43		192.69	192.76	.07	SS/SLST	as above											
43		192.76	193.89	1.13	SS/SLST	higher percentage of siltstone than before, as above											
43		193.89	194.62	.73	SS/SLST	as above, rubblely at base	26										
43		194.62	195.82	1.20	SS/SLST	as above											
43		195.82	196.05	.23	SS/SLST	as above											
44		196.05	196.96	.91	SS/SLST	as above with .1 m claystone band, 1 cm bright coal band in center and at base, smooth carbonaceous joint surfaces										R3	
44		196.96	198.46	1.50	SS/SLST /SH	sandstone is very fine grained, laminated; shale is black carbonaceous; siltstone is dark gray, convolute bedding due to soft sediment deformation, polished carbonaceous joint surfaces, calcite-filled fractures, calcite lining joint planes	12									R1 - R3	
44		198.46	199.21	.75	SS/SLST /SH	as above, 1 cm coal bands throughout, rubblely at base, core is extremely broken											
		199.21	200.21	1.00	Lost	core											
44		200.21	200.80	.59	SS/SLST /SH	as above											

ALL LINEAR UNITS IN METRES

†:R6/OR 5 — GOLDER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS 1	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.r.b.	residual						
45	200.80	201.15	.35	SS/SLST	as above, broken core												
				/SH													
45	201.15	202.17	1.02	SS/SLST	rubblely at base		30										
				/SH													
45	202.17	203.15	.98	SS/SLST	as above												
				/SH													
45	203.15	204.27	1.12	SS/SLST	as above, 1 cm calcite vein near top												
				/SH													
45	204.27	204.45	.18	SS/SLST	as above												
				/SH													
46	204.45	205.60	1.15	SS/SLST	as above		27										
				/SH													
46	205.60	207.12	1.52	SS/SLST	as above												
				/SH													
46	207.12	207.57	.45	SS/SLST	as above												
				/SH													
46	207.57	208.46	.89	SS/SLST	as above												
				/SH													
47	208.46	208.72	.26	SS/SLST	as above, carbonaceous surfaces on joints, rubble, highly broken core												
				/SH													
	208.72	209.72	1.00	Lost	core												
47	209.72	210.25	.53	SST	as above, small-scale cross-beds, convolute bedding		12										R3
47	210.25	211.11	.86	SST	very fine grain, highly broken, massive, brecciated at base, calcite veins and laminations at base, 1 cm carbonaceous shale parting in center												R2
47	211.11	212.34	1.23	SLTST	with small interbeds of fine grain sandstone and shale (carbonaceous), shale beds are more numerous towards base		9										R2-R3
47	212.34	213.10	.76	SLST/SH	as above		7										R2-R3
48	213.10	213.74	.64	SLTST	medium gray, laminations distorted due to soft sediment deformation, calcite lining fracture surfaces												R3

ALL LINEAR UNITS IN METRES

▲ R6/RS — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D309
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLAICHIE
AREA	S.E. B.C.

HOLE No.	LP-D309
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.r.b.	residual						
48		213.74	215.23	1.49	SLTST	medium gray, carbonaceous, lenses of light gray, laminated siltstone, calcite-filled fractures, calcite lining joints, carbonaceous joint surfaces	6										R2-R3
48		215.23	216.50	1.27	SLTST	as above, siltstone (light gray) interclasts											R2-R3
48		216.50	216.64	.14	SLTST	as above											R2-R3
49		216.64	217.75	1.11	SLTST	as above with calcite stringers, some parts are laminated and calcareous											R2-R3
49		217.75	219.16	1.41	SLTST	as above, carbonaceous, calcite filled fractures, brecciated near base and at center											R2-R3
49		219.16	220.35	1.19	SLTST	as above, calcareous bands and lenses, polished carbonaceous joint surfaces											
50		220.35	220.39	.04	SLTST	as above											
50		220.39	221.79	1.40	SLTST	as above											

ALL LINEAR UNITS IN METRES

T-R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D309
CONTINUED	

COAL & COAL CORE DESCRIPTION

PROJECT AREA	LOGGERS
McLATCHIE	

DATE	BEGIN	1.8.80
	END	3.8.80

HOLE No.	LP-D 310
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GEOL.	7
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HOLE PARTICULARS

LOCATION	Lodgepole S.E. B.C.
ELEVATION	1879.5
TOTAL DEPTH	73 Meters
HOLE BEARING (AZ ^o)	
HOLE ANGLE (°)*	90°

LOGGING

LOGS RUN	Caliper, gamma densit.
LOGGED BY	B. Davies
OTHER TESTS	

COAL CORING PERFORMANCE

CORE DIAMETER	HQ
CORE RECOVERED	67.25
LENGTH CORED	69.66
CORE RECOVERY	90.8 %

EXAMINATION

LOG USED	
No. OF SEAMS SAMPLED	None
EXAMINER (S)	B. McKinstry
DATE	4.8.80

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)			MOIST % o.r.b. residual	ASH % d.b.	V.M. % d.b.	FC % d.b.	F.S.I.	C.V.		
1		3.74	4.10	.26	SST	fine grain, brown, calcareous, massive, weathering rusty brown, black carbonaceous plant fragments										R3
1		4.10	4.26	.16	SST	rubble, as above										R3
1		4.26	4.40	.14	SST	rubble, as above										R1
1		4.40	4.94	.54	SLTST	breccia, matrix of coal cementing chunks of dark gray to black, massive, non-calcareous siltstone, compact										R1
1		4.94	5.09	.15	SST	medium grain, gray, massive, coaly and broken, salt and pepper texture										R3
		5.09	6.29	1.20	Lost	core										
1		6.29	6.54	.25	SST	rubble, medium grain, salt and pepper, ground core										R3
1		6.54	6.92	.38	SST	rubble, fine grain to medium grain, gray, rounded fragments, ground core										R3
1		6.92	7.82	.90	SST	breccia, fine grain, gray, massive, equigranular sandstone fragments, in dark gray silty matrix, compact										R1
1		7.82	8.51	.69	SST	breccia as above, compact										R1
162		8.51	8.73	.22	SST	medium to coarse grain, semi-stick, salt and pepper, equigranular, massive										R3
2		8.73	9.40	.67	SST	breccia as before, compact										R1
2		9.40	9.89	.49	SST	breccia as before, sandstone becoming very fine grain and dark gray, compact										R1
		9.89	10.40	.51	Lost	core										
2		10.40	10.56	.16	SST	medium grain to coarse grain, semi-stick, salt and pepper, equigranular, massive										R3
2		10.56	11.37	.81	SST	breccia, consists of both fine grain and medium grain sandstone fragments in silty matrix, compact										R1

ALL LINEAR UNITS IN METRES

* MEASURED FROM THE HORIZONTAL PLANE

▲ ANGLE MEASURED FROM CORE AXIS

† : R & / OR S — GOLDER ASSOCIATES HARDNESS CODE

* RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	310
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FILE No. BA-211A
REVISED Nov 1978

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	310
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	MOIST % residual	ASH %	V.M. %	FC %	F.S.I.	
2		11.37	11.82	.45	Lost	core										
2		11.82	12.85	1.03	SST	breccia, sandstone fragments are fine grain, dark gray, massive and fractured, much less matrix but still silty, compact, non-calcareous										R2
2&3		12.85	14.69	1.84	SST	broken and fractured, fine grain, medium gray, massive and in places a breccia, non-calcareous										R1-R2
3		14.69	16.15	1.46	SST	non-calcareous, fine grain, medium to dark gray, massive, equigranular, broken to semi-stick core, five clean fractures, silty at bottom, some fractures sealed with rock flour										R3
3		16.15	17.49	1.34	SST	fine grain, gray to dark gray, massive, equigranular, broken to semi-stick, some grinding of core, 6 fractures (clean)										R3
		17.49	17.79	.30	Lost	core										
4		17.79	19.36	1.57	SST	fine grain, gray to dark, laminated and banded, non-calcareous, laminae are composed of dark gray silty layers alternating with light gray sandstone bands, laminae width ranges from 1 mm - 2 cm, some weak cross-bedding, semi-stick	22									R3
4		19.36	19.93	.57	SST	as above										
4		19.93	20.84	.91	SLTST	dark gray, massive, non-calcareous, stick to semi-stick, carbonaceous plant fragments										R3
4&5		20.84	22.39	1.55	SLTST	as above, semi-stick to stick, 4 carbonaceous gouge-like zones (1 - 3 cm wide)										R3
5		22.39	23.76	1.37	SLTST	similar to above but occasional wispy bands of light gray sandstone, 1 - 2 cm wide, two very thin calcite microveinlets										R3
5		23.76	24.40	.64	SLT/SS	gradational contact between siltstone and sandstone, siltstone is gray to dark, massive, weakly carbonaceous, sandstone is gray to light gray, fine grain, equigranular and weakly laminated, core is rubblely										R3

ALL LINEAR UNITS IN METRES

† -R&ORS - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	310
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	310
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST % a.r.b. residual	ASH %	V.M. %	FC %	F.S.I.	C.V.		
5	24.40	24.98	24.98	.58	SST	fine grain, dark to medium gray, laminated, equigranular, still very silty with a .2 m siltstone band in middle of unit, broken core 1 joint set, calcite-filled, cross-cuts core axis @ 45°										R3	
5	24.98	25.76	25.76	.78	SST	fine grain, medium gray, thinly laminated, non-calcareous, some weak cross-bedding, stick core, laminations are 1-2mm wide, 1 clean fracture, 1 calcite fracture	16										R1
5	25.76	25.96	25.96	.20	SST	light gray, fine grain, thinly laminated, equigranular, semi-stick core											R3
5&6	25.96	26.50	26.50	.54	SST	fine grain, dark to medium gray, laminated, semi-stick to stick, non-calcareous	22										R3
6	26.50	27.76	27.76	.26	SST (coaly)	fine grain, medium to dark gray, laminated with 1-3 cm coal bands parallel to bedding, coal is bright, flakey to powdery and hard, laminae are very thin, broken to semi-stick core	24										R3
6	27.76	29.23	29.23	.47	SST (coaly)	fine grain, medium to light gray, banded; medium to dark gray bands are fine grain to very fine grain, massive and lacks coal bands; light gray bands are fine grain, salt and pepper with 1-3 cm coal bands as before, broken to semi-stick core											R3
6&7	29.23	30.37	30.37	.14	SST (coaly)	as above											R3
7	30.37	30.87	30.87	.50	SST (coaly)	as above, broken at top	04										R3
7	30.87	31.50	31.50	.63	SST	medium gray, fine grain, with some light gray medium grain sandstone bands, broken core, coaly polished joint surfaces											R3
	31.50	32.14	32.14	.64	Lost	core - siltstone/sandstone											
7	32.14	32.58	32.58	.44	SST/SLST	light gray, medium grain sandstone with interbeds of medium gray siltstone and fine grain sandstone, some silty clasts, coaly polished joint surfaces, cross-bedded, semi-stick											R3
7	32.58	33.02	33.02	.44	Lost	core											

ALL LINEAR UNITS IN METRES

1-#B/OR S - GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

#RD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	310
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	310
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	MAIN	LITHO DESCRIPTION AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)	BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA					REMARKS †	
		FROM	TO							MOIST % a.r.b. residual	ASH %	V.M. %	FC %	F.S.I.		C.V.
7	33.02	33.97	.95	SST		salt and pepper, fine to medium grain, becoming coarser at base, siltstone interclasts, coaly polished joint surfaces, broken at base										R3
7	33.97	34.14	.17	SST		medium to coarse grain, salt and pepper, coaly stringers										R3
7	34.14	34.50	.36	SS/SLST		sandstone is fine to medium grain, salt and pepper, siltstone is medium gray, coaly banded (bright) at -0.5cm thick, crushed and broken at base										R3
7	34.50	34.84	.34	SST		as previously described										
	34.84	34.97	.13	Lost		core										
8	34.97	35.52	.55	SST		as above with bright 0.5 cm thick coaly bands, polished coaly joint surfaces, pyrite flakes on fracture surfaces, broken at top										R3
8	35.52	36.76	1.24	SST		as above, some calcite-filled fractures and calcite-lined joint surfaces										R3
8	36.76	37.77	1.01	SST		as above, becoming very coarse in places	33									R3
8	37.77	38.00	.23	SST		as above										
9	38.00	38.15	.15	SST		as above, with pyrite flakes, broken										
	38.15	39.59	1.44	Lost		core										
9	39.59	39.19	.40	SLST/SS		sandstone is fine grain, light gray, siltstone is dark gray and shaley, calcite-filled fractures, carbonaceous, polished joint surfaces	29									
	39.19	39.74	.55	Lost		core										
9	39.74	40.35	.61	SST		as previously described										R3-R4
9	40.35	41.72	1.37	SST		as above, siltstone band in centre, very coaly (bright bands), very coarse grain in places										
9	41.72	42.97	1.25	SST		as above										
10	42.97	43.14	.17	SST		as above										
10	43.14	44.56	1.42	SST		as above, with pyrite flecks, bright coal bands, some silty interblasts, semi-stick										R3

ALL LINEAR UNITS IN METRES

† *R&OR S — GOLDIER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	310
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No	310
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS†	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.		
10		44.56	46.00	.44	SST	medium grain, salt and pepper, carbonaceous polished fracture surfaces, calcite-filled fractures and calcite-lined joints, pyrite filled fractures											
10		46.00	46.71	.71	SST	as above, with calcite-lined joints and carbonaceous polished joint surfaces, pyrite flakes on fracture surfaces											
11		46.71	47.35	.64	SST	medium grain, salt and pepper, small-scale cross-beds, calcite-lined fractures and joints, pyrite flakes, stick-core	21										R3
11		47.35	48.80	.45	SST	fine to medium grain, salt and pepper, light and dark laminations, bright coal bands, carbonaceous polished joint surfaces, calcite-filled fractures, pyrite flakes on fracture surfaces	7										R3
11		48.80	50.29	.49	SST	as above, stick core	17										R3
11		50.29	50.93	.64	SST	as above											
12		50.93	52.00	.07	SST	as above, with calcite-lined joint surfaces, no coaly bands											
		52.00	52.50	.50	Lost	wire											
12		52.50	53.66	.16	SST	medium grain, salt and pepper, massive, indistinct bedding, pyrite flakes on joint surfaces, calcite-lined joints											R3-R4
12		53.66	55.06	.40	SST	medium grain, coaly stringers, pyrite flakes and calcite on joints surfaces, coal (bright bands), coaly material is most numerous at top	22										
13		55.06	55.27	.21	SST	as above											
13		55.27	55.96	.69	SST	medium grain, salt and pepper, cross-bedded, finely laminated, calcite-lined joints, pyrite flakes on joint surfaces, carbonaceous bedding planes, polished joints	12										R3
13		55.96	56.90	.94	SST	medium to coarse grain, salt and pepper, massive, calcite-filled fractures, calcite-lined joints, pyrite flakes on joint surfaces, pyrite-filled fractures, polished coaly joint coatings, stick core at top, broken at base											R3

ALL LINEAR UNITS IN METRES

† R3/R4/S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No	310
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LONGPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	310
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.v.b.	residual	ASH %	V.M. %	FC %	F.S.I.	
		56.90	57.20	.30	Lost	core										
13		57.20	58.72	1.52	SST	as above, stick core	18									R3
13		58.72	59.52	.80	SST	as previously described (laminated), rubblely in centre	14									R3
		59.52	59.96	.44	Lost	core										
14		59.96	60.31	.35	SST	as above, with numerous calcite-filled fractures										R3
14		60.31	61.84	1.53	SST	as above with numerous bright coaly stringers and bands, pyrite-filled fractures										
14		61.84	62.15	.31	SST	as above with 3 cm thick coal band near top, becomes very coarse grain at base										
14		62.15	62.85	.70	SST	medium to coarse grain, salt and pepper with large mudstone interclasts, coaly bands and stringers, numerous calcite-filled fractures, pulverized in places										
14		62.85	63.83	.98	SST	coarse grain, salt and pepper, calcite-filled fractures, brecciated, some coaly wisps, slightly calcareous										
15		63.83	64.64	.81	SST	as above										
		64.64	65.60	.96	Lost	core - sandstone as above										
15		65.60	67.08	1.48	SLTST	dark gray, with fine laminations of light gray, fine grain sandstone, calcite-lined joint surfaces, carbonaceous plant fragments (polished) on bedding plane joints, stick core	4									R3
15		67.08	68.17	1.09	SST	very fine grain to fine grain, medium gray, laminated, some muddy, polished bedding plane joints	8									R3
15		68.17	68.53	.36	SST	as above, calcite and pyrite on joints surface										R3
16		68.53	68.85	.32	SST	as above, rubblely and broken at base										
16		68.85	70.35	1.50	SST	as above, brecciated in centre, semi-stick in the rest of the core										
16		70.35	71.86	1.51	SST	becoming coarser grained and more massive at base, stick core	12									R4

ALL LINEAR UNITS IN METRES

† :RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	310
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	310
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA							REMARKS			
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.	C.V.				
										a.r.b.	residual									
17		71.86	73.40	1.54	SST	as above														

ALL LINEAR UNITS IN METRES

- R&OR S — GOLDER ASSOCIATES HARDNESS CODE
- RQD — ROCK QUALITY DESIGNATION (%)
- FF — FRACTURE FREQUENCY
- ▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	310
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

DATE	BEGIN	
	END	August 20/80

HOLE No.	LP-D311
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OF 11

HOLE PARTICULARS

LOCATION	Lodgepole - MacLachlan		
ELEVATION	1835.6	HOLE BEARING (AZ°)	
TOTAL DEPTH	93.77	HOLE ANGLE (°)*	Vert.

LOGGING

LOGS RUN	Caliper, Gamma, Density
LOGGED BY	Rob Davies
OTHER TESTS	Piezometer

COAL CORING PERFORMANCE

TOTAL	CORE DIAMETER	HQ
	CORE RECOVERED	74.5
	LENGTH CORED	86.8
	CORE RECOVERY	85.8 %

EXAMINATION

LOG USED	Gamma Density
No. OF SEAMS SAMPLED	1
EXAMINER (S)	T. Cole
DATE	Aug. 18/80

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA						REMARKS†	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.r.b.	residual	d.b.	d.b.	d.b.			
1	6.90	7.84	.94	SLTST	Reamed												R3
1	7.84	8.70	.86	SLTST	very dark gray, carbonaceous, 2 joints, trace of plant debris, stick core												
1	8.70	9.56	.86	SLTST	as above, three joints												R3
1	9.56	10.12	.56	Shale	as above, one joint, silty in part, very dark gray, carbonaceous, stick core												R3
1	10.12	11.02	.90	SLTST	dark gray, carbonaceous												R3
1	11.02	11.96	.94	SLTST	as above, with a few light gray, fine grain beds @ \approx .15 m intervals												R3
2	11.96	12.53	.57	SLTST	Three joints, as above but becoming more sandy, stick core												R3
2	12.53	13.36	.83	SLTST	as above, rubbly at bottom with some iron-stains												R3
2	13.36	14.38	1.02	SLTST-SS	dark gray, carbonaceous with cross-bedded light gray, fine grain sandstone, 3 joints												R3
2	14.38	15.40	1.02	SLT-SS	as above, four joints												R3
2	15.40	15.89	.49	SS	salt and pepper, medium to coarse grain, lower half rubble												R4
2	15.89	15.99	.10	SST	as above												R4
3	15.99	16.70	.71	SST	salt and pepper, as above, two joints												R4
	16.70	16.88	.18	Lost	core												
3	16.88	17.73	.85	SST	as above, some coarse grain slightly conglomerate with clay fragments, quartz pebbles, etc												R4
3	17.73	18.13	.40	SST	coarse grain, salt and pepper, coaly wisps, some clay clasts												R4

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

▲ ANGLE MEASURED FROM CORE AXIS

† : R &/OR S — GOLDR ASSOCIATES HARDNESS CODE

• RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. LP-D311

FILE No BA-211A
REVISED Nov. 1978

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.R. B.C.

HOLE No.	LP-D311
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS†
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC. %	F.S.I.	
										o.r.b.	residual	d.b.	d.b.	d.b.		
3		18.13	18.65	.52	SST	conglomeratic, abundant clay fragments, one joint										R4
3		18.65	18.87	.22	SST	medium grain, light gray - dark gray siltstone and coaly interbeds, broken core										R3
		18.87	19.04	.17	Lost	core										
3		19.04	19.47	.43	SST	medium - coarse grain, salt and pepper, some clay clasts, coaly wisps throughout, one joint										R3
3		19.47	20.29	.82	SST/ Silty SS	cross-bedded to interbedded, sandstone is fine to medium grain, light gray, dark gray (when silty), one joint	21									R3
3/4		20.29	20.41	.12	SST	as above, laminated, abundant coaly lenses										
		20.41	20.51	.10	Lost	core										
4		20.51	21.98	1.47	SST/ Silty SS	interbedded light to dark gray, ranges from fine to coarse grain at base, .02 coal bed near top, few coaly-filled fractures	22									R4
4		21.98	23.48	1.50	SST	medium to coarse grain, abundant coaly fractures, numerous conglomeratic clay fragments										R3
4		23.48	24.21	.73	SST	medium grain, salt and pepper, massive, three joints, rubbly at base										R3
5		24.21	25.01	.80	SST											R3
5		25.01	25.48	.47	SST	as above, but contains more coaly fractures and calcite fractures										R3
5		25.48	25.62	.14	SLTST	dark gray, slightly sandy										R3
5		25.62	25.90	.28	SST	fine to medium grain, light gray, some dark gray siltstone intervals and thin coaly lenses										R3
5		25.90	26.13	.23	SLST	dark gray, carbonaceous										R3
5		26.13	26.33	.20	Lost	core										
5		26.33	26.74	.41	SST	medium to fine grain, salt and pepper, numerous clay clasts, two coaly fractures										R3

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No	LP-D311
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
5		26.74	26.88	.14	SLTST	medium gray										R3
		26.88	27.06	.18	Lost	core										
5		27.06	27.18	.12	SST	medium grain, light gray, brecciated with medium gray siltstone										R3
5		27.18	28.24	1.06	SST	medium to coarse grain, salt and pepper, numerous coaly fractures, rubbly in part										R3
		28.24	28.64	.40	Lost	core										
5		28.64	28.86	.22	SST	as above										R3
6		28.86	29.16	.30	SST	as above, medium to coarse grain										R3
6		29.16	29.20	.04	Coal	hard, bright, hard breaking into flakes and chips										S4
6		29.20	29.40	.20	SST	as above, medium grain										R3
6		29.40	29.48	.08	SST	breccia, matrix is coaly with round, light gray, medium grain sandstone fragments										R2
6		29.48	29.78	.30	SST	as above, medium to coarse grain										R3
6		29.78	29.95	.17	SST	very coaly, rubbly and sheared, medium to coarse grain, light gray, massive sandstone										R4
6		29.95	30.05	.10	SST	medium to coarse grain, rubble as above										R3
6		30.05	30.10	.05	SST	as above, stick core										R3
6		30.10	30.82	.72	SST	fine to medium grain, light gray, dark gray, silty interbeds, broken core, a few coaly fractures, 1 calcite fracture	18									R3
6		30.82	31.37	.55	SST	medium to coarse grain, salt and pepper, fractured throughout (coaly)										
7		31.37	31.77	.40	Lost	core - sandstone										
7		31.77	32.50	.73	SST	as above, rubbly										
7		32.50	32.70	.20	Lost	core										
7		32.70	33.40	.70	SST	broken stick, as above										
7		33.40	33.52	.12	Shale	black, carbonaceous, coaly										S5

ALL LINEAR UNITS IN METRES

†:RB/OR S — GOLDR ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D311
CONTINUED	

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OF 11

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECOVERING ANGLE (%)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH % d.b.	V.M. % d.b.	F.C. % d.b.	F.S.I.	C.V.	
7		33.52	34.56	1.04	Shale	as above, friable										S5
7		34.56	35.10	.54	SLTST	dark gray, carbonaceous										R3
7		35.10	36.30	1.20	SLTST	as above										R3
		36.30	36.40	.10	Lost	core										
7		36.40	37.25	.85	SLTST	as above, but increasingly shaley with some plant debris										R3
8		37.25	37.30	.05	SLTST	as above, broken and rubbley										R3
		37.30	37.40	.10	Lost	core										
8		37.40	38.18	.78	SLTST	shaley and slightly sandy, dark gray, slightly carbonaceous, sandstone bands, light gray										R3
8		38.18	38.44	.26	Shale	silty, very dark gray, carbonaceous										R2
8		38.44	38.63	.19	Shale	black, very carbonaceous										S5
8		38.63	38.96	.33	Shale	dark gray, carbonaceous										R2
		38.96	39.12	.16	Lost	core										
8		39.12	39.40	.28	Shale	as above										R2
8		39.40	39.52	.12	Coal	very soft, dull, powdery										S1
		39.52	39.82	.30	Lost	core										
8		39.82	39.94	.12	Clay	dark gray										S1
8		39.94	40.03	.09	SLTST	dark gray, carbonaceous										R2
8		40.03	40.21	.18	Shale	as above										R2
8		40.21	41.21	1.00	Shale	abundant plant debris, as above, very dark gray										R2
8		41.21	41.66	.45	Shale	as above										R2
9		41.66	41.82	.16	Shale	dark gray, carbonaceous, compact										S3
9		41.82	42.66	.84	SLTST	dark gray, massive, stick core, some pyrite veinlets										R4

ALL LINEAR UNITS IN METRES

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	L.D.C. HOLE
AREA	S.E. B.C.

HOLE No.	LP-D311
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		DIPPING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.		C.V.
										a.r.b.	residual	d.b.	d.b.	d.b.			
9	42.66	42.72	.06	Shale	dark gray, carbonaceous and coaly												S3
9	42.72	42.75	.03	Shale	coaly, as before												S3
	42.75	42.95	.20	Lost	core												
9	42.95	43.95	1.00	SLTST	as above												R3
9	43.95	44.61	.66	SLTST	as above, but occasional .2 - .3 shale partings, blocky to rubblely												R2
9	44.61	44.99	.38	Shale	dark gray, compact, carbonaceous												S2
9	44.99	45.30	.31	Coal	dull with bright, compact, breaks into flakes				↑								S2
9	45.30	45.85	.55	Lost	core				1	15.34	1.18	8.14	17.52	73.15			
9	45.85	46.54	.69	Coal	dull, soft, powdery				↓								S1
10	46.54	46.76	.22	Coal	as above				↑								S1
10	46.76	47.47	.71	Coal	dull with bright, compact, breaks into flakes												S2
10	47.47	47.52	.05	Shale	coaly, dark gray to black, carbonaceous												S3
10	47.52	47.62	.10	Lost	core												
10	47.62	47.67	.05	Coal	as above												S2
10	47.67	47.72	.05	Shale	gray to dark, massive		42										R2
10	47.72	48.02	.30	Coal	as before, compact												S2
10	48.02	48.57	.55	Coal	as before, bright clumps in dull background				2	9.69	1.27	8.51	18.25	71.97	1½		S2
10	48.57	48.75	.18	Coal	dull, soft, powdery												S1
10	48.75	49.68	.93	Coal	dull with bright, compact, flakey and polished on flakes												S1
10	49.68	49.75	.07	Coal	bright, hard, breaking into angular fragments, compact												S3
10	49.75	50.10	.35	Coal	as before, dull with bright, compact												S1
10	50.10	50.56	.46	Coal	soft, dull with occasional bright bands												S1
11	50.56	51.10	.54	Coal	as before, dull with bright												S1
11	51.10	51.17	.07	Coal	as above												S1

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S. E. B.C.

HOLE No.	LP-D311
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %	F.S.I.		C.V.
										a.f.b.	residual						
11		51.17	51.30	.13	Coal	shaley, dull gray - black, massive, compact											S5
11		51.30	52.04	.74	Coal	as above, dull with bright, compact											S1
11		52.04	52.40	.36	Coal	dull, moderately hard, flakey											S1
11		52.40	52.74	.34	Coal	dull with bright, as before											S1
11		52.74	52.85	.11	Coal	soft, flakey, bright with dull, compact											S2
11		52.85	52.95	.10	Coal	dull, hard, clayey, compact											S3
11		52.95	53.13	.18	Coal	dull with occasional flakes of polished coal, compact											S2
11		53.13	53.23	.10	Coal	soft, dull with occasional polished flakes											S1
11		53.23	53.33	.10	Lost	core											
11		53.33	53.83	.50	Coal	dull, with bright polished surfaces, compact, flakey											S2
11		53.83	53.94	.11	Lost	core			2								
11		53.94	54.34	.40	Coal	as above											
11		54.34	54.88	.54	Coal	shaley, dull, hard, compact, occasional lenses of bright polished coal											S4
11		54.88	55.42	.54	Coal	dull with bright as before											S2
12		55.42	55.51	.09	Coal	soft, powdery, dull with bright											S1
12		55.51	55.80	.29	Coal	as above, soft and powdery, compact											S1
12		55.80	55.95	.15	Coal	hard, dull, powdery											S3
12		55.95	56.10	.15	Coal	soft, flakey with much of the coal polished											S2
12		56.10	56.46	.36	Coal	bright with dull, most bright due to polished coal											S2
12		56.46	56.56	.10	Coal	hard, dull, compact											S4
12		56.56	56.85	.29	Coal	bright with dull as before											S2
12		56.85	56.98	.13	Coal	soft, powdery with polished surfaces											S1
12		56.98	57.16	.18	Coal	soft, dull, powdery											S1

ALL LINEAR UNITS IN METRES

† - R/OR S - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

• RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D311
CONTINUED	

BOX No	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.c.b.	residual						
12		57.16	57.51	.35	Coal	dull with bright, bright due to polished coal, flakey, powdery when crushed										S2	
12		57.51	57.98	.47	Coal	dull with bright, soft, powdery when crushed										S1	
12		57.98	58.03	.05	Coal	shaley, hard, dull, highly polished and slicked coal, pyrite flakes										R2	
12		58.03	58.23	.20	Lost	core											
12		58.23	58.35	.12	Coal	flakey, polished, soft, powdery when crushed										S1	
12		58.35	58.54	.19	Coal	soft, flakey as above										S1	
12		58.54	58.63	.09	Coal	shaley, hard, dull, highly polished, slicked coal, pyrite flakes											
12		58.63	58.73	.10	Lost	core											
12		58.73	58.95	.22	Coal	dull with bright, flakey, powdery when crushed, polished surfaces										S2	
12		58.95	59.05	.10	Coal	dull, with occasional bright, polished surfaces, compact, soft, powdery										S1	
12		59.05	59.14	.09	Coal	as above, flakey, harder			2							S2	
12		59.14	59.44	.30	Coal	soft, dull, powdery, with occasional flakes, polished										S1	
12		59.44	59.94	.50	Coal	dull with bright, flakey to chunky, powdery when crushed, polished										S1-S2	
13		59.94	60.39	.45	Coal	as above, but shaley at base										S1	
13		60.39	60.59	.20	Lost	core											
		60.59	60.79	.20	Coal	soft, dull, polished										S1	
13		60.79	61.85	1.06	Coal												
13		61.85	61.98	.13	Coal	flakey, dull, polished, powders in fingers										S2	
13		61.98	62.18	.20	Coal	as above, softer, flakey, contortions, squeezed										S1	
13		62.18	62.24	.06	Coal	as above											
13		62.24	62.30	.06	Shale	black, carbonaceous, flakey										S2	

ALL LINEAR UNITS IN METRES

†:R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D311
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION	▲ BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS †	
		FROM	TO						MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I		C.V.
13		62.30	62.92	.62	Coal										S1
13		62.92	63.00	.08	SLTST			2							R1
13		63.00	63.10	.10	Shale										S2
13		63.10	63.18	.08	Shale										
13		63.18	64.11	.93	Shale										S3
		64.11	64.33	.22	lost										
13		64.33	64.48	.15	Shale										S3
14		64.48	65.31	.83	Shale										R2
14		65.31	65.59	.28	Shale										R2
14		65.59	65.73	.14	Coal										S2
14		65.73	66.31	.58	SLTST										R3
14		66.31	67.91	1.60	SLTST										R3
14		67.91	68.71	.80	SLTST										R3
		68.71	69.06	.35	Lost										
15		69.06	69.42	.36	Gouge										S2
15		69.42	70.95	1.53	SLTST										R3
15		70.95	71.45	.50	SLTST										R3
15		71.45	71.80	.35	SST										R3
15		71.80	71.99	.19	SLTST										R2

ALL LINEAR UNITS IN METRES

† - RB/OR S - GOLDR ASSOCIATES HARDNESS CODE

• RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODCEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D311
CONTINUED	

BOX No.	DEPTH BY TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No	ANALYTICAL DATA					REMARKS †		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	FC %		F.S.I.	C.V.
15		71.99	72.14	.15	Lost	core											
15		72.14	73.11	.97	SST	weakly banded, gray, fine grain, silty, five stickensided fractures											R2
16		73.11	73.31	.20	SST	gray, fine grain, banded, dark gray to black, silty bands, .01-.02 cm thick alternating with light gray sandstone bands, broken core, weak cross-bedding											R2
		73.31	73.46	.15	Lost	core											
16		73.46	74.20	.74	SST	as above, broken core											R2
16		74.20	75.70	1.50	SST	silty with dark gray bands, very fine grain	36										R2
16		75.70	76.74	1.04	SLTST	dark gray, massive, joint set (3 joints) semi-stick core											R2
17		76.74	77.11	.37	SLTST	as above											R2
17		77.11	77.65	.54	SST	as above, one joint set (2 joints)	17										R2
17		77.65	77.85	.20	SST	salt and pepper, fine grain, .04 - .05 bed thickness											R2
17		77.85	77.89	.04	SLTST	dark gray, broken core											R2
		77.89	78.09	.20	Lost	core											
17		78.09	78.14	.05	Shale	black, coaly and carbonaceous											R2
		78.14	78.49	.35	Lost	core											
17		78.49	78.55	.06	SST	fine to medium grain, rubblely, weathered											R2
17		78.55	78.78	.23	SST	rubble and gouge zone, fine grain, salt and pepper, equigranular											R2
		78.78	78.88	.10	Lost	core											
17		78.88	79.27	.39	SST	fine grain, salt and pepper, indistinct bedding, broken and fractured core											R3
17		79.27	79.35	.08	SST	gouge, as above											R3
17		79.35	79.61	.26	SST	rubble and gouge, as above											R2

ALL LINEAR UNITS IN METRES

† :RA/DR S — GOLDBER ASSOCIATES HARDNESS CODE
 •ROD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D311
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b.	MOIST % residual	ASH %	VM. %	FC. %	F.S.I.	
17		79.61	80.01	.40	SS-SLST	interbedded, siltstone is dark gray, thinly laminated, sandstone is light gray, fine grain, laminated core is broken and fractured, some breccia	23									R2
17		80.01	80.31	.30	SS-Coal	interbedded, sandstone as above but coal is black, sheared and polished, powdery (.02 to .03 cm wide)										R2
17		80.31	80.79	.48	SST	breccia, thinly banded with light gray, fine grain, laminae of sandstone and dark gray siltstone (coaly bands as before but less frequent).										R2
		80.79	81.39	.60	Lost	core										
17		81.39	81.53	.14	SST	breccia as above										
		81.53	81.93	.40	Lost	core										
17		81.93	82.09	.16	SST	rubble, coaly and carbonaceous, fine grain, salt and pepper										R1
		82.09	82.39	.30	Lost	core										
18		82.39	82.62	.23	SST	rubble, as above										R2
		82.62	83.12	.50	Lost	core										
18		83.12	83.25	.13	SST	fine grain, laminated, weakly cross-bedded, salt and pepper										R3
18		83.25	83.37	.12	Shale	black, finely laminated with 1 - 2 mm light gray sandstone bands, good shaley parting	23									R2
18		83.37	83.97	.60	SST	medium grain, salt and pepper, thinly bedded	13									R3
		83.97	84.17	.20	Lost	core										
18		84.17	84.52	.35	SST	rubble, coaly, fine grain, salt and pepper										
18		84.52	84.72	.20	Lost	core										
18		84.72	84.94	.22	Shale	silty, dark gray with occasional light gray 1 - 2 mm light gray sandstone bands	30									R2
18		84.94	85.08	.14	SST	fine grain to medium grain, salt and pepper, equigranular										R3

ALL LINEAR UNITS IN METRES

† :RB/OR S — GOLDER ASSOCIATES HARDNESS CODE
 *RQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D311
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LOLGEPOLE
AREA	S W B C

HOLE No.	LP-D311
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	V.M. %	F.C. %	F.S.I.		C.V.
										a.i.b.	residual						
18		85.08	85.14	.06	Gouge	sandstone fragments with dark gray clay matrix, gouge											
18		85.14	85.54	.40	SST-SH	alternate dark gray-black to white bands of fine grain sandstone and silty shale, bands are 1 - 100 mm thick, rubblely at base	20									R2	
18		85.54	85.60	.06	SST	rubble, as before										R2	
18		85.60	85.71	.11	Shale	silty, as before										R2	
18		85.71	85.80	.09	SST	breccia as before										R2	
18		85.80	86.51	.71	SST	medium grain, thinly bedded, light gray, rubblely at base, coaly partings 1 - 2 mm thick, broken core	16									R3	
		86.51	86.61	.10	Lost	core											
19		86.61	87.35	.74	SST	as above										R3	
		87.35	88.25	.90	Lost	core											
19		88.25	88.98	.73	SST	as above, but becoming very rubblely at base, coarse grain at base also	22									R3	
		88.98	90.23	1.25	Lost	core											
19		90.23	90.37	.14	SST	rubble, medium to coarse grain, as above										R1	
		90.37	90.57	.20	Lost	core											
19		90.57	91.02	.45	SST	medium grain, equigranular, somewhat massive, salt and pepper, broken core										R2	
		91.02	91.27	.25	Lost	core											
19		91.27	91.56	.29	Gouge	sandstone looks like core as above but highly weathered										R1	
19		91.56	91.80	.24	SST	as above, medium grain	14									R3	
19		91.80	91.97	.17	SST	rubble, as above										R1	
		91.97	93.77	1.80	Lost	core											

ALL LINEAR UNITS IN METRES

† R&OR S — GOLDER ASSOCIATES HARDNESS CODE

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D311
CONTINUED	

CORE COAL CORE DESCRIPTION

PROJECT	LODGE
AREA	McLATGOLD

DATE	BEGIN	August 21/80
	END	

HOLE No.	LP-D-312
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HOLE PARTICULARS

LOCATION	Lodgepole S.E. B.C.		
ELEVATION	2083.3	HOLE BEARING (AZ) [°]	--
TOTAL DEPTH	19	HOLE ANGLE (°) [*]	90°

LOGGING

LOGS RUN	gamma, neutron
LOGGED BY	Davies
OTHER TESTS	

COAL CORING PERFORMANCE

TOTAL	CORE DIAMETER	HO
	CORE RECOVERED	
	LENGTH CORED	
	CORE RECOVERY	%

EXAMINATION

LOG USED	Density
No. OF SEAMS SAMPLED	0
EXAMINER (S)	HK-BMW
DATE	August 21,

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BENDING ANGLE (°)	SEAM DESC.	SAMPLE No.	ANALYTICAL DATA							REMARKS †	
		FROM	TO		MAIN	AMPLIFIED [INCLUDE COAL RECOVERY FOR EACH SEAM]				MOIST %		ASH %	V.M. %	FC %	F.S.I.	C.V.		
										a.r.b.	residual	d.b.	d.b.	d.b.				
1		1.60	1.80	.20	SLST/SS	interbedded, rubblely, broken, siltstone is dark gray												
1		1.80	2.15	.35	SLST/SS	as above												
		2.15	3.45	1.30	Lost	core												
1		3.45	3.85	.40	SLST/SS	as above, sandstone is light gray, fine grain, siltstone is medium gray												R3
		3.85	4.55	.70	Lost	core												
1		4.55	5.15	.60	SST	medium to coarse grain, salt and pepper, some coaly specks, rubblely												R1
1		5.15	7.35	2.20	Lost	core												
		7.35	11.95	4.60	Lost	core												
1		11.95	12.07	.12	SST	as above												
		12.07	13.67	1.60	Lost	core												
1		13.67	13.92	.25	SST	as above, some pyrite on joint surfaces, rubblely												
1		13.92	14.25	.33	SST	as above												
1		14.25	14.52	.27	SLTST	brecciated at top, medium gray												R2
		14.52	15.52	1.00	Lost	core												
2		15.52	15.90	.38	SST	very fine grain, silty and brecciated at base												
		15.90	16.20	.30	Lost	core												
2		16.20	16.28	.08	Breccia	breccia and gouge, mostly sandstone/siltstone												
		16.28	16.78	.50	Lost	core												
2		16.78	17.18	.40	Gouge	fine grain, compact, with fragments												

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE
 † : R &/OR S — GOLDER ASSOCIATES HARDNESS CODE
 * RQD — ROCK QUALITY DESIGNATION (%)
 FF --- FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	312
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CORE & COAL CORE DESCRIPTION

PROJECT	LOUISPOLE - McLATCHIE
AREA	S.E. B.C.

HOLE No.	312
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE 1°	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b.	residual	ASH %	VM. %	FC. %	F.S.I		C.V.
2		17.18	17.42	.24	Gougc	as above											
2		17.42	18.43	.01	SST	fine to medium grain, massive, 3 clean fractures	25										R4
2		18.43	18.80	.37	Lost	core											

ALL LINEAR UNITS IN METRES

1:R&/OR S — GOLDBER ASSOCIATES HARDNESS CODE
 ARQD — ROCK QUALITY DESIGNATION (%)
 FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	312
CONTINUED	

COR. & COAL CORE DESCRIPTION

HOLE PARTICULARS

LOCATION	LODCEPOLE		
	S.E. B.C.		
ELEVATION	1998.5	HOLE BEARING (AZ°)	—
TOTAL DEPTH	130.5	HOLE ANGLE (°)*	90°

PROJECT AREA	LODCEPOLE S.E. B.C.
LOGGING	caliper, densi log, gamma neutron, sonic, focus beam electric
LOGGED BY	Roke, Mouray
OTHER TESTS	gamma, densi log

DATE	BEGIN	END
		Logged Aug 18/8

HOLE No.	LP-D313
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GE-1
4-14

COAL CORING PERFORMANCE	
CORE DIAMETER	110
CORE RECOVERED	123.4
LENGTH CORED	101.9
CORE RECOVERY	83 %

EXAMINATION	
LOG USED	
No. OF SEAMS SAMPLED	2
EXAMINER (S)	
DATE	Aug. 18/81

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		SEAM NO.	ANALYTICAL DATA	REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)			
1		7.09	7.50	.41	SS/SLST	sandstone is fine grain, salt and pepper, numerous calcite veins, siltstone dark gray, lenticular bedding, weathers orange, calcareous			R4
1		7.50	7.96	.46	SS/SLST	as above, rubble			
1		7.96	8.74	.78	SST	fine grain, light and dark laminations, iron staining on joint surfaces, rubble at top, weathers orange in places, numerous bedding plane joints, calcareous, calcite veins	26		R4
1		8.74	8.87	.13		rubble, as above			
1		8.87	9.39	.52	SST	as above, broken and rubble at top, calcareous			
1		9.39	9.76	.37	SST	dark gray, numerous limonitic concretions, some black thin beds of shale, highly broken			R3
1		9.76	10.45	.69	SLST/SH	as above, some coaly bands, highly broken			
2		10.45	10.72	.27	SLST/SH	as above, broken at base, 1 iron-stained joint	15		
2		10.72	11.00	.28	Shale	black, iron-stained fracture surfaces, carbonaceous			R2-R3
2		11.00	11.13	.13	Coal	soft, dull			S2
2		11.13	11.18	.05	Shale	rubble, black iron-stained		15.28 1.24 8.39 20.73 69.64 1	R2
		11.18	11.58	.40	Lost	coal			
2		11.58	11.68	.10	Coal	bright, blocky			S5
2		11.68	12.19	.51	Coal	bright, hard, sheared, 3 cm shale split in centre, some pyrite, good atack			R1
2		12.19	12.48	.29	Coal	shaley at top, hard, bright, pyrite on fracture surfaces			R1-R2
		12.48	12.78	.30	Lost	shaley coal			

ALL LINEAR UNITS IN METRES

* : MEASURED FROM THE HORIZONTAL PLANE

▲ ANGLE MEASURED FROM CORE AXIS

1 - 8 / OR 5 — GOLDR ASSOCIATES HARDNESS CODE

R — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No. LP-D313

FILE No. BA-211A
REVISED Nov. 1978

CORE & COAL CORE DESCRIPTION

PROJECT	LOUCEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.f.b. residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.		
2		12.78	13.06	.28	Coal	powdery, dull, soft											S1
		13.06	13.16	.10	Lost	coal											
2		13.16	13.22	.06	Coal	as above											
2		13.22	13.28	.06	Shale	carbonaceous, black, sulphurous, rubble											
2		13.28	13.39	.11	Coal	dull, soft, powdery, some bright bands											S1
		13.39	13.49	.10	Lost	core				16.67	1.56	10.63	18.89	68.92			
2		13.49	13.70	.21	Coal	bright, sheared, soft, flakey			2								S1
2		13.70	14.04	.34	Coal	as above											
2		14.04	14.09	.05	Shale	black, sulphurous, carbonaceous											
2		14.09	14.15	.06	Coal	as previously described											
2		14.15	14.39	.24	Coal	bright and dull, sheared, blocky											S4
2		14.39	14.42	.03	Coal	bright, hard											R2
2		14.42	14.51	.09	Coal	dull, powdery											S1
		14.51	15.58	.07	Lost	coal											
3		15.58	16.01	.43	Coal	as above											
3		16.01	16.20	.19	Coal	bright, sheared											S4
3		16.20	16.25	.05	Shale	black, carbonaceous, sulphur stain, rubble											R2
3		16.25	16.93	.68	Shale	dark gray, carbonaceous plant material, iron-staining on joint surfaces											R2
		16.93	17.33	.40	Lost	core											
3		17.33	17.44	.11	Shale	as above, rubble											
3		17.44	18.02	.58	SLTST	shaley, medium gray, some iron-staining											R3
3		18.02	18.31	.29	Shale	as previously described, iron stain, coal wisps, rubble at bottom											
3		18.31	18.43	.12	SLTST	medium gray, rubble, shaley, iron-staining on joints											

ALL LINEAR UNITS IN METRES

1:R2/R3 — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		READING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.	
3		18.43	19.19	.76	SLTST	as above, highly broken, laminated with very fine grain sandstone at base										
3		19.19	19.29	.10	Shale	rubble, as previously described										
		19.29	19.59	.30	Lost	core										
4		19.59	19.63	.04	Shale	rubble as above, silty										
		19.63	19.73	.10	Lost	core										
4		19.73	20.09	.36	Shale	as above, very broken										
		20.09	20.59	.50	Lost	core										
4		20.59	20.86	.27	Shale	breccia, numerous ironstone concretions, siltstone clasts										R1
		20.86	21.16	.30	Lost	core										
4		21.16	21.42	.26	Shale	rubble, as previously described										
4		21.42	21.69	.27	Shale	rubble, as above, iron-staining on surfaces, silty										
		21.69	22.49	.80	Lost	core										
4		22.49	22.89	.40	Shale	very rubbly, iron-stained, shaley near top, silty										R2
		22.89	21.29	.40	Lost	core										
4		23.29	23.77	.48	SLTST	carbonaceous plant fragments, calcite-filled fractures, iron-staining on joints, very broken and rubbly										
		23.77	24.07	.30	Lost	lost core										
4		24.07	24.73	.66	SLTST	light gray as above, broken and pulverized core										
4		24.73	24.85	.12	SLTST	rubble, as above										
		24.85	25.65	.80	Lost	core										
4		25.65	25.85	.20	SLTST	medium gray, broken and rubbly, iron-stained on joint surfaces										R3
5		25.85	26.15	.30	lost	core										

ALL LINEAR UNITS IN METRES

†:R#/OR S — GOLDEN ASSOCIATES HARDNESS CODE

•RDD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. b. residual	ASH %	V.M. %	F.C. %	F.S.I.	C.V.	
5		26.15	26.29	.14	SLTST	as above, rubble										
		26.29	26.49	.20	Lost	core										
5		26.49	27.05	.56	SLTST	as above with very fine grain sandstone, light gray interbeds near base										R3
5		27.05	27.26	.21	SLTST	as above										
		27.26	27.56	.30	Lost	core										
5		27.56	27.71	.15	SST	fine grain, salt and pepper, iron-stain, some silty bands, highly broken and rubblely										R3
5		27.71	27.84	.13	SST	breccia, as above										
5		27.84	28.06	.22	SST	breccia, as above										
5		28.06	28.72	.66	SS/SLST	sandstone is very fine grain, light gray; siltstone is medium gray; calcite filled fractures, small-scale cross-beds, calcite lining joint surfaces, rubblely at center - becomes more silty at base										
5		28.72	29.36	.64	SS/SLST	as above, very broken										
		29.36	30.26	.90	Lost	core										
5		30.26	30.70	.44	SST	fine grain, salt and pepper, calcite-filled fractures, claystone clasts, coaly stringers, light and dark laminations, polished, carbonaceous joints, some iron stain on joints, small-scale cross-beds		5								
5		30.70	30.86	.16	SST	as above and numerous bright coaly stringers										
6		30.86	32.14	1.28	SST	as above, semi-stick		16								R4
6		32.14	32.54	.40	SST	medium to coarse grain, calcite-filled fractures, carbonaceous in places, some coaly stringers, broken at top and base										
6		32.54	33.04	.50	SST	as above										
6		33.04	33.81	.77	SST	medium grain, calcite-lined joint surfaces, light and dark laminations, salt and pepper		12								R3
7		33.81	33.99	.18	SST	medium grain, very rubblely, some iron-staining, numerous coaly stringers and bands										R3 (crushed)

ALL LINEAR UNITS IN METRES

† -R&/OR S - GOLDER ASSOCIATES HARDNESS CODE
 *RQD - ROCK QUALITY DESIGNATION (%)
 FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	1.P-D313
CONTINUED	

BOX No.	DEPTH BY TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		ANGLE OF INCL. 1:1	SEAM DESIG	SAMPLE No	ANALYTICAL DATA					REMARKS 1		
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %		F.S.I.	C.V.
										u.r.b.	residual						
7		33.99	35.43	1.44	Congl.	conglomerate with bright coal bands 1-2 cm thick, numerous coaly stringers, matrix composed of siltstone and medium grain sandstone, calcite-filled fractures, some silty partings, stick core, iron-staining on some fracture surfaces											R4
7		35.43	36.37	.94	Congl.	as above											
7		36.37	36.91	.54	SST	coarse grain, stick core, almost conglomeratic in centre, numerous sheared coaly partings, coaly stringers, calcite-filled fractures											R4
7		36.91	37.62	.71	SST	as above, some fine grain sandstone bands											
		37.62	37.82	.20	Lost	core											
8		37.82	38.41	.59	SST	medium grain, salt and pepper, calcite-filled fractures, light and dark laminations											
		38.41	38.61	.20	Lost	core											
8		38.61	39.83	1.22	SST	as above, with carbonaceous partings, 1 cm coal bands at base, rubblely at base	20										R4
		39.83	40.13	.30	Lost	core											
8		40.13	41.88	1.75	SST	coarse grain, coaly stringers, bright coaly bands, broken and rubblely at base and top, some iron-staining											
		41.88	42.28	.40	Lost	core											
8		42.28	42.62	.34	SST	medium grain as previous described											
9		42.62	43.52	.90	SST	medium to coarse grained, carbonaceous partings, iron-stained joint surfaces, coaly stringers, broken at base											R3
		43.52	44.02	.50	Lost	core											
9		44.02	45.59	1.57	SST	as above											R3
9		45.59	46.76	1.17	SST	as above, with some silty lenses at centre											R3
		46.76	47.01	.25	Lost	core											
9		47.01	47.40	.39	SST	as above with numerous calcite-filled fractures											R3

ALL LINEAR UNITS IN METRES

† -R&/OR S - GOLDER ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	1.P-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM. %	FC. %	F.S.I.		C.V.
										o.f.b.	residual						
10	47.40	48.25	48.25	.85	SST	as above, very broken core, rubbley at base											R3
	48.25	48.45	48.45	.20	Lost	core											
10	48.45	49.61	49.61	.16	SST	as above, conglomeratic at top											R3
10	49.61	49.74	49.74	.13	SST	rubble, very carbonaceous, soft, powders easily											S3
	49.74	50.04	50.04	.30	Lost	core											
10	50.04	50.96	50.96	.92	SST	as previously described, broken core, polished coaly parting surfaces, rubbley near base											R3
	50.96	51.16	51.16	.20	Lost	core											
10	51.16	51.45	51.45	.29	SST	as above, broken core											R3
11	51.45	51.89	51.89	.44	SST	medium to coarse grain, light and dark laminations, very broken core, salt & pepper											R3
11	51.89	53.07	53.07	1.18	SST	as above, very rubbley and carbonaceous at base, some cross-beds											R3
	53.07	53.47	53.47	.40	Lost	core											
11	53.47	53.99	53.99	.52	SST	as above, very rubbley at top											R3
11	53.99	54.42	54.42	.43	SST	as above, rubbley at top and base											R3
11	54.42	55.17	55.17	.75	SST	as above, very broken core											
12	55.17	55.35	55.35	.18	SST	rubble, as above											
	55.35	56.53	56.53	1.18	Lost	core											
12	56.53	56.70	56.70	.17	SST	rubble, as above, ground core											
	56.70	56.90	56.90	.20	Lost	core											
12	56.90	57.70	57.70	.80	SS/SLST	sandstone is very fine grain, light gray; siltstone is medium grain; iron-staining on joint surfaces, slightly calcareous, soft sediment deformation	32										R3
12	57.70	58.43	58.43	.73	SS/SLST	as above, some small-scale cross-beds, very broken											R3
12	58.43	59.62	59.62	1.19	SS/SLST	as above, semi-stick	25										R3

ALL LINEAR UNITS IN METRES

† RB/ORS — GOLDER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECOVERY ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA					REMARKS 1
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o.r.b. / residual	ASH %	V.M. %	P.C. %	F.S.I.	
12	59.62	59.97	.35	SS/SLST	as above										R3
13	59.97	61.00	1.03	SS/SLST	as above, very broken core										R3
	61.00	61.25	.25		Lost core										
13	61.25	62.70	1.45	SS/SLST	as above, semi-stick core, thin sheared coal band at centre, coaly partings, calcite lining joint surfaces										R3
13	62.70	64.19	1.49	SS/SLST	as above, bioturbated		30								R3
14	64.19	64.27	.08	SS/SLST	as above										R3
14	64.27	65.83	1.56	SS/SLST	as above, semi-stick										R3
14	65.83	66.89	1.06	SS/SLST	as above with carbonaceous plant fragments, becoming more silty at base										R3
14	66.89	67.47	.58	SLTST	dark gray, sandy beds in places, clean joints some joints have carbonaceous plant fragments on their surfaces, also some iron-stained joint planes										R3
14	67.47	68.22	.75	SLTST	as above										R3
15	68.22	68.69	.47	SLTST	as above, semi-stick, becoming more sandy at base										R3
15	68.69	69.10	.41	SS/SLST	as previously described with some calcite-filled fractures, good stick core		13								R3
15	69.10	70.24	1.14	SS/SLST	as above		08								R3
15	70.24	71.78	1.54	SS/SLST	as above, distinct worm burrows infilled with fine grain, light gray, sand		11								R3
15	71.78	72.37	.59	SS/SLST	as above										R3
16	72.37	73.33	.96	SS/SLST	as above, stick core, rubbley in centre, still slightly calcareous		8								R3
16	73.33	74.92	1.59	SS/SLST	as above										R3
16	74.92	76.52	1.60	SS/SLST	as above										R3
16	76.52	76.65	.13	SS/SLST	as above		14								R3
17	76.65	78.00	1.35	SS/SLST	as above, stick core		17								R3

ALL LINEAR UNITS IN METRES

1-R&/OR S — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E., B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		READING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a. b. residual	ASH %	VM. %	FC. %	F.S.I.	C.V.	
17	78.00	78.52	.52	SS/SLST	as above											R3
	78.52	78.70	.18	Lost	core - siltstone/sandstone unit											R3
17	78.70	78.85	.15	Shale	black, pyrite on fracture surfaces, slightly silty											R3
17	78.85	79.05	.20	Shale	as above											R3
17	79.05	79.48	.43	Shale	black, soft, numerous bright coaly stringers and lenses, pyrite flecks, carbonaceous											S5
	79.48	79.70	.22	Lost	shale											
17	79.70	79.86	.16	Coal	bright and dull, powdery to blocky				4							S3
17	79.86	80.31	.45	Coal	bright, blocky, hard, some cleat				3							R1
17	80.31	80.55	.24	Coal	dull with bright, powdery and compact											S5
17	80.55	80.83	.28	Coal	hard, blocky, bright, pyrite flecks, shaley at top					6.85	.82	9.30	17.30	2.58	14	S5
18	80.83	81.47	.64	Coal	hard, bright, blocky											R2
18	81.47	82.50	1.03	Coal	hard, dull with bright				4							R2
18	82.50	82.52	.02	Coal	very hard, very dirty					6.09	.90	11.07	17.73	70.30	2	R3
18	82.52	82.93	.41	Coal	mostly bright, flakey and blocky											S4
	82.93	83.40	.47	Lost	coal - somewhere in coal seam											
18	83.40	83.45	.05	Shale	very carbonaceous, polished coaly surfaces											R3
	83.45	84.00	.55	Lost	shale											
18	84.00	84.50	.50	Coal	hard, blocky, mostly bright											R2
	84.50	84.70	.20	Lost	coal											
18	84.70	85.02	.32	Coal	as above											R2
18	85.02	85.23	.21	Coal	bright, flakey											S5
18	85.23	85.31	.08	Coal	hard, blocky, mostly bright											R2
18	85.31	85.64	.33	Coal	bright with dull, powdery											S3-S4
18	85.64	85.78	.14	Coal	hard, dull, polished											R3

ALL LINEAR UNITS IN METRES

1-#R#/#R# — GOLDR ASSOCIATES HARDNESS CODE
 #RQ — ROCK QUALITY DESIGNATION (1%)
 #F — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		RECORDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA					REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % o. r. b. residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
		85.78	86.30	.52	Lost	coal										
18		86.30	86.36	.06	Coal	as above with pyrite, sheared										R3
		86.36	86.50	.14	Lost	coal										
18		86.50	86.68	.18	Shale	black, carbonaceous, polished, flakey and sheared at base										R3
		86.68	87.10	.42	Lost	shale										
19		87.10	87.33	.23	Coal	mostly bright, granular										S4
19		87.33	87.61	.28	Coal	bright, blocky										R1
19		87.61	87.86	.25	Coal	dull with bright, powdery										S2
		87.86	88.46	.60	Lost	coal (written on marker blocks)										
19		88.46	88.80	.34	Coal	bright, sheared, flakey, powdery										S4
19		88.80	88.95	.15	Coal	very dirty, polished surfaces, some pyrite flecks, low specific gravity										R2
19		88.95	89.10	.15	Coal	hard, blocky, pyrite flecks, mostly bright										S5
19		89.10	89.19	.09	Coal	dull with some bright, very powdery, soft										S1
19		89.19	89.23	.04	Coal	hard, bright, cleat										R2
		89.23	89.30	.07	Lost	coal										
19		89.30	89.43	.13	Coal	bright, hard, some cleat and polished surfaces, some pyrite on polished surfaces										R2
19		89.43	89.62	.19	Coal	platey to blocky, bright with some dull, some pyrite flecks, brightly polished, crisp										S5
19		89.62	89.67	.05	Coal	hard, blocky, bright, polished										R2
19		89.67	89.77	.10	Coal	bright, polished, platey to blocky, pyrite										S4
19		89.77	90.15	.38	Coal	very dirty with bright partings, hard, abundant polished surfaces, pyrite										R3
		90.15	90.50	.35	Lost	coal										
19		90.50	90.80	.30	Shale	black, carbonaceous, abundant coaly lenses and partings, polished coaly surfaces with pyrite, very coaly in places										R3

ALL LINEAR UNITS IN METRES

F - R & OR S - GOLDER ASSOCIATES HARDNESS CODE

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODKRPOLE
AREA	S.E. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		▲ DIPPING ANGLE (°)	SEAM DESIGN	SAMPLE No.	ANALYTICAL DATA					REMARKS	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	F.C. %	F.S.I.		C.V.
		90.80	91.17	.37	Lost	shale										
19		91.17	91.30	.13	Coal	split, bright, moderately soft, flakey, granular to blocky, polished and pyritic										S4
19		91.30	92.10	.80	Shale	black, very carbonaceous, coaly, numerous coal splits and lenses, polished surfaces, pyrite			5							R2
		92.10	92.20	.10	Lost	shale										
19		92.20	92.38	.18	Coal	soft, platy, granular to powdery, bright, some polished surfaces										S4
		92.38	93.00	.62	Lost	coal			4							
20		93.00	93.11	.11	Coal	bright, soft, granular to blocky, polished surfaces										S4-S5
20		93.11	93.37	.26	Coal	bright with dull, hard, polished, pyrite, some soft and powdery bands										R1
20		93.37	93.45	.08	Coal	bright, flakey, polished, granular										S5
		93.45	93.90	.45	Lost	coal										
20		93.90	94.11	.21	Shale	black, very carbonaceous, hard, some polished surfaces, some coaly lenses										R3
20		94.11	94.23	.12	Coal	bright, polished, abundant pyrite, blocky to granular										S4
20		94.23	94.31	.08	Coal	bright, pyrite, granular to powdery										S2
20		94.31	94.39	.08	Coal	bright, flakey, granular to powdery, soft										S2
20		94.39	94.46	.07	Coal	bright with dull, very soft, compact, powdery										S1
20		94.46	94.56	.10	Coal	hard, blocky, dull with bright, polished surface, pyrite										S5
20		94.56	94.87	.31	Coal	bright and dull, highly polished, platy to blocky, abundant pyrite, displays some cleat										R1
20		94.87	95.21	.34	Coal	dull with bright bands, stick core, bright bands, displays cleat, pyrite										R1
		95.21	95.30	.09	Lost	core										

ALL LINEAR UNITS IN METRES

▲ H.A./D.R.S — GOLDER ASSOCIATES HARDNESS CODE

▲ R.Q.D — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

▲ ANGLE MEASURED FROM CORE AXIS

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.F. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		MOISTURE ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS †	
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.		C.V.
										a.r.b.	residual						
20		95.30	95.76	.46	Coal	as above											R1
20		95.76	96.01	.25	Coal	bright, stick core, pyritic, hard											R2
20		96.01	96.21	.20	Shale	black, carbonaceous, pyritic, abundant coaly lenses and partings											R2
20		96.21	96.52	.31	Coal	bright and dull, polished surfaces, with pyrite, displays cleat											R3
		96.52	96.60	.08	Lost	coal											
20		96.60	97.22	.62	Coal	bright, hard, semi-stick, pyritic, displays cleat, contains a shale band (2 cm thick)											R2
		97.22	97.50	.28	Lost	coal											
20		97.50	97.93	.43	Shale	black, carbonaceous, abundant slickensided surfaces with pyrite, coaly bands											R3
20		97.93	97.99	.06	Shale	as above											R3
20		97.99	98.42	.43	Shale	as above with carbonaceous plant fragments											R3
21		98.42	99.22	.80	Shale	as above, stick core with some light gray silty bands in centre											R1
		99.22	99.40	.18	Lost	shale											
21		99.40	99.77	.37	Shale	silty, dark gray, numerous carbonaceous plant fragments, some pyrite flakes											R3
21		99.77	99.91	.14	Shale	as above											R3
		99.91	100.00	.09	Lost	shale											
21		100.00	100.80	.80	SLTST	medium gray, light and dark laminations, some pyrite flakes, carbonaceous plant fragments, coaly stringers											R4
21		100.80	101.09	.29	SS/SLTST	sandstone is fine to medium grain, light gray; siltstone is medium gray; carbonaceous stringers											R3
21		101.09	101.53	.44	Shale	silty											R3
21		101.53	101.69	.16	Shale	silty, as above											R3
21		101.69	102.12	.43	Shale	black, numerous carbonaceous plant fragments, slick polished fracture surfaces, bright coaly stringers											R3

ALL LINEAR UNITS IN METRES

1-RB/ORS — GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

•RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.F. B.C.

HOLE No	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST % a.r.b. residual	ASH %	V.M. %	FC. %	F.S.I.	C.V.	
22	102.12	102.40	.28	Shale	black, numerous bright coaly stringers and bands, polished carbonaceous surfaces, pyrite flecks, carbonaceous plant material											R3-R2
22	102.40	102.63	.23	SLTST	medium gray, 2 clean joints, coaly stringers at top, pyrite flakes, light and dark laminations, carbonaceous plant fragments											R3
22	102.63	103.00	.37	SST	very fine to fine grain, light gray, massive											R4
22	103.00	103.72	.72	SST	as above, becoming silty at base, semi-stick											R4
22	103.72	104.10	.38	SLTST	medium gray, some polished surfaces											R3
22	104.10	105.10	1.00	SST	as previously described with small-scale cross-beds, broken core, rubblely at base											R3
22	105.10	105.56	.46	SST	as above, slightly shaley at top	20										R3
22	105.56	105.85	.29	SLTST	shaley at top, medium gray, coaly stringers and lenses, carbonaceous plant fragments, shaley											R3
23	105.85	105.90	.05	SLTST	as above											R3
23	105.90	106.17	.27	Shale	silty at base, medium gray, polished joint surfaces, very rubblely at base											R2
	106.17	106.50	.33	Lost	core											
23	106.50	106.55	.05	Shale	rubble, as above											R2
23	106.55	107.12	.57	SLTST	sandy at top, highly broken, medium gray											R3
	107.12	107.40	.28	Lost	core											
23	107.40	108.45	1.05	SST	very fine grain, light to medium gray, contains 7 cm shaley band near base											R3
23	108.45	109.65	1.20	SST	as above, broken core, brecciated at centre, some calcite-filled fractures											R3
23	109.65	109.95	.30	SST	as above											R3
24	109.95	111.28	1.33	SST	as above, stick core											R3
24	111.28	112.27	.99	SS/SLST	sandstone as above with silty laminations	3										R3
24	112.27	112.69	.42	breccia	sandstone as above											

ALL LINEAR UNITS IN METRES

*R-R/OR S — GOLDBER ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD — ROCK QUALITY DESIGNATION (%)

FF — FRACTURE FREQUENCY

HOLE No	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.R. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		BEDDING ANGLE (°)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS ¹
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %		ASH %	VM %	FC %	F.S.I.	
										a.r.b.	residual					
		112.69	112.80	.11	Lost	core - sandstone, probably										
24		112.80	114.00	.20	SS/SLST	as previously described	5									R3
25		114.00	114.19	.19	SS/SLST	as above										R3
		114.19	114.30	.11	Lost	sandstone/siltstone										
25		114.30	115.02	.72	SS/SLST	as above with wavy laminations, thin bright coal bands, calcite-filled fractures										R3
		115.02	115.20	.18	Lost	sandstone/siltstone										
25		115.20	115.92	.72	SS/SLST	as above, polished surfaces, rubble at base										R3
		115.92	116.40	.48	Lost	sandstone/siltstone										
25		116.40	117.48	1.08	SS/SLST	as above, contains bright coal band with cleat, 1 cm thick										R3
		117.48	117.60	.12	Lost	sandstone/silt										
25		117.60	117.65	.05	SS/SLST	rubble, as above										R3
25		117.65	117.78	.13	SS/SLST	as above, sandstone becoming medium gray, soft sediment deformation										R3
		117.78	118.60	.82	Lost	sandstone/siltstone										
25		118.60	118.65	.05	SS/SLST	as above, rubble										R3
25		118.65	119.17	.52	SS/SLST	as above, semi-stick										R3
26		119.17	119.32	.15	SS/SLST	as above, stick core										R3
26		119.32	120.78	1.46	SS/SLST	as above, stick core, calcite lining joint surfaces	15									R3
26		120.78	121.21	.43	SS/SLST	as above										R3
26		121.21	122.29	1.08	SST	medium to fine grain with siltstone lenses and stringers, thin bright coal bands and stringers, highly polished coaly surfaces, calcite-lined fractures, salt and pepper, stick core										R4
26		122.29	122.50	.21	SST	as above										R4
26		122.50	123.17	.67	SLST/SS	with fine grain sandstone - light gray; siltstone is medium gray; carbonaceous and coaly stringers, finely laminated, polished coaly fracture surfaces	24									R3

ALL LINEAR UNITS IN METRES

1:R1/OR 3 - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LP-D313
CONTINUED	

CORE & COAL CORE DESCRIPTION

PROJECT	LODGEPOLE
AREA	S.E. B.C.

HOLE No.	LP-D313
CONTINUED	

BOX No.	DEPTH AT TOP OF BOX	DEPTH		TH	LITHO DESCRIPTION		MEASURING ANGLE (%)	SEAM DESIG.	SAMPLE No.	ANALYTICAL DATA						REMARKS*
		FROM	TO		MAIN	AMPLIFIED (INCLUDE COAL RECOVERY FOR EACH SEAM)				MOIST %	ASH %	V.M. %	FC %	F.S.I.	C.V.	
										a. r. b.	residual					
27		123.17	123.50	.33	SS/SLST	as above										R3
27		123.50	123.70	.20	SST	medium grain, salt and pepper, bright coaly stringers, polished coaly stringers, a few fine silty laminations										R3
		123.70	123.90	.20	Lost	core										
27		123.90	124.57	.67	SST	as above, stick core at top, brecciated and rubbley at base										R3
27		124.57	124.85	.28	SLTST	medium gray, semi-stick										R3
		124.85	125.00	.15	Lost	core										
27		125.00	125.43	.43	SLTST	as above with medium grain sandstone lenses										R3
27		125.43	125.84	.41	SST	as previously described										R3
27		125.84	125.94	.10	SST	as above										R3
27		125.94	126.96	1.02	SLST/SS	siltstone is medium grain; sandstone is fine grain, light gray, carbonaceous stringers, soft sediment deformation										R3
27		126.96	127.29	.33	SST	medium grain, salt and pepper, coaly stringers, a few siltstone lenses at top, massive										R4
		127.29	127.40	.11	Lost	core										
27		127.40	127.55	.15	SST	as above										R4
28		127.55	128.94	1.39	SST	as above, calcite-filled fractures in places										R4
28		128.94	130.40	1.46	SST	as above, light and dark laminations	22									R4
		130.40	130.50	.10	Lost	sandstone										

ALL LINEAR UNITS IN METRES

† - RA/OR S - GOLDR ASSOCIATES HARDNESS CODE

▲ ANGLE MEASURED FROM CORE AXIS

*RQD - ROCK QUALITY DESIGNATION (%)

FF - FRACTURE FREQUENCY

HOLE No.	LP-D313
CONTINUED	

CHIP LOG DESCRIPTIONSROTARY HOLE NO. LPR-314

DATE BEGUN: September 22, 1980
 DATE FINISHED: September 22, 1980
 ELEVATION: 2065.10 m
 NORTHING: 5465616.10
 EASTING: 665370.50
 TOTAL DEPTH: 69.0 m
 ANGLE: 90°
 AZINUTH:
 LOGS RUN: Caliper, Gamma, Density

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
0 - 0.73	Rubble
0.73 - 5.70	<u>Coal</u> Sample #LPR-314-1
5.70 - 8.30	<u>Shale</u> , dark gray to black, carbonaceous with coaly wisps
8.30 - 17.20	<u>Coal</u> Sample # LPR-314-2
17.20 - 21.30	<u>Siltstone/shale</u> - light to medium gray
21.30 - 22.90	<u>Siltstone</u> - light gray with very small blebs of carbonaceous material
22.90 - 24.40	<u>Siltstone</u> to very fine-grained <u>sandstone</u> , light gray
24.40 - 25.90	<u>Shale</u> - medium dark gray with carbonaceous and coaly wisps, softer almost fissile, some polished surface
25.90 - 27.40	<u>Siltstone</u> - medium gray, clean, with some iron-stain, R3

ROTARY HOLE NO. LPR-314

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
27.40 - 29.00	<u>Siltstone</u> - dark gray, R4, with coaly blebs, some pyrite crystals
29.00 - 30.50	<u>Sandstone</u> - fine grain, dark gray to black, coaly blebs - R3 - iron-stain
30.50 - 32.00	<u>Sandstone</u> - as above with some calcareous material
32.00 - 33.50	<u>Sandstone</u> - as above with some calcareous material
33.50 - 35.00	<u>Sandstone</u> - very fine grain to fine grain with coaly matrix, R2-R3, some iron-stain, finely bedded
35.00 - 36.60	<u>Sandstone</u> - fine grain, R3-R4, medium to dark gray, no coaly blebs, faint iron-stain
36.60 - 38.10	<u>Sandstone</u> - as above with coaly partings, partings are hard, bright and polished
38.10 - 39.60	<u>Sandstone</u> - fine to medium gray with coaly blebs, R2-R3, some iron-stain grains
39.60 - 41.10	<u>Siltstone/very fine grain sandstone</u> - dark gray to black with abundant coaly wisps, R4, some iron-stain
41.10 - 42.70	<u>Siltstone</u> - black with coaly parting, R3, appears massive not fissile, partings are bright and polished
42.70 - 44.20	<u>Sandstone</u> - fine to medium grain with black coaly matrix, R3
44.20 - 45.70	<u>Siltstone</u> - dark gray with coaly wisps
45.70 - 47.20	<u>Siltstone</u> to very fine grain <u>sandstone</u> - dark gray to black with iron-staining
47.20 - 48.80	<u>Siltstone/sandstone</u> - as above
48.80 - 50.30	<u>Sandstone</u> - very fine grain to fine grain, softer R2-R3, some plant fragments
50.30 - 51.80	<u>Siltstone-sandstone</u> - medium gray with dark coaly wisps, R4
51.80 - 53.30	<u>Siltstone</u> - medium gray, massive, R2
53.30 - 54.90	<u>Siltstone</u> - as above but darker gray and harder

ROTARY HOLE NO. LPR-314

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
54.90 - 56.40	<u>Shale</u> - dark gray to black with coaly wisps; fissile
56.40 - 57.90	<u>Shale</u> - carbonaceous, medium to dark gray
57.90 - 59.40	<u>Shale</u> - as above, becoming silty
59.40 - 61.00	<u>Shale</u> - as above
61.00 - 62.50	<u>Siltstone</u> - light medium gray, R3
62.50 - 64.00	<u>Siltstone</u> to very fine grain <u>sandstone</u> - R4, medium to dark gray, massive
64.00 - 65.50	<u>Siltstone/sandstone</u> - as above
65.50 - 67.10	<u>Sandstone</u> - fine to medium grain, medium gray with coaly wisps
67.10 - 68.60	<u>Sandstone</u> - fine to medium grain, massive, medium gray with coaly wisps and some iron-staining, R3

CHIP LOG DESCRIPTIONSROTARY HOLE NO. LPR-315

DATE BEGUN: September 23, 1980
 DATE FINISHED: September 23, 1980
 ELEVATION: 2039.90 m
 NORTHING: 5465793.02
 EASTING: 665339.54
 TOTAL DEPTH: 77.0 m
 ANGLE: 90⁰
 AZIMUTH:
 LOGS RUN: Caliper, Density, Gamma, Density Detail

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
0 - 1.50	<u>Sandstone</u> - rubblely, medium to coarse grain, massive, medium dark gray matrix
1.50 - 3.00	No return
3.00 - 4.60	No return
4.60 - 6.10	<u>Sandstone</u> - as previously described
6.10 - 7.60	<u>Sandstone</u> - as above
7.60 - 9.10	[No return <i>Coal?</i> No return
9.10 - 10.70	
10.70 - 13.70	
13.70 - 25.40	[<u>Sandstone</u> - fine grain with dark gray to black matrix, coaly
25.40 - 29.00	

ROTARY HOLE NO. LPR-315

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
29.00 - 30.50	<u>Siltstone-sandstone</u> - as above with abundant polished coaly fragments
30.50 - 38.10	<i>coal?</i>
38.10 - 39.60	<u>Siltstone</u> - dark gray-brown, carbonaceous and sandy
39.60 - 41.10	<u>Siltstone</u> - as above
41.10 - 42.70	<u>Siltstone</u> - as above
42.70 - 44.20	<u>Siltstone</u> - fine grain, dark brown, silty
44.20 - 45.70	<u>Sandstone</u> - as above
45.70 - 47.20	<u>Sandstone</u> - sandy, dark brown, carbonaceous
47.20 - 48.80	<u>Sandstone</u> - fine grain-medium grain, dark brown, carbonaceous
48.80 - 50.30	<u>Sandstone</u> - as above with plant fragments, silty
50.30 - 51.80	<u>Sandstone</u> - as above
51.80 - 53.30	<u>Sandstone</u> - as above but gray to gray-brown in colour
53.30 - 54.90	<u>Sandstone</u> - as above
54.90 - 56.40	<u>Sandstone</u> - fine grain to medium grain, equigranular, salt and pepper with occasional carbonaceous streaks
56.40 - 57.90	<u>Sandstone</u> - gray brown, silty, fine grain as before
57.90 - 59.40	<u>Siltstone</u> - sandy, dark brown, carbonaceous
59.40 - 61.00	<u>Sandstone</u> - salt and pepper, fine grain, equigranular
61.00 - 62.50	<u>Sandstone</u> - as above
62.50 - 64.00	<u>Sandstone</u> - as above
64.00 - 65.50	<u>Sandstone</u> - as above
65.50 - 67.10	<u>Siltstone/sandstone</u> - sandstone as above; siltstone is dark gray, aphanitic slicks
67.10 - 68.60	<u>Sandstone/siltstone</u> - as above but more sandstone than siltstone

ROTARY HOLE NO. LPR-315

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
68.60 - 70.10	<u>Sandstone</u> - fine grain to medium grain, equigranular salt and pepper
70.10 - 71.60	<u>Sandstone/siltstone</u> - as above
71.60 - 73.10	<u>Siltstone/sandstone</u> - as above
73.10 - 74.70	<u>Siltstone</u> - dark gray, aphanitic, siliceous, massive
74.70 - 76.20	<u>Siltstone</u> - as above

CHIP LOG DESCRIPTIONSROTARY HOLE NO. LPR-316

DATE BEGUN: September 23, 1980
 DATE FINISHED: September 23, 1980
 ELEVATION: 1870.10
 NORTHING: 5465604.59
 EASTING: 664859.31
 TOTAL DEPTH: 24.0 m
 ANGLE: 90°
 AZIMUTH:
 LOGS RUN: Caliper, Density, Gamma

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
0 - 7.60	Cover - rubble, large sandstone pebbles in coaly mud
7.60 - 9.10	<u>Siltstone</u> - medium to dark gray, massive, R3
9.10 - 10.70	<u>Siltstone</u> to very fine grain <u>sandstone</u> - medium to dark gray, non-calcareous, non-carbonaceous
10.70 - 12.20	<u>Siltstone</u> - as above
12.20 - 13.70	<u>Siltstone</u> - as above
13.70 - 15.20	<u>Sandstone</u> - fine grain, very dark gray, hard
15.20 - 16.80	<u>Sandstone</u> - as above with some iron stain
16.80 - 18.30	<u>Sandstone</u> - fine grain with dark gray matrix with light and dark grain, a few coaly specks
18.30 - 19.80	<u>Sandstone</u> - as above, becoming coarser grain
19.80 - 21.30	<u>Sandstone</u> - fine to medium grain, massive with dark carbonaceous matrix and coaly specks, mildly calcareous
21.30 - 22.70	<u>Sandstone</u> - as above

CHIP LOG DESCRIPTIONSROTARY HOLE NO. LPR-317

DATE BEGUN: September 24, 1980
 DATE FINISHED: September 24, 1980
 ELEVATION: 1874.50 m
 NORTHING: 5465711.84
 EASTING: 644885.34
 TOTAL DEPTH: 49.0 m
 ANGLE: 90°
 AZINUTH:
 LOGS RUN: Caliper, Density, Gamma

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
0 - 1.50	<u>Sandstone</u> - overburden?- fine grain to medium grain, equigranular, carbonaceous, salt and pepper
1.50 - 3.00	<u>Sandstone/siltstone</u> - overburden?- fine grain, dark gray and rusty brown, laminated sandstone rock - types dark gray siliceous, aphanitic siltstone
3.00 - 4.60	<u>Sandstone/siltstone</u> - overburden? - as above
4.60 - 6.10	<u>Sandstone</u> - rusty brown, laminated fine grain, overburden
6.10 - 7.60	<u>Sandstone</u> - fine grain, gray, equigranular
7.60 - 10.70	
10.70 - 12.20	<u>Sandstone</u> - fine grain, dark gray, equigranular
12.20 - 13.70	<u>Sandstone</u> - fine grain to medium grain, dark brown, equigranular, weathering rusty brown
13.70 - 15.20	<u>Sandstone</u> - fine grain to medium grain, dark gray, equigranular

ROTARY HOLE NO. LPR-317

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
15.20 - 16.80	<u>Sandstone</u> - as above but coaly lenses and carbonaceous plant fragments
16.80 - 18.30	<u>Sandstone</u> - medium grain, salt and pepper, equigranular with occasional white calcite veinlets and weathers rusty brown
18.30 - 19.80	<u>Sandstone</u> - as above
19.80 - 21.30	<u>Sandstone</u> - as above but strong contamination of other rock types
21.30 - 22.90	<u>Sandstone</u> - salt and pepper, medium grain granular, with occasional white calcite veinlets and coal bands, rare dark gray aphanitic siltstone (contamination)?
22.90 - 35.00	<u>Basal sandstone</u> - as above
35.00 - 38.10	<u>Basal sandstone</u> - as above but also numerous dark gray aphanitic siltstone chips
38.10 - 39.60	<u>Basal sandstone</u> - as above but with crystalline pyrite chips with sandstone
39.60 - 50.30	<u>Basal sandstone</u> - as above, calcite very numerous @ 44.2 m

CHIP LOG DESCRIPTIONSROTARY HOLE NO. LPR-318

DATE BEGUN: September 25, 1980
 DATE FINISHED: September 25, 1980
 ELEVATION: 1881.40 m
 NORTHING: 5465905.69
 EASTING: 664894.38
 TOTAL DEPTH: 60.0 m
 ANGLE: 90°
 AZIMUTH:
 LOGS RUN: Neutron, Gamma

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
0 - 1.10	Cover
1.10 - 4.90	<u>Coal</u> Sample # LPR 318-1
4.90 - 6.10	<u>Siltstone</u> - dark gray to black, carbonaceous, non-calcareous
6.10 - 7.60	<u>Sandstone</u> - fine to medium grain, salt and pepper, dark gray matrix, sugary texture, appears massive
7.60 - 9.10	<u>Siltstone</u> to very fine grain <u>sandstone</u> - dark gray, slightly coaly matrix
9.10 - 10.70	<u>Sandstone</u> - as previously described
10.70 - 12.20	<u>Siltstone</u> - sugary texture, softer, appears fissile, dark gray to black
12.20 - 13.70	<u>Siltstone</u> - dark gray, massive, shaley
13.70 - 15.20	<u>Siltstone</u> - dull, medium gray, with a few bright coaly specks, non-calcareous

ROTARY HOLE NO. LPR-318

<u>Sample Depth (m)</u>	<u>Lithology (Chip Samples)</u>
15.20 - 16.80	<u>Siltstone</u> to very fine grain <u>sandstone</u> - medium gray, massive, hard
16.80 - 23.20	<i>coal?</i>
23.20 - 24.40	<u>Shale</u> - black, fissile, carbonaceous with coaly wisps
24.40 - 25.90	<u>Shale</u> - becoming silty and harder, medium to dark gray
25.90 - 27.40	<u>Sandstone</u> - very fine grain, salt and pepper with coaly specks
27.40 - 29.00	<u>Siltstone</u> to very fine grain <u>sandstone</u> - as above
29.00 - 30.50	No recovery
30.50 - 32.00	<u>Sandstone</u> - fine grain, salt and pepper in dark gray matrix and some yellow iron-stain
32.00 - 33.50	<u>Sandstone</u> - as above
33.50 - 35.00	<u>Sandstone</u> - as above
35.00 - 36.60	<u>Sandstone</u> with some <u>siltstone</u> - very fine grain and medium gray, R3
36.60 - 38.10	<u>Siltstone</u> - very fine grain to fine grain, dark gray matrix
38.10 - 39.60	<u>Sandstone</u> - as above with some yellow-brown iron-stain
39.60 - 41.10	<u>Sandstone</u> - as above
41.10 - 42.70	<u>Sandstone</u> - as above with a few coaly wisps
42.70 - 44.20	<u>Siltstone</u> interbedded with <u>sandstone</u> - siltstone is dark gray; sandstone is salt and pepper
44.20 - 45.70	<u>Siltstone/sandstone</u> - as above
45.70 - 47.20	<u>Sandstone</u> - with some silty layers
47.20 - 48.80	<u>Sandstone</u> - as above
48.80 - 50.30	<u>Sandstone</u> - fine to very fine grain, salt and pepper, equigranular in dark gray matrix
50.30 - 51.80	
51.80 - 61.00	<u>Sandstone</u> - fine to medium grain with very fine grain dark gray splits, a few coaly blebs, some yellow-brown iron stain.



4332

Crows Nest Resources

Eau Claire Place, 525 - 3rd Avenue S.W., Calgary, Alberta T2P 2M7 Telex 03-822505
P.O. Box 2699, Station M, Calgary, Alberta T2P 2M7 Telex 03-822505
LIMITED

May 18, 1982

MINISTRY OF ENERGY, MINES
AND PETROLEUM RESOURCES

Ministry of Energy Mines and
Petroleum Resources,
617 Government Street,
Victoria, B.C.
V8V 1X4

MAY 19 1982

MINERAL TITLES FILE ROOM

REFERRED TO	DATE	INITIALS
C.C.C.		
D.C.C.C.		
G.C.		
FILE NO.		
FILES & CLERK		

Attention: P. Hagen
Administrator for Coal

Dear Mr. Hagen:

RE: Detailed Cost Breakdown of four
1980 Geological Reports

OPEN FILE
CONFIDENTIAL

In your correspondence dated February 16, 1982, you requested the cost breakdown of the following 1980 reports of work:

<u>PROJECT NAME</u>	<u>LICENCE NOS.</u>	<u>CATEGORY OF WORK</u>
Lodgepole	490-495, 4729-4735	Mapping, adits and drilling
Ewin Pass and Mt. Michael ✓	282, 283, 286-289, 291, 292, 1300, 1301 and 1302	Mapping and drilling
Corbin ✓	412, 413 and 414	Mapping and drilling
Line Creek North and Mt. Banner East ✓	277-281, 284, 285, 290, 293, 294, 297, 298, 301, 304 and 1299	Drilling, mapping, underground work

I am forwarding a detailed cost breakdown of the above four projects. Due to the high difficulty of assigning the type of work to the different categories, our cost breakdown shows a detailed explanation of the total expenditure. As a result of some estimated costs compared to the final invoice, our present total in every case is higher than the 1980 submission.

This breakdown includes the name of supplier, the type of work and the monies paid.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

I trust this information is satisfactory.

Sincerely,

L. Gramantik,
Assistant Landman

00 428

LG/ch

PROJECT NAME: CORBIN - COAL MOUNTAIN

<u>NAME OF SUPPLIER</u>	<u>TYPE OF WORK</u>	<u>MONIES PAID</u>
Ackles, G.J. Ltd.	Water hauling & Drill fluids	\$ 3,706.84
Alberta Government Telephones	Mobile Telephones	639.92
Anco Motels (Ferne)	Accommodation	520.25
Atco Structures Ltd.	Trailers	1,577.55
Big Yield Fertilizer Sales Ltd.	Fertilizer	494.41
Black Nugget Motor Inn	Room & Board	6,595.45
Bow Mac Truck Rentals	Field Units	141.42
Crows Nest Helicopters Ltd.	Helicopter	1,140.56
Daniels, Hugh	Consultant	1,990.80
Davies Exploration Logging Ltd.	Geophysical Logging	8,195.00
Drain Brothers Construction Ltd.	Cat Work	38,179.06
Expense Statements		4,297.90
Ferne Contractors Ltd.	Cat Work	26,859.30
Gallant Trucking Ltd.	Water Hauling	38,664.00
Henderson Heavy Hauling (1973) Ltd.	Trucking	170.00
Hydracore Drilling Ltd.	Consultant	690.35
International Aeradio	Field Radios	15.50
Interior Reforestation	Reclamation	2,130.00
Jamieson Geological Consultants	Consultant	9,015.95
Jass Laboratories Ltd.	Soil Analysis	84.00
Kenting Helicopters	Helicopter	25,339.20
Kiki & Sons Transfer Ltd. Labour	Trucking	1,163.28 5,876.85
Latka Contracting Ltd.	Slashing	4,033.92
Loring Lab	Analysis	10,626.61
Miscellaneous		<u>25,991.72</u> 57
Nielsen Drilling Company Ltd.	Air Rotary Drilling	2,822.75
Nohels Logging Company Ltd.	Cat Work	1,851.30
Rentway Canada Ltd.	Field Units	876.79
Riley Reproductions Ltd.	Drafting Supplies	-184.33
Roke Oil Enterprises Ltd.	Geophysical Logging	3,913.10
Rothel Excavating and Trucking	Trucking	4,995.00
Ryan, Dr. Barry D.	Consultant	6,946.60
Sal Enterprises Ltd.	Consultant	5,253.49
Shell Canada Limited	Fuel & Lubricants	2,231.84
Shelltech	Land Survey	7,831.38
Sparwood Esso	Fuel & Lubricants	2,149.77