00 320

K-FORDING RIVER 77(3)A.

FORDING COAL LIMITED

FORDING RIVER OPERATIONS

SUMMARY REPORT

1977 COAL RESERVE DEVELOPMENT PROGRAM

January 27, 1978

APPENDIX 5

Copies of diamond drill core structural logs.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

320

Objective:

Sampled:

Logged By: R.K. Date: November 1, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull			275'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
		Intersections taken from Driller's report - No Radiation Log.
0	25	Overburden and rock
25	30	Coal 5'
30	41	Rock
41	45	Coal 4'
45	100	Rock
100	102	Coal 2'
102	108	Rock
108	117	Coal 9'
117	130	Rock
130	145	Coal 15'
145	241	Rock
241	261	Coal 20' Seam 7
261	275	Rock
		End of Hole
		October 4, 1977

Core Size: B 50 Drill

Hole No. RH 265

2507—N D N

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:

Sampled:

Logged By: R. K. Date: November 7, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull			285'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log.
0	8	Overburden
8	30	Siltstone, Bottom 2' Mudstone
30	33	Coal 3'
33	41	Mudstone and Siltstone
41	42	Coal 1'
42	46	Mudstone
46	48	Coal 2'
48	61	Mudstone
61	69	Coal 8' Seam - 9.
69	72.5	Mudstone
72.5	74	Coal 1.5'
74	76.5	Mudstone
76.5	78	Coal 1.5'
78	95	Mudstone, bottom 3' siltstone
95	96.5	Coal 1.5' Seam 8.
96.5	143	Mudstone with bands of Siltstone and Sandstone
143	176	Interbedded Mudstone and Siltstone
176	209	Sandstone
209	223.5	Mudstone
223.5	225.5	Coal 2'
225.5	257	Mudstone with several thin bands of siltstone
257	259.5	Coal 2.5' Seam - 7U?
259.5	285	Mudstone End of Hole October 10, 1977

Core Size

B 50 Drill - no samples

Hole No. RH 266

Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled: [redacted]

Logged By: R.K. Date: January 10, 1978

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull			265'

From	To	Discard: Reason:
		No Radiation Log. Hole plugged at 18'.
0	15	Casing
15	45	Mudstone, brown cuttings
45	51	Coal 6'
51	54	Mudstone
54	116	Siltstone and sandstone, grey cuttings
116	122	Mudstone
122	124	Coal
124	126	Mudstone
126	145	Coal 19' Seam - 7
145	155	Mudstone
155	175	Siltstone
175	203	Mudstone, Brown Cuttin gs
203	237	Coal 34' Seam - 5
237	265	Mudstone
		End of hole at 265'
		January 6, 1978

Core Size: B50 Drill - No Samples

Hole No. RH 267

Diamond Drill Geological Log

Cominco

K. Fording 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R. K. Date: November 7, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull-North Area			285'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log.
0	23	Overburden
23	83.5	Mudstone
83.5	87.5	Coal 4'
87.5	150	Siltstone with several mudstone bands.
150	161	Mudstone
161	166	Sandstone
166	187	Mudstone and siltstone
187	206.5	Coal 19.5' Seam - R7
206.5	270	Mudstone with occasional Siltstone bands
270	285	Coal 15'+ Part Seam - R 5
		End of Hole in Coal
		October 22, 1977

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

B 50 Drill - No Samples

Hole No. RH 268

2507—N O N.

Diamond Drill Geological Log

Cominco

K. Fordine 77(3)A

Objective:		Sampled:			40 Scale
Logged By: R. K.	Date: November 7, 1977	Composites:			Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place: Turnbull Mountain	App. Bear:	App.: Dip.:	Length: 285'

From	To	Discard: For - 0 274' Intersections taken from Gamma Ray Log — Reason:
0	10	Overburden
10	30	Siltstone
30	91	Mudstone
91	96	Coal 5' Seam - R7U
96	162	Siltstone with mudstone interbeds occasionally
162	171	Mudstone
171	176	Siltstone
176	187	Mudstone
187	189	Coal 2' Part Seam - R7
189	237	Mudstone with thin bands of siltstone
237	241	Sandstone
241	245.5	Mudstone
245.5	271.5	Coal 26' (Rad. Log.)
271.5	273	1.5' Shale
273	285	Coal 12'(Probably coal with some shale,as intersection is from Drillers report.)

Hole No. _____ Elev. _____
Lat. _____ Dep. _____
Elev. Th.
Top of _____ @ _____ '
Top of _____ @ _____ '
Top of _____ @ _____ '
Top of _____ @ _____ '

End of Hole at 285' in Coal
November 15, 1977

Core Size
B-50 Drill - No Samples

Hole No. RH 269 Page 1 of 1

0

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)

Objective: To determine Location and Thickness of R4 or R2/1

Sampled:

Logged By: R.K. Date:

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull			274'

From	To	Discard: Reason: Intersection taken from Gamma Ray Log.
0	12	Overburden
12	72	Siltstone
72	85	Mudstone
85	97	Sandstone with mudstone 90 - 93'
97	125	Mudstone with thin bands of siltstone Major thrust elevation between 92' and 118'
125	204	Silty sandstone (Probably sandstone bed between R4 and R2/1)
204	226	Siltstone some sandstone
226	274	Basal, coarse grained sandstone
		End of Hole at 274'

Hole No. Elev.

Lat. Dep.

Elev. Th.

Top of @ ,

Top of @ ,

Top of @ ,

Top of @ ,

Core Size

Hole No. RH 270 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D N.

Diamond Drill Geological Log

Cominco

K-Fording 71(3)

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Objective:

Sampled:

Logged By: R.K. Date: January 9, 1978

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull			224'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	80	Basal sandstone, several feet of overburdend near top
80	86	Mudstone
86	114	Interbedded mudstone and siltstone
114	126	Coal 12'
126	160	Siltstone
160	183	Sandstone
183	194	Mudstone
194	216	Sandstone
216	219	Mudstone
219	224	Sandstone
		Hole abandoned at 224', as cone was dropped at the bottom of hole.
		December 6, 1977

Core Size

B50 Hole - No Samples

Hole No. RH271

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-Fording 7(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled: [redacted]

Logged By: R.K. Date: January 9, 1978

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull			165'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	17	Overburden
17	37	Mudstone
37	70	Coal 33' Seam -
70	94	Mudstone
94	120	Mudstone with several bands of siltstone
120	144	Coal 24' Seam - 5
144	165	Interbedded mudstone and siltstone
		end of hole
		December 21, 1977

Core Size

B50 Drill - No Samples

Hole No. RH 273 Page 1 of 1

0

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K- FORDING 77(3)A

Objective:				Sampled:	[redacted]
Logged By: R.K.	Date: January 9, 1978			Composites:	
Block:	Sect.:	Place: Turnbull	App. Bear:	App.: Dip.:	Length: 274'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	8	Overburden
8	43	Mostly siltstone, mudstone interbeds
43	83	Sandstone
83	154	Mudstone, with bands of siltstone
154	233	Siltstone
233	235	Coal 2'
235	261	Mudstone
261	274	Coal 13' + Seam -
		End of Hole in cool.
		December 16, 1977

Core Size

B50 Hole - No Samples

Hole No. RH 274 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.D.N.

Diamond Drill Geological Log

K. FORDING 77(3)A

Objective:			Sampled:		
Logged By: R.K.	Date: May 13'77		Composites:		
Block:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length: 450'

From	To	Discard: Intersections taken from Gamma Ray Neuton Log. Reason:
0	3	Overburden or fill.
3	10	Coal Lower part Seam - 5
10	53	Mudstone with some Siltstone, one foot coal band at 16.5'.
53	80	Siltstone
80	129	Sandstone with occasional siltstone interbeds -
129	167	Siltstone with sandstone interbeds
167	192	Sandstone
192	193.5	Coal 1.5'
193.5	196.5	Mudstone
196.5	201	Sandstone
201	238	Mudstone, with thin interbeds of siltstone
238	255	Sandstone, some siltstone near top
255	257	Coal 2' }
257	259	2' shale } SEAM - 2
259	261	Coal 2' }
261	272.5	Mudstone, siltstone near bottom
272.5	283.5	Coal 11' SEAM - 1
283.5	307	Sandstone (Basal)
307	342	Siltstone, major thrust fault zone at 310'
342	363	Sandstone
363	386	Mudstone, 2' coaly shale band at 376'
386	415	Siltstone
415	450	Siltstone and Sandstone (silty)

Core Size

Hole No. RH 388 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Diamond Drill Geological Log

K- FORDING 77(3)A

320

Objective:		Sampled:				
Logged By: R.K.	Date: May 10'77	Composites:				
Block:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length:	

From	To	Discard: Reason:
		Intersections taken from Gamma Ray-Neutron Log.
0	10	Coal L. Part Seam-5
10	24	Mudstone
24	30	Siltstone
30	34	Mudstone
34	40	Coaly Shale
40	52	Siltstone and mudstone
52	76	Mudstone
76	107	Siltstone with thin mudstone interbeds
107	148	Sandstone with siltstone bands
148	154	Siltstone and mudstone
154	191.5	Mostly sandstone with siltstone interbeds
191.5	192.5	Coal 1'
191.5	196.5	Siltstone
196.5	207.5	Coal 11' seam - 4
207.5	223	Mudstone
223	227	Coal 4'
227	276	Mostly mudstone with thin beds of siltstone
276	284	Silty sandstone
284	289	Mudstone
289	301	Sandstone
301	310	Coal 9'
310	349	Mudstone grading to silty sandstone towards bottom.
349	481	Sand stone
481	403	Mudstone End of Hole at 403'

Core Size

Hole No. RM 397 Page 10F

40 Scale

Color Plot & Dips	Ore Classes & Aver.
0	
1	

Diamond Drill Geological Log

K - FORDING 77(3)A

320

Objective:		Sampled:			
Logged By: R.K.	Date: May 19'77	Composites:			
Block:	Sect.:	Place: Clode Pit	App. Bear:	App.: Dip.:	Length: 303'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	29	Mudstone
29	31	Shaley Coal 2'
31	35.5	Mudstone
35.5	37.5	Shaley Coal 2'
37.5	52	Mudstone, with thin bands of Siltstone
52	82	Mostly Siltstone with Mudstone Interbeds
82	121	Siltstone and Sandstone Interbeds
121	128	Siltstone
128	158	Sandstone
158	176	Sandstone and Siltstone Interbeds, bottom, 4' Mudstone
176	197	Coal with 3' shale band at 186.5 21(18)' SEAM -4
197	226	Mudstone
226	242	Mudstone and Siltstone Interbeds
242	257	Sandstone
257	258.5	Shaley Coal 1.5')
258.5	261.5	Mudstone) SEAM - 2
261.5	264	Coal 2.5')
264	268	Mudstone
268	276.5	Siltstone and Sandstone
276.5	283.5	Coal 7' SEAM - 1
283.5	303	Sandstone, Basal.
		End of hole at 303' May 14' 77

Core Size

Hole No. RH 398 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Diamond Drill Geological Log

Cominco

K. Fordine 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: June 1, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			

From	To	Discard: Intersections taken from Gamma Ray - Neutron Log Reason:
0	32	Mudstone
32	50	Siltstone grading progressively to sandstone towards bottom
50	126	Sandstone
126	154	Interbedded mudstone and siltstone
154	155	Coaly shale
155	156	Shale
156	158	Coal 2'
158	180	Mudstone and siltstone interbeds
180	188	Mudstone
188	199	Coal 11' Part Seam-4
199	209	Mudstone, Possible fault zone
209	244.5	Coal with 2.5' shale band at 229'. 35.5 (33)' Seam-4
244.5	248	Shale and shaly coal
248	300	Mostly siltstone, mudstone near top
		End of hole at 300'
		May 27, 1977

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

Hole No. RM 399 Page 1 of

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-Fordenk- 77(3)A

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: R.K. Date: May 20'77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			400'

Discard: Reason: Intersections taken from Gamma Ray Neutron Log

From	To	
0	19	Fill
9	24	Mudstone and Siltstone
24	108	Sandstone, Silty interbed from 49' to 56'
108	154	Mudstone
154	192	Mostly Siltstone, with occasional interbeds of sandstone and mudstone
192	198.5	Mudstone
198.5	201.5	Coal 3' SEAM - 7U.
201.5	222	Mudstone
222	238	Sandy Siltstone
238	252	Mudstone
252	271.5	Coal 19.5 SEAM - 6.7
271.5	302	Mudstone, with occasional bands of siltstone
302	306	Coal 4'
306	327	Mudstone, sandy siltstone band from 317' to 320'
327	335	Coal 8'
335	367	Mostly Siltstone with mudstone bands
367	400	Sandstone with siltstone interbeds
		End of hole at 400' May 19'77

Core Size

Hole No. RH 446

Diamond Drill Geological Log

Cominco

K. Fardens 7(3)a

Objective:			Sampled:				320
Logged By: RK	Date: May 24'77		Composites:				
Block:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length: 402'		

40 Scale | Color Plot & Dips | Ore Classes & Aver.

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray - Neutron Log.	
0	23.5	Mudstone, some siltstone near top.	
23.5	40.5	Coal 17' SEAM-9	
40.5	44	Mudstone	
44	49	Coal with Shale from 45.5 to 47' . 5(3.5)'	
49	63	Mudstone	
63	67	Coal 4'	
67	97	Mudstone	
97	136	Siltstone	
136	215	Sandstone	
215	263	Mudstone	
263	284	Siltstone, with sandstone bands	
284	294.5	Mudstone	
294.5	297.5	Coal 3'	
297.5	306	Mudstone	
306	315	Silty sandstone and siltstone	
315	345.5	Siltstone, mudstone near top.	
345.5	347	Coal 1.5'	
347	369	Sandy siltstone with mudstone interbeds.	
369	402	Mudstone	
		End of hole at 402' May 20'77	

Core Size

Hole No. RH 485 Page 1 of

2507—N.D.S.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:		Sampled:			
Logged By: R.K.	Date: June 1, 1977	Composites:			
Block:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length: 420

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason: Intersections taken from Gamma Ray - Neutron Log
0	4	Coal Part Seam - 9
4	6	Shale
6	10	Coal and shale 4 (2.5)'
10	23	Mudstone
23	27	Coal 4 ' Seam - 8
27	50	Mudstone
50	88	Siltstone with thin silty sandstone and mudstone interbeds
88	107	Sandstone
107	122	Mudstone and siltstone near bottom
122	138	Sandstone
138	152	Mudstone and siltstone near bottom
152	195	Sandstone
195	235	Interbedded mudstone and siltstone
235	254	Sandy siltstone
254	264	Mudstone
264	267	Coal 3' Seam - 7 U
267	279	Mudstone
279	294	Siltstone
294	309	Mudstone
309	331	Siltstone with mudstone interbed
331	353	Mudstone
353	355	Coal 2 '

Core Size

Hole No. RH 486

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K. Fordins 77/3A

320

Objective:			Sampled:		
Logged By: R. K.	Date: June 1, 1977		Composites:		
Block:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
355	412	Mudstone, shaly coal bands at 382', 388' and 410'
412	450	Siltstone and sandstone interbeds
		End of hole at 450'
		May 25, 1977

Core Size

Hole No. RH 486

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.D.N.

Diamond Drill Geological Log

Coleman

K-Fording 72(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: June 1, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			408'

From	To	Discard: Intersections taken from Gamma Ray - Neutron Log (Reason:)
0	70	Sandstone, some siltstone near bottom
70	90	Mudstone with thin silty sandstone interbeds
90	150	Mudstone
150	176	Siltstone and sandstone interbeds
176	183	Mudstone
183	188	Coal 5' Seam - 7U
188	204	Mudstone
204	223	Coal 19' Seam - 7
223	244	Mudstone and Siltstone interbeds
244	271	Coal 27' Seam - 5
271	310.5	Mudstone, siltstone from 295' to 300'
310.5	314	Coal 3.5'
314	337	Mudstone, sandstone interbed from 323' to 327'
337	339	Coal 2'
339	357	Mudstone, with sandstone interbed
357	360	Coal 3'
360	372	Mudstone
372	377	Coal 5'
377	408	Mudstone
		T. D. 408'
		May 22, 1977

Core Size

Hole No. RH 487 Page 1 of 1

2507—N.D.N.

Diamond Drill Geological Log

Gaminco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: June 1, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			450'

From	To	Discard: Reason: Intersections taken from Gamma Ray-Neutron Log
0	6.5	Mudstone
6.5	26	Coal 19.5 Seam-9
26	28	Shale
28	33.5	Coal with 1.5' shale band at 30' 5.5(4)'
33.5	48.5	Mudstone
48.5	52	Coal 3.5' Seam-8
52	62	Mudstone
62	83	Siltstone with mudstone interbeds
83	116	Siltstone with silty sandstone
116	158	Sandstone
158	188	Interbedded mudstone and siltstone
188	199	Sandstone
199	257	Mostly mudstone some siltstone
257	288	Siltstone, some mudstone near bottom
288	291	Coal 3'
291	342.5	Mostly mudstone, with siltstone and silty sandstone interbeds
342.5	353.5	Coal with 2' and 1.5' shale bands at 346' and 350' respectively 11(7.5)'
353.5	412	Mostly siltstone with mudstone interbeds
412	413.5	Coal 1.5'
413.5	421	Mudstone
421	450	Sandstone near top, grading progressively to silty mudstone towards bottom
		T.D. 450'
		May 22, 1977

Core Size

Hole No. R.H. 488 Page 1 of 1

0

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

Logged By: R.K. Date: June 13, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			405'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason: INTERSECTIONS TAKEN FROM GAMMA RAY - NEUTRON LOG.
0	3	Rock or fill.
3	8.5	Coal with thin shale band 5.5' seam - lower 9
8,5	25	Mudstone
25	27	Coal 2' Seam - 8
27	38	Mudstone.
38	72	Siltstone, some silty sandstone near bottom
72	118	Sandstone
118	130	Siltstone
130	135	Sandstone
135	178	Interbedded siltstone and mudstone
178	223	Mudstone
223	244	Siltstone with thin bands of sandstone and mudstone
244	251	Mudstone
251	253	Coal 2' Seam - 7U
253	260	Mudstone possible fault at 258'
260	270	Silty sandstone
270	298	Mudstone, siltstone from 280 - 290'
298	307	Coal 9' Part r.7
307	344	Sandy siltstone
344	345	Coal 1'
345	356	Sandstone
356	391	Interbedded mudstone and siltstone
391	405	Siltstone and silty sandstone.
		End of Hole at 405' June 2, 1977

Core Size

Hole No. RH 489 Page 1 of 1

2507—N.D.N.

Diamond Drill Geological Log

K-FORDING 77(3)A

40 Scale

Objective:			Sampled:			Color Plot & Dips	Ore Classes & Aver.
Logged By: R.K.	Date: June 13, 1977		Composites:				
Stock:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length: 300'		

From	To	Discard: Reason: INTERSECTIONS TAKEN FROM GAMMA RAY - NEUTRON LOG.
0	16	Overburden or fill
16	21	Mudstone
21	56	Silty sandstone and siltstone
56	101	Sandstone
101	170	Mostly siltstone with mudstone interbeds.
170	176	Mudstone
176	201	Coal 25' Seams - 9
201	204.5	3.5 Mudstone
204.5	209.5	Coal with 1' Shale at 206' 5(4)'
209.5	221.5	Mudstone
221.5	224.5	Coal 3' Seam - 8
224.5	242	Mudstone
242	272	Interbedded mudstone and siltstone
272	300	Interbedded sandstone and siltstone
		End of hole at 300'
		June 4, 1977.

Core Size

Hole No. RH 490 Page 1 of 1

2507—N.O.N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: June 14, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			375'

From	To	Discard: INTERSECTIONS TAKEN FROM GAMMA RAY - NEUTRON LOG Reason:
0	21	Mudstone
21	50	Coal with one foot shale band at 47', 29 (28) Seam - 5
50	114	Mudstone, Coal stringers at 87'
114	135	Siltstone, mudstone near bottom.
135	151	Coal 16'
151	170	Mudstone
170	172	Coal 2'
172	218	Mudstone with several bands of siltstone.
218	324	Coal with 1' and 2' partings at 286' and 317.5'
		respectively. 106 (103) Seam - 4 (faulted)
324	330	Siltstone.
330	340	Mudstone
340	356	Siltstone
356	375	Sandstone
		End of Hole at 375'
		June 3, 1977

Core Size

Hole No. RH 491 Page 1 of 1

2507—N.D.N.

Diamond Drill Geological Log

K. FORDING 77(3)A

320

Objective:		Sampled:			
Logged By: R. K. Date: September 9/77		Composites:			
Block:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length: 339'

From	To	Discard: Reason:
		Intersections taken from Gamma - Ray - Neutron Log
0	8	Overburden or fill
8	76	Mostly mudstone with occasional siltstone bands.
76	79.5	COAL 3.5'
79.5	86	6.5' Mudstone
86	112	COAL 26' SEAM - 7
112	200.5	Mudstone with several bands of siltstone, coal stringers at 116'
200.5	221	COAL 20.5' SEAM - r.5
221	235	Mudstone
235	245	Siltstone
245	253	Mudstone
253	257	Coaly shale
257	262	Mudstone.
262	265.5	COAL 3.5'
265.5	285	Siltstone
285	297	Sandstone
297	339	Siltstone
		END OF HOLE AT 339'
		JUNE 17/77

	Elev.	Th.
Hole No.	Elev.	
Lat.	Dep.	
Top of @		'
Top of @		'
Top of @		'
Top of @		'

Core Size

Hole No. RH 492 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Diamond Drill Geological Log

K - FORDING 77(3)A

Objective:			Sampled:		
Logged By: R.K.	Date: June 14, 1977		Composites:		
Block:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length: 350'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: INTERSECTIONS TAKEN FROM GAMMA RAY - NEUTRON LOG. Reason:
0	26	Mudstone
26	38	Siltstone
38	60.5	Mudstone
60.5	63.5	Coal 3' Seam - 7U
63.5	69	Mudstone
69	96.5	Coal 27.5' Seam - 7
96.5	131.5	Mudstone
131.5	158	Coal 26.5' Seam - 5
158	187.5	Mudstone, with thin bands of siltstone.
187.5	196.5	Coal 9' Part Seam - r.7
196.5	210	Mudstone
210	218	Siltstone
218	229	Mudstone
229	272	Coal 43' Seam - r.5
272	274	2' Shale
274	275	Coal 1'
275	279.5	Mudstone
279.5	280.5	Coal 1'
280.5	306.5	Mudstone
306.5	309	Coal 2.5'
309	325	Mostly mudstone some siltstone
325	350	Silty Sand Stone
		End of Hole at 350' June 5, 1977

Core Size

Hole No. RH 493 Page 1 of 1

2507—N D.N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

320

Objective:			Sampled:		
Logged By: R.K.	Date: June 15, 1977		Composites:		
Block:	Sect.:	Place: CLODE PIT	App. Bear:	App.: Dip.:	Length: 406'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Intersections taken from Gamma Ray - Neutron Log. Reason:
0	8	Fill
8	17	Mudstone
17	30	Sandstone and siltstone near bottom
30	47	Mudstone
47	76	Coal 29' SEAM - 5
76	78	Shale
78	80	Coaly Shale
80	109	Mostly siltstone with mudstone interbeds
109	137	Mudstone, coal stringers at 115'
137	152	Siltstone
152	166	Mudstone
166	176	Coal 10'
176	179.5	3.5' Shale
179.5	183.5	Coal 4'
183.5	210	Mostly siltstone, some mudstone near top.
210	239	Mudstone
239	280	Coal with 2.5' Shale band at 270.5' 41 (38.5') SEAM - 4
280	287.5	Mudstone
287.5	291.5	Coal 4'
291.5	316	Siltstone, some sandstone near top
316	360	Mudstone, coal stringers at 346'
360	382	Siltstone
382	406	Sandstone. End of hole

Core Size

Hole No. RH 494 Page 10F

1

2567—H.D.K.

Diamond Drill Geological Log

K-FORDING 77(3)A

40 Scale

Color Plot & Dips "C"e Classes & Alter.

320

Objective:

Sampled:

Logged By: R. K. Date: September 9/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			~350'

Reason:

Intersections taken frommGamma Ray - Neutron Log

From	To	Discard:
0	5	COAL 5'
5	10	5' Mudstone
10	34.5	COAL 24.5' SEAM - 7
34.5	71	Mudstone
71	103	COAL 29' SEAM - 5
103	105.5	2.5' Shale
105.5	107	COAL 1.5'
107	131	Mostly mudstone with siltstone interbeds
131	133	COAL 2'
133	139	6' Shale
139	167	COAL 28' SEAM r-7
167	197.5	Mudstone with bands of siltstone
197.5	217.5	COAL with 2' Shale band at 212.5' 20 (18)' SEAM - r 5
217.5	228	Mudstone
228	230	Coal 2'
230	245	Mudstone
245	266	Siltstone
266	350	Mudstone

Hole No. Elev.

Lat. Dep.

Elev. Th.

Top of @ '

Top of @ '

Top of @ '

Top of @ '

END OF HOLE AT 350'

JUNE 15/77

Core Size

Hole No. RH 495 Page 1 of

Diamond Drill Geological Log

K. Fordink 77(3)A

320

Objective:

Sampled:

Logged By: R. K. Date:

Composites:

Boor:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			350'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	30.5	Mudstone, with some siltstone
30.5	35	COAL 4.5'
35	40.5	5.5' Shale
40.5	71	COAL with 1.5' shale band at 65' 30.5 (29') SEAM - 5
71	83	Mudstone
83	138	Mostly siltstone with bands of mudstone and sandstone
138	158	Mudstone
158	180	Sandy siltstone
180	201.5	COAL 21.5' SEAM r.5
201.5	205	Mudstone
205	207	COAL
207	241	Siltstone
241	278	Sandstone
278	284	Siltstone
284	299	Silty sandstone
299	330	Siltstone, some mudstone near top
330	350	Mudstone
		END OF HOLE AT 350'
		JUNE 16/77

Hole No. _____ Elev. _____

Lat. _____ Dep. _____

Elev. Th.

Top of _____ @ _____ '

Top of _____ @ _____ '

Top of _____ @ _____ '

Top of _____ @ _____ '

Core Size

Hole No. RH 496 Page 1 of 1

40 Scale

Color Plot & Dips Ore Classes & Aver.

0

Diamond Drill Geological Log

Cominco

K. FORDING 77(37A

320

Objective:		Sampled:			
Logged By: R. K.	Date: September 9/77	Composites:			
Block:	Sect.:	Place: Clode Pit	App. Bear:	App.: Dip.:	Length: 333'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log.
0	57	Mudstone
57	86	Siltstone
86	95	Mudstone
95	97	COAL 2'
97	106	Mudstone
106	109	COAL 3'
109	118.5	Mudstone
118.5	140.5	COAL 22' SEAM - 7
140.5	163	Mudstone with bands of siltstone
163	220	COAL 57' SEAM - 5 and SEAM - r7
220	268	Mudstone
268	284	COAL 16' }
284	288	4' Mudstone } SEAM - r5
288	293	COAL 5' }
293	310	Siltstone
310	324	Mudstone
324	333	Siltstone, sandstone near bottom

Hole No. _____ Elev. _____

Lat. _____ Dep. _____

	Elev.	Th.
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'

END OF HOLE AT 333'

JUNE 15/77

Core Size

Hole No. RH 497

Page 1 of 1

2507-

Diamond Drill Geological Log.

Cominco

K. Fordink 71(3)K

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Objective:

Sampled:

Logged By: R. K. Date: September 9/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Clode Pit			420'

Intersections taken from Gamma Ray - Neutron Log

From	To	Discard: / Reason:
0	37	Blasted - loose rock
37	75	Sandstone
75	126	Mudstone
126	143	Mostly siltstone with sandstone interbed
143	151	Mudstone
151	153.5	COAL 2'
153.5	172	Mudstone
172	188	Sandy siltstone and siltstone
188	197	Mudstone
197	228.5	COAL 31.5' SEAM - r.7
228.5	272	Mudstone
272	280	COAL 8' Part SEAM - r.5
280	286	Mudstone
286	314	Siltstone, Coal stringers at 311'
314	366	Sandstone, with siltstone bands
366	376	Mudstone
376	420	Sandstone

END OF HOLE AT 420'

JUNE 18/77

Hole No. _____ Elev. _____

Lat. _____ Dep. _____

	Elev.	Th.
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'

Core Size

Hole No. RH 498

2507—

Diamond Drill Geological Log

Cominco

K. FORDING 77(3)A

320

Objective:

Sampled:

Logged By: R. K. Date: September 8/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Clode Pit			301'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard. Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	54	Mostly mudstone with several bands of siltstone
54	56	COAL 2'
56	63.5	Mudstone
63.5	91	COAL 27.5' - SEAM - 7
91	144	Mudstone with several siltstone bands
144	148	COAL 4'
148	195	Mostly mudstone with bands of siltstone
195	203	COAL 8' PART SEAM - r.5 ?
203	225.5	Mudstone
225.5	256.5	COAL 31' SEAM - r.5
256.5	301	Interbedded siltstone and mudstone
		END OF HOLE AT 301'
		JUNE 26/77

Hole No.	Elev.	
Lat.	Dep.	
	Elev.	Th.
Top of	@	'
Top of	@	'
Top of	@	'
Top of	@	'

Core Size

Hole No. RH 499

Diamond Drill Geological Log

Cominco

K. Forbes 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

DIRECTIONAL SURVEY DONE BY ROKE 320

Logged By: R. K. Date: September 20/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL MOUNTAIN			

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray Neutron Log	
0	18	Overburden	(Casing 32')
18	26	COAL 8'	SEAM - 11u
26	34	Mudstone	
34	35.5	Shaley Coal 1.5'	
35.5	39	Mudstone	
39	41	Shaley Coal 2'	COAL BANDS OF SEAM - 11
41	44.5	Mudstone	
44.5	47	COAL 2.5'	
47	84	Mudstone	
84	165	Mostly siltstone, some sandstone near top and mudstone near bottom	
165	183	COAL 18' SEAM - 9	
183	221	Mudstone, two approx. 1' bands at 187' and 192' respectively	
221	320	Sandstone, some silty sandstone near top	
320	354	Mudstone	
354	370	Siltstone	
370	383	Sandstone	
383	471	Mudstone with occassional thin interbeds of siltstone	
471	498	Shaley siltstone	
498	511.5	Mudstone	
511.5	515	COAL 3.5'	
515	522	7' Mudstone	
522	541	COAL 19' SEAM - 7	

Core Size

Hole No. RH 605 A

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K. Fordyce 77(3)A

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard:	Reason:
541	572	Mudstone	
572	600	COAL 28' SEAM - 5	
600	613.5	Mudstone	
613.5	615.5	Shaley Coal 2'	
615.5	618.5	Mudstone	
618.5	621	Shaley Coal 2.5'	
621	674	interbedded mudstone and siltstone	
674	676	COAL 2'	
676	680	4' Mudstone	
680	688.5	COAL with 1' Shale band at 686' 8.5 (7.5)'	SEAM BELOW MAJOR THRUST SEAM - R
688.5	698	9.5' Mudstone	
698	707	COAL 9'	
707	751	Mudstone; siltstone 711 - 715'	

END OF HOLE

JUNE 4/77

Core Size

Hole No. RH 605 A

2507—N.D.K.

Diamond Drill Geological Log

Cominco

K- Fording- 77(3)

320

Objective:		Sampled:			
Logged By: H. Heck, S. Siska Date: May 10'77		Composites:			
Block:	Sect.:	Place: TURNBULL	App. Bear:	App.: Dip.:	Length: 473'

From	To	Discard: Reason: Coal seam intersections taken from Gamma Ray- Neutron Log.
0	15	Overburden
15	31	Siltstone Light grey, weathered.
31	39	Coal 8' SEAM-1 ✓
39	87	Sandstone (Basal) medium grained, medium grey grading to fine to medium grained, light grey sandstone towards bottom
87	98	Silstone, light grey
98	125	Sandstone, fine grained, dark grey and grey, siltstone disintegrated-grey from 111' to 115'.
125	165	Siltstone, disintegrated dark grey to light grey.
165	205	Sandstone and sandy siltstone interbeds. fine grained light - dark grey.
205	234	Sandstone fine grained and siltstone interbeds. dark-medium grey.
234	244	Sandstone. medium grained - medium grey.
244	253	Mudstone, carbonaceous. Probable fault at 247'.
253	254	Shaly Coal 1'
254	258	Mudstone
258	278	Siltstone, with occasional silty sandstone interbeds, dark grey.
278	286	Siltstone and mudstone; dark grey, slightly carbonaceous.
286	313	Sandstone - fine grained with several siltstone interbeds; slightly silicified, dark grey
313	407	Sandstone, medium grained, dark grey, think carbonaceous bands at 341' (10-15% vitrain), 379' and from 390' to 396' (well indurated).
407	411	Sandy siltstone
411	417	Mudstone, some siltstone near top, dark grey
417	450	Coal with two feet undstoneband at 443'. 33(31) seam-R4 ✓

Core Size
Rotary chip samples.
RH 621
Hole No.

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D.H.

Diamond Drill Geological Log

Cominco

K. Fording 77/3/A

320

Objective:		Sampled:			
Logged By:	Date:	Composites:			
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
450	453	Shale and shaley coal.
453	458	Mudstone
458	466	Sandstone and siltstone
466	473	Sandstone
		END OF HOLE AT 473' May 3'77.

Core Size

Hole No. RH 621 Page 2 of 2

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—

Diamond Drill Geological Log

K - FORDING 77(3)A

40 Scale

Color Plot & Dips Ore Classes & Acc.

Objective:

Sampled:

320

Logged By: R. K. Date: September 6/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			652'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	7	Overburden
7	76	Sandstone
76	86.5	Siltstone and sandstone interbeds
86.5	89.5	COAL 3' SEAM - 2
89.5	101	Siltstone
101	108	COAL 7' SEAM - 1
108	260	Basal sandstone, grading to silty sandstone towards bottom
260	323	Mudstone with 1' and 1.5' Coal bands at 277' and 301.5'
323	376	Siltstone with several mudstone bands
376	449	Sandstone
449	474	Siltstone
474	478	Mudstone
478	513	COAL with 1.5' mudstone band at 504' 35 (33.5') SEAM - R4
513	524	Mudstone and siltstone
524	634.5	Sandstone
634.5	639.5	COAL SEAM - R2
639.5	649.5	Siltstone
649.5	652	COAL PART SEAM - R1
		END OF HOLE @ 652' JULY 22/77

Hole No. _____ Elev. _____

Lat. _____ Dep. _____

Elev. Th.

Top of _____ @ _____ '

Top of _____ @ _____ '

Top of _____ @ _____ '

Top of _____ @ _____ '

Core Size

Hole No. RH 622 Page 1 of 1

Diamond Drill Geological Log

K-FORDING 77(3)A

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: H. Heck, Sisiska Date: May 10'77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			575'

Discard: Reason:

Coal Intersections taken from Gamma Ray - Neutron Log.

From	To	
0	31	Overburden
31	45	Sandstone fine grained and silty sandstone, Light grey.
45	96	Sandstone medium grained, fine grained near bottom, med. grey, well indurated
96	117	Siltstone, medium grey with fine grained sandstone, well indurated from 105-110.'
117	129	Siltstone and sandstone, high clay content up to 120'
129	145	Sandstone medium grained dark grey
145	165	Sandstone fine to medium grained, dark grey, lower 10' (155'-165'), poorly consolidated-possible fault zone.
165	175	Sandstone very fine grained, dark grey, possible fracture filling by silica.
175	180	Sandstone fine grained, dark grey well induriated.
180	195	Sandstone, fine to medium grained, dark grey, poorly consolidated.
195	218	Sandstone fine grained and siltstone med. dark grey.
218	292	Sandstone, med grained, med. to dark grey. from 225' to 245' poorly consolidated 275-285' fe oxide staining
292	324	Sandstone, coarse grained, 1·5' carbonaceous band at 303', 280-295' calcite infilling. medium grained med. grey
324-	328	Carbonaceous mudstone.
328	365	Sandstone with several thin siltstone interbeds, 328-335' fine to med. grained, med. grey and 335-345' med to course grained.
365	375	Mudstone , dark grey, slightly carbonaceous
375	412	Coal with 2' shaleband at 404'. 37 (35) seam - R4, mainly clarain and vitrain
412	416	Mudstone
416	417.5	shaley Coal
417.5	436	Siltstone and sandstone
436	538	Sandstone, medium to coarse grained, med. to light grey

Hole No. Elev.

Lat. Dep.

Elev. Th.

Top of @

Top of @

Top of @

Top of @

Core Size

Rotary Chip Samples

Hole No. RH623 Page 10 F 2

Diamond Drill Geological Log

K - Fording 77(3)A

320

Objective:		Sampled:				
Logged By:	Date:	Composites:				
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

From	To	Discard: Reason:
538	542	Mudstone , dark grey, carbonaceous
542	546.5	Coal 4.5 Seam - R2, mainly fusain,
546.5	558	Mudstone grading to sandstone towards bottom , carbonaceous
558	568	Coal 10' Seam - R 1 , mainly fusain and clarain
568	575	Basal Sandstone , medium grained med grey, minor coal lenses
		END OF HOLE AT 575' May 6'77

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

Hole No. RH 623 Page 2 of 2

Diamond Drill Geological Log

Consolidated

K-Fordink 7163A

Objective:

Sampled:

320

Logged By: R. K. Date: May 24, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			415'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	25	Overburden ? (Driller reported 14' Overburden)
25	152	Basal sandstone, grading to sandy siltstone towards bottom
152	168	Mudstone and sandstone interbeds coal stringers at 164'
168	192.5	Mudstone
192.5	194.5	Coal 2'
194.5	209	Mudstone
209	229	Siltstone, grading to silty sandstone towards bottom
229	326	Sandstone
326	351.5	Mudstone, siltstone from 326' to 333'
351.5	386	Coal, with 3' shale band from 379' to 382' 34.5 (31.5)' - Seam - R4
386	402	Mudstone 386 - 391' disintegrated
402	415	Sandstone medium grained, coarse grained near bottom, med. grey
		End of hole at 415'
		May 6, 1977

Core Size

Hole No. RH 624 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.D.N.

Diamond Drill Geological Log.

Cominco

K. FARDINK 77(3)A

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: R. K. Date: September 7/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			567'

Discard: Reason:

Intersections taken from Gamma Ray Log

From	To	
0	13.5	COAL PART SEAM - 4
13.5	23	Mudstone
23	31	COAL 8' LWR. PT. SEAM - 4
31	63	Mostly sandstone with siltstone interbeds
63	137.5	Sandstone
137.5	141.5	COAL 4' SEAM - 2
141	154	Siltstone
154	162	COAL 8' SEAM - 1
162	257	Basal Sandstone
257	271	Silty sandstone Major thrust elevation at 270'
271	274	COAL 3'
274	283	9' Mudstone SEAM - R5
283	293	COAL 10'
293	344	Mudstone with occasional coal stringers
344	386	Siltstone
386	492	Sandstone
492	504	Siltstone
504	511	Mudstone
511	545	COAL with 2' mudstone band at 537.5' 34 (32)' SEAM - R4
545	546.5	Mudstone
546.5	548	Shaly Coal 1.5'
548	558	Mudstone
558	567	Sandstone END OF HOLE AT 567' MAY 26/77

Hole No.	Elev.		
Lat.	Dep.		
		Elev.	Th.
Top of	@		'
Top of	@		'
Top of	@		'
Top of	@		'

Core Size

Hole No. RH 625

Page 1 of 1

2507-

Diamond Drill Geological Log

K-Fordink 77(3)A

320

Objective:

Sampled:

Logged By: R. K. Date: May 24, 1977

Composites:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			485'

From	To	Discard: Intersections taken from Gamma Ray - Neutron Log — Reason:
0	16	Overburden
16	83	Sandstone, med. - med. to coarse grained, med. - dark grey
83	93	Siltstone med. - dark grey, mudstone near bottom
93	95	Coal 2' Seam - 2
95	107.5	Siltstone
107.5	114.5	Coal 7' Seam - 1
114.5	198	Sandstone (Basal) coarse grained grading progressively to sandy siltstone towards bottom
198	212.5	Mostly mudstone, some siltstone, probable thrust fault zone at 200'
212.5	220.5	Coal 8' Seam - R5 (Part)
220.5	222	Mudstone
222	223.5	Shaly coal
223.5	270	Mudstone, black, carbonaceous, thin coal band at 250.5' (less than 2')
270	302	Siltstone med. - med. dark grey
302	310	Sandstone fine - med. grained, med. grey
310	416	Sandstone, med. grained near top, coarse grained, several siltstone bands
416	429	Mudstone and siltstone, dark grey
429	461	Coal with two feet shale band from 455' to 457' 32(30) Seam - R4
461	476	Mudstone, bands of siltstone near bottom
476	485	Sandstone fine grained, dark grey

End of hole at 485'

May 13, 1977

Core Size

ROTARY CHIP SAMPLES

Hole No. RH 626

Page 1 of 1

2507—N.D.N.

Diamond Drill Geological Log

K. FORDINE 77(3)A

Objective:

Sampled:

Logged By: R.K. Date: June 8, 1977

Composites:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			501'

From	To	Discard: Reason: INTERSECTIONS TAKEN FROM GAMMA RAY - NEUTRON LOG.
0	13	Overburden, some carbonaceons mudstone near bottom
13	95	Sandstone.
95	97.5	Coal 2.5' Seam - 2
97.5	101	Mudstone
101	112	Siltstone and silty sandstone
112	119	Coal 7' Seam - 1
119	174	Sandstone (Basal), Thrust fault elevation at 173'
174	179	Coal 5'
179	187	Mudstone
187	216	Coal 29' Seam - R 5
216	253	Mudstone, thin shaley coal bands at 228', 236' and 246'
253	313	Siltstone with silty sandstone and mudstone interbeds.
313	389	Sandstone, mudstone interbed 360 - 365'
389	419.5	Mudstone with several siltstone bands.
419.5	454.5	Coal with 2.5' shale band from 447.5' to 450'. 35 (32.5) Seam - R 4
454.5	501	Sandstone
		End of Hole at 501'
		May 17, 1977

Core Size

Hole No. RH 627 Page 1 of 1

2507—N.D.N.

Diamond Drill Geological Log

K. Fordyce 77(3)A

320

Objective:		Sampled:			
Logged By: K. Heck, S.Siska Date: May 20'77		Composites:			
Block:	Sect.:	Place: TURNBULL	App. Bear:	App.: Dip.:	Length: 442'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason: Intersections corrected by Gamma Ray Log
0	10	Overburden
10	16	Sandstone, medium grained, medium grey.
16	28	Sandstone fine to med, grained, with sandy siltstone interbeds, possible rip up clasts to 20'
28	35	Sandstone fine to med. grained
35	45	Siltstone disintegrated
45	105	Sandstone, med. to coarse grained, light grey near top, med. grey near bottom, slightly carbonaceous from 60' -70'
105	115	Sandstone, medium grained, disintegrated - possible fault.
115	117	Mudstone
117	121	Coal 4' mainly clarain
121	125	Mudstone, carbonaceous, some siltstone near bottom
125	149	Sandstone, mostly med. grained, occasionally coarse grained, coal lenses from 135 to 140'
149	154	Shaley siltstone dark grey
154	170	Sandstone med, grained light grey
170	174	Coal and shaley coal 4'
174	190	Mudstone, dark grey, carbonaceous
190	210	Coal, mainly clarain 20' SEAM -R5
210	244	Mudstone, dark grey, occasional siltstone interbeds, two feet coal band at 220'.
244	262	Siltstone and fine grained sandstone light grey
262	287	Silty Sandstone
287	354	Sandstone mostly coarse grained, with fine to med.grained intervals
354	386	Sandstone fine to med. grained, some silty mudstone near top
386	392	Mudstone, dark grey to black
392	426	Coal with 0.5' and 2.5' shale bands at 397' and 419'

Core Size

CHIP SAMPLES

Hole No. RH 628

2507—N D N.

Diamond Drill Geological Log

K-Fording 77(3A

Objective:		Sampled:					320
Logged By:	Date:	Composites:					
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:		

40 Scale

Color Plot & Dips | Ore Classes & Aver

From	To	Discard: Reason:
		Mainly claraine, some vitrain 34(31') SEAM - R4.
426	436	Mudstone, highly carbonaceous near top
436	442	Siltstone med. grey, slightly carbonaceous.
		END OF HOLE AT 442' May 10'77

Core Size

Hole No. RH628 Page 2 of 2

Diamond Drill Geological Log

Comirco

K. Fording 77(3)A

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: H. Heck RK Date: May 19'77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			316'

Reason

From	To	Discard: COAL INTERSECTIONS TAKEN FROM GAMMA RAY - NEUTRON LOG
0	20	Overburden? (Driller reported 10' overburden)
20	25	Glacial till
25	75	Sandstone, fine to medium grained, medium grey (Basal)
75	82	Siltstone medium grey, slightly calcareous
82	85	Mudstone, dark grey carbonaceous
85	101	Siltstone
101	113	Sandstone fine to medium grained, light grey
113	116	Mudstone Medium grey
116	134	Sandstone fine to medium grained light grey, with thin siltstone interbeds.
134	204	Sandstone, coarse grained, dark grey with med. grained sandstone bands
204	213	Siltstone, light grey
213	247	Sandstone, fine to med. grained, light - dark grey with silty mudstone and siltstone bands
247	259	Siltstone dark grey
259	264	Mudstone
264	270	Coal 6' or siltstone
270	297.5	Coal 27.5 (26)'
297.5	316	Carbonaceous mudstone, grading to siltstone towards bottom. some sandstone near bottom.
		END OF HOLE AT 316' May 14'77

Core Size CHIP SAMPLES

Hole No. RH 629 Page 1 of 1

2507—N C N.

Diamond Drill Geological Log.

K-Fording 77(3)A

320

40 Scale

Color Plot & Dips | Ore Classes & Alter.

Objective:		Sampled: BORE HOLE DIRECTIONAL SURVEY DONE BY ROKE.			
Logged By: P. K. Date: September 7/77		Composites:			
Basin:	Sect.:	Place: TURNBULL	App. Bear:	App.: Dip.:	Length: 750'

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray - Neutron Log.	
0	9	Overburden	
9	44	Siltstone	
44	85	Mostly sandstone; sandy siltstone 51 - 63'	
85	113.5	Mudstone and siltstone interbeds	
113.5	117.5	COAL 4'	
117.5	126	Mudstone	
126	149	COAL 23'	SEAM - 7
149	153	4' Mudstone	
153	158	COAL 5'	
158	202.5	Mudstone	
202.5	208.5	COAL 8'	SEAM - 5
208.5	239	Mudstone with silty intervals	
239	244	COAL 5'	
244	251	7' Mudstone	
251	265	COAL 14'	
265	294	Mudstone with several thin siltstone bands	
294	335	Mostly siltstone with sandstone bands, some sandstone near bottom	
335	351	Interbedded siltstone and mudstone	
351	408	Mudstone	
408	425.5	Mudstone with siltstone interbeds	
425.5	428.5	COAL 3' SEAM - R7U	
428.5	445	Mudstone	
445	474	Sandstone and sandy siltstone: Mudstone 456 - 461'	

Hole No.	Elev.
Lat.	Dep.
	Elev. Th.
Top of @	'
Top of @	'
Top of @	'
Top of @	'

Core Size

Hole No. RH 630

2507-

Diamond Drill Geological Log

K-Feeding 77(3b)

Objective:			Sampled:		320
Logged By:	Date:		Composites:		
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips — Pie Classes & Axes

From	To	Discard. Reason:
474	501.5	Siltstone and mudstone near bottom
501.5	538.5	COAL with one foot shale band at 526' 37 (36)' SEAM - R7
538.5	562.5	Mudstone
562.5	586.5	COAL with two feet shale band at 581' 24 (22)' SEAM - R5
586.5	598	Siltstone, mudstone near top
598	611	Mudstone
611	624	Siltstone
624	640	Sandstone
640	651	Siltstone
651	689	Mostly mudstone with siltstone bands
689	709	Sandy siltstone
709	719	Mudstone
719	750	Siltstone, some sandstone near bottom
		END OF HOLE AT 750'

Core Size

Hole No. RH 630

Diamond Drill Geological Log

K- FORDENE 77(3)A

320

40 Scale

Color Plot & Dips | Ore Classification

Observer:

Logged By: Date:

Sampled:
BORE HOLE DIRECTIONAL SURVEY DONE BY ROKE.

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			684'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	20	Overburden
20	31.5	Mudstone
31.5	38.5	COAL 7' SEAM - 11U
38.5	46.5	Mudstone
46.5	50	Shaly Coal
50	57.5	Mudstone
57.5	60	Shaly Coal
60	113	Mudstone with Coal stringers at 70' and 78'
113	195	Siltstone; some mudstone near bottom
195	220	COAL with one foot shale band at 197' 25 (24)' SEAM - 9
220	250	Mudstone with two shaly Coal bands 222.5 and 226'
250	324	Mostly sandstone, some sandy siltstone near top
324	465	Mostly mudstone with occasional siltstone interbeds
465	477	Siltstone
477	515	Mudstone
515	554	Siltstone with several mudstone interbeds
554	607	Sandy siltstone with sandstone bands
607	633	Mudstone with siltstone interbed
633	684	Siltstone, with sandy intervals, some mudstone near bottom
		END OF HOLE AT 684'
		AUGUST 1/77

Hole No.	Elev.		
Lat.	Dep.		
		Elev.	Th.
Top of	@		'
Top of	@		'
Top of	@		'
Top of	@		'

Core Size

Hole No. RH 632

Page 1 of 1

Diamond Drill Geological Log

K. Fredrick 77(3)

Objective:

Sampled:

Logged By: R.K. Date: June 8, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			542'

From	To	Discard: Reason: INTERSECTIONS TAKEN FROM GAMMA RAY - NEUTRON LOG.
0	28	Overburden. (Driller reported 41' overburden)
28	42.5	Coal 14.5'
42.5	63	Mostly siltstone some mudstone. POssible fault elev. at 63'
63	86	Mudstone
86	88	Coal 2'
88	94.5	Mudstone
94.5	116.5	Coal with 3' shale parting at 100.5'. 22 (18)' Seam - R7
116.5	153	Mostly mudstone some siltstone
153	182	Coal 29' Seam - R 5
182	218	Mudstone
218	251	Siltstone
251	279	Mudstone
279	317	Siltstone
317	334	Mudstone
334	377	Interbedded sandstone and siltstone
377	399	Siltstone, some silty sandstone
399	407	Sandstone
407	421	Siltstone
421	431	Sandstone
431	432	Coal 1' (Seam 4 zone?)
432	542	Sandstone (Basal), coal stringers at 502' (seam 2/1 zone?)
		End of Hole May 31, 1977

Core Size

Hole No. RH 633

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.O.N.

Diamond Drill Geological Log

Cominco

K-Foldins 72(3)K

320

Objective:		Sampled:			40 Scale
Logged By: R. K.	Date: September 7/77	Composites:			Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place: TURNBULL	App. Bear:	App.: Dip.:	Length: 669'

From	To	Discard: / Reason:	Intersections taken from Gamma Ray - Neutron Log.
0	12.5	Overburden (DRILLER REPORTED 18' O.B.)	
12.5	17.5	COAL 5'	
17.5	57	Mudstone with several siltstone interbeds	
57	107	Mostly siltstone with sandstone and mudstone bands	
107	120	COAL with 1.5' Shale band at 115.5' 13 (11.5)' SEAM - 7	
120	122.5	2.5' Mudstone	
122.5	124	COAL 1.5'	
124	138	Mudstone	
138	142	Shely Coal 4'	
142	199	Siltstone with occasional mudstone bands	
199	206	Mudstone	
206	216	Silrstone and sandstone	
216	222	Mudstone	
222	240	Silty sandstone and siltstone	
240	276	Mudstone	
276	295	Siltstone	
295	306.5	Mudstone	
306.5	310.5	COAL 4' SEAM - R7U	
310.5	357	Siltstone with several bands of mudstone and sandstone	
357	370	Mudstone	
370	387	Silty sandstone	
387	413	Siltstone and some mudstone near bottom	
413	435.5	COAL 22.5 SEAM - R7L	

Hole No. _____ Elev. _____
Lat. _____ Dep. _____
Elev. Th.
Top of _____ @ _____ | '
Top of _____ @ _____ | '
Top of _____ @ _____ | '
Top of _____ @ _____ | '

Core Size

Hole No. RH 634

Diamond Drill Geological Log .

Cominco

K. Fording 77 (3)

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:		Sampled:			
Logged By:	Date:	Composites:			
Block.	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
435.5	437.5	Mudstone
437.5	439.5	Shaly Coal 2'
439.5	484	Mudstone with siltstone interbeds
424	488	COAL 4'
488	505	Mudstone and siltstone
505	584.5	COAL with 1.5', 1' and 1' Shale bands at 566', 577' and 579' respectively. 79.5(76)' SEAM - R5
584.5	587	2.5' Shale
587	590	COAL 3'
590	615	Mudstone, highly carbonaceous bands
615	623	Siltstone
623	669	Silty sandstone and siltstone

END OF HOLE AT 669'

July 28/77

Core Size

Hole No. RH 634

2507-

Diamond Drill Geological Log

Cominco

K. Fording 77(3)A

320

Objective:		Sampled:			
Logged By: R. K.; H. Heck Date: JULY 27/77		Composites:			
Block:	Sect.:	Place: TURNBULL	App. Bear:	App.: Dip.:	Length: 550'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	5	Overburden
5	12	COAL 7' Lower Part SEAM - 9
12	20	Mudstone
20	55	Sandstone fine to medium grained, medium grey with siltstone interbeds
55	95	Siltstone light grey
95	114	Sandstone fine grained light grey
114	118	Siltstone
118	134	Sandstone coarse grained, dark grey
134	149	Siltstone
149	164	Sandstone, fine grained, light grey
164	192	Siltstone with mudstone interbeds
192	215	Sandstone medium grained, dark grey, 206 - 209' Siltstone
215	250	Mudstone
250	254	Sandstone
254	289	Mostly siltstone some mudstone, dark grey
289	300	Mudstone
300	315	Siltstone and fine grained sandstone, dark grey, carbonaceous
315	320	Mudstone, dark grey carbonaceous
320	324	COAL 4'
324	330	Mudstone
330	356	COAL, Clarain and fusain, 26' SEAM - 7
356	386	Mudstone carbonaceous, dark grey with interbeds of siltstone
386	411	COAL 25' SEAM - 5

Hole No. _____ Elev. _____
Lat. _____ Dep. _____

	Elev.	Th.
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'

Core Size ROTARY CHIP SAMPLES

Hole No. RH 635

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507-

Diamond Drill Geological Log

Cominco

K. Fording 72(3)A

320

40 Scale

Objective:		Sampled:				Color Plot & Dips	Ore Classes & Aver.
Logged By:	Date:	Composites:				0	
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:		

From	To	Discard: Reason:
411	424	Mudstone
424	434.5	COAL 10.5'
434.5	453	Mudstone
453	473	Siltstone, some silty sandstone
473	502	Siltstone, medium grey, with ~~some~~ mudstone bands
502	532	Mudstone
532	540	Siltstone with sandstone band near bottom
540	550	Mudstone
		END OF HOLE AT 550' MAY 25/77

Core Size

Hole No. RH 635

2507—

Diamond Drill Geological Log

Cominco

K. Fordink 77(3)A

320

Objective:

Sampled:

Logged By: R. K., S. J. S. Date: September 7/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			585'

Discard: Reason:

Intersections taken from Gamma Ray - Neutron Log.

From	To	
0	13	Overburden
13	30	Mudstone, medium grey, weathered, Fe stains
30	101	Siltstone, medium grey
101	110.5	Mudstone and siltstone, dark grey
110.5	112.5	COAL 2'
112.5	117	4.5' Mudstone
117	119	Shaly Coal 2'
119	121	2' Coaly Shale SEAM - 9
121	132	COAL 11'
132	136	Mudstone
136	137	Shaly Coal 1'
137	140.5	Mudstone
140.5	141.5	Shaly Coal 1'
141.5	156	Mudstone, black highly carbonaceous
156	169	Siltstone, medium grey, apparently massive
169	181	Mudstone
181	230	Siltstone with interbeds of mudstone
230	240	Siltstone
240	253	Sandstone, medium to coarse grained, dark grey
253	271	Siltstone, dark grey, massive
271	282	Mudstone
282	322	Siltstone dark grey
322	331	Mudstone, black highly carbonaceous and disintegrated

Hole No. Elev.

Lat. Dep.

	Elev.	Th.
Top of @		'
Top of @		'
Top of @		'
Top of @		'

Core Size ROTARY CHIP SAMPLES

Hole No. RH 636

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D.N.

Diamond Drill Geological Log

K. Fording 77(3)

Objective:		Sampled:		40 Scale	
Logged By:	Date:	Composites:		Color Plot & Dips	Ore Classes & Aver.
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length: 320

From	To	Discard: Reason:
331	339	Sandstone, fine to medium grained and siltstone
339	366	Interbedded mudstone and siltstone medium to dark grey
366	376.5	Mudstone
376.5	378.5	COAL 2'
378.5	380	1.5' Shale
380	381.5	COAL 1. 5'
381.5	402	Siltstone, medium grey, massive
402	416	Silty mudstone, medium grey
416	418	COAL 2'
418	449	Siltstone, occasional fine grained sandstone band, dark grey
449	469	Mudstone
469	474	Sandstone
474	494	Mudstone with siltstone bands
494	506	Sandstone
506	514	Mudstone
514	530	Siltstone: sandstone 518' - 522
530	585	Mudstone with occasional bands of siltstone

Core Size

Hole No. RH 636

0

Diamond Drill Geological Log

Cominco

K. Fordyce 7/(3b

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: R.K. Date: September 19/77

Composites: DIRECTIONAL SURVEY DONE BY ROKE

320

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull Mountain			695'

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray - Neutron Log	
0	11	Mudstone, top 2 - 3' overburden	
11	15	COAL 4'	
15	17	2' Shale	SEAM - 11
17	25	COAL 8'	
25	67	Mudstone with several bands of siltstone	
67	144	Siltstone, with silty sandstone bands	
144	148	Mudstone	
148	150	COAL 2'	
150	152	2' Shale	SEAM - 9
152	167	COAL 15'	
167	186	Mudstone with two thin shaley Coal bands at 171' & 175'	
186	241	Interbedded siltstone and mudstone	
241	281	Siltstone	
281	295	Sandstone, some sandy siltstone near bottom.	
295	336	Mostly siltstone with thin interbeds of mudstone	
336	348	Mudstone	
348	352	Sandstone	
352	358	Siltstone	
358	364	Mudstone	
364	380	Sandstone	
380	452	Mudstone; siltstone and sandstone 424 - 431'	
452	468	Siltstone	
468	478	Mudstone	

Core Size

Hole No. RH 637

0

2507—N.O.N.

Diamond Drill Geological Log

Cominco

K. Fording 77/3/A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

320

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
478	482	Siltstone
482	488	Mudstone
488	494	Siltstone
494	499	Mudstone
499	512.5	COAL 13.5' SEAM - 7
512.5	578	Mudstone with occasional thin interbeds of siltstone
578	626	Siltstone; mudstone 607 - 615'
626	661	Mudstone
661	695	Mostly siltstone with bands of mudstone and sandstone.

END OF HOLE

JULY 10/77

Core Size

Hole No. RH 637

2507—N.D.N.

Diamond Drill Geological Log

K- FORDING 7763A

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: June 8, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			680

Discard: Reason: INTERSECTIONS TAKEN FROM GAMMA RAY - NEUTRON LOG

From	To	
0	10	Overburden
10	32	Mostly mudstone with some siltstone.
32	73	Siltstone with silty sandstone interbeds.
73	80.5	Coal 7.5' Seam -
80.5	85	Mudstone
85	89	Shaley Coal and Shale.
89	122	Mudstone
122	151	Siltstone
151	156	Coal 5' Seam -
156	161.5	Mudstone
161.5	163.5	Coal 2'
163.5	235	Mostly siltstone with several bands of mudstone and sandstone.
235	241	Coal 6' Seam -
241	288.5	Mudstone and siltstone interbeds
288.5	291.5	Coal 3')
291.5	297.5	Mudstone } Seam -
297.5	301	Coal 3.5')
301	348	Siltstone with silty sandstone, some mudstone near top.
348	376	Mudstone, coal stringers at 360'
376	385	Coal 9' Seam -
385	412	Mudstone
412	416.5	Coal 4.5'
416.5	503	Mostly mudstone with siltstone interbeds.

Core Size

Hole No. RH 638 Page 1 of 2

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.D.N.

Diamond Drill Geological Log

K. Fordink 77(3)

Objective:			Sampled:		
Logged By:	Date:		Composites:		
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard:	Reason:
503	612	Sandstone	
612	633	Coal 21' Seams - 9	
633	635	Shale	
635	636.5	Shaley Coal 1.5'	
635	646	Mudstone	
646	680	Interbedded mudstone and siltstone	
		End of Hole at 680'	
		May 31, 77.	

Core Size

Hole No. RH 638 Page 2 of 2

2507—N O.N.

Diamond Drill Geological Log

Cominco

K. Fordink 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: R. K. Date: September 19/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull Mountain			643'

Intersections taken from Gamma Ray - Neutron Log

From	To	Discard: Reason:
0	16	Overburden
16	18	COAL 2'
18	44	Mudstone
44	52	Siltstone
52	58	COAL 6' SEAM - 1
58	68	Basal sandstone; Major thrust fault elevation at 68'
68	72	Mudstone
72	79.5	COAL 7.5'
79.5	98	Mudstone
98	126	COAL 28' SEAM - R7
126	154	Mudstone; highly carbonaceous near top
154	184	COAL 30' SEAM - R5
184	194	Mudstone
194	239	Mostly siltstone with several mudstone bands.
239	255	Mudstone
255	303	Siltstone
303	504	Sandstone; silty sandstone 346 - 406'
504	562	Siltstone
562	586	Mudstone some siltstone
586	618	Sandstone
618	622	Mudstone
622	631	Sandstone
631	643	Mudstone, bottom 2' siltstone or sandstone

END OF HOLE

AUGUST 9/77

Core Size

Hole No. RH 639 Page 1 of 1

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: H. Heck Date: May 26, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			428'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	9	Overburden
9	16	Siltstone med. grey
16	66	Sandstone med. to coarse grained, light grey
66	86.5	Sandstone, coarse grained dark grey
86.5	90	Coal 3.5'
90	97.5	Mudstone and siltstone near bottom
97.5	101	Coal 3.5' Seam - 2
101	109	Sandstone med. to coarse grained med. grey, some mudstone near top
109	112	Coal 3' Part Seam - 1
112	119	Mudstone, major thrust fault elevation at 115'
119	133.5	Mostly siltsone dark grey carbonaceous, some silty sandstone near top
133.5	145.5	Coal 12' Seam - B7
145.5	170	Sandstone, med. grained, med grey, carbonaceous
170	177	Mudstone dark grey carbonaceous
177	196	Coal 19' Seam - B5
196	204	Mudstone
204	206	Coal 2'
206	231	Mudstone
231	264	Siltstone med. grey
264	339	Sandstone
339	349	Siltstone
349	366	Sandstone, siltstone bands near bottom
366	377.5	Mudstone

Core Size

Rotary chip samples

Hole No. RH 640

Diamond Drill Geological Log

K-Fording 77(3)A

Objective:

Sampled:

[redacted]

Logged By: H. Heck Date: May 26, 1977

Composites:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL			

From	To	Discard: Reason:
377.5	413	Coal with 0.5' and 2' shale bands at 384' and 407' respectively 35.5 (33)' Seam - R4
413	418	Shale and 2' shaly coal band at 415.5'
418	428	Sandstone
		End of hole at 428'
		May 17, 1977

Core Size

Rotary chip samples

Hole No. RH 640

Diamond Drill Geological Log

Cominco

K-FORDING 77(3A)

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled: DIRECTIONAL SURVEY DONE BY ROKE

Logged By: R. K. Date: September 19/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL MOUNTAIN			483'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	14	Overburden
14	25	Siltstone
25	69.5	Mudstone, siltstone band at 30'
69.5	74.5	COAL 5' SEAM - R7u
74.5	104	Mudstone, siltstone band at 92'
104	137	Siltstone
137	144	Mudstone
144	147	COAL 3'
147	152.5	5.5' Mudstone
152.5	168	COAL 15.5' SEAM - R7
168	221	Mudstone
221	268	COAL 47' SEAM - R5
268	274.5	Mudstone
274.5	276	COAL 1.5'
276	304	Mudstone
304	326	Siltstone
326	414	Sandstone, some silty sandstone near top and mudstone bands
414	435	Mudstone
435	439	COAL 4'
439	448	Mudstone
448	466	COAL with one foot shale band at 460' 18 (17)' SEAM R-4
466	476	Mudstone, 467.5 - 469.5 COALY Shale
476	483	Sandstone

END OF HOLE

May 18/77

Core Size

Hole No. RH 644

Page 1 of 1

2507—N.D.M.

Diamond Drill Geological Log

K-FOLDING 77(3)A

Objective:

Logged By: R. K. Date: September 19/77

Sampled:

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL MOUNTAIN			

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
		NO RADIATION LOG: INTERSECTIONS FROM DRILLER'S REPORT
0	102	Gravel / Overburden
102	111	Sandstone
111	146	Shale
146	148	COAL 2'
148	152	Shale
152	158	COAL 6'
158	172	Shale

Hole abandoned at 172' because of increased water pressure (from 15 gal/min to 60 gal/min) in 159 - 172 zone and continued stuffing in of loose gravel.

JUNE 21/77

Core Size

Hole No. RH 645

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K- FORDING 77 (3)A

Objective:		Sampled:		40 Scale	
Logged By: R. K.	Date: September 19/77	Composites:		Color Plot & Dips	Ore Classes & Aver.
Block:	Sect.:	Place: TURNBULL MOUNTAIN	App. Bear:	App.: Dip.:	Length: 437'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	7	Overburden
7	195	Basal sandstone, grading progressively to sandy siltstone towards bottom
195	199	Shaley siltstone, and mudstone
199	236	Sandstone, some sandy siltstone near bottom, mudstone band at 211'
236	270	Siltstone grading to silty sandstone towards bottom. Major Thrust Fault elevation at 237'
270	331	Sandstone
331	341	Mudstone
341	350	Sandy siltstone
350	368	Mudstone, COAL Stringers at 362 5'
368	382.5	Siltstone
382.5	415.5	COAL with 2' Shale band at 409' 33 (30)' SEAM - R4
415.5	417.5	2' Shale
417.5	419	Shaley COAL 1.5'
419	437	Sandstone, some siltstone near top
		END OF HOLE
		MAY 23/77

Core Size

Hole No. RH 646 Page 1 of

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:

Sampled:

320

Logged By: R. K. Date: September 19/77

Composites:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL MOUNTAIN			

Discard: Reason:

Intersections taken from Gamma Ray Log

From	To	
0	25	Overburden (DRILLER REPORTED 72' soft till and overburden)
25	33	Mudstone
33	73	Siltstone with some mudstone
73	78	COAL 5'
78	98	Mudstone with bands of siltstone
98	135	Siltstone (sandy siltstone near top)
135	143	Mudstone
143	159	Siltstone
159	165	Mudstone
165	191	COAL 26' SEAM - R7
191	202	Mudstone
202	262.5	Interbedded mudstone and siltstone, sandstone 210' - 214'
262.5	303.5	COAL 41' SEAM - R5
303.5	320	Mudstone
320	375	Siltstone
375	457	Sandstone
457	475.5	Mudstone
475.5	511	COAL with 1.5' Shale band at 504.5' 35.5 (34)' SEAM - R4
511	513	2' Shale
513	514.5	COAL 1.5'
514.5	519	Mudstone
519	550	Sandstone

END OF HOLE
AUGUST 23/77

Core Size

Hole No. RH 647 Page 1 of 1

0

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K. Fording 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: R. K. Date: September 19/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL MOUNTAIN			

Intersections taken from Gamma Ray and Gamma Ray - Neutron Log (0 - 362')

From	To	Discard: Reason:
0	9	Overburden
9	92	Mudstone with some siltstone
92	93	Shaley COAL
93	99	Mudstone
99	106.5	COAL 7.5' PART SEAM - R7
106.5	177.5	Mudstone with several thin bands of siltstone
177.5	214.5	COAL 37' SEAM - R5
214.5	223	Mudstone
223	260	COAL 37' SEAM - R5
260	267	Mudstone
267	269	COAL 2'
269	298	Mudstone
298	338	Siltstone, grading progressively to sandstone towards bottom
338	426	Sandstone
426	436	Mudstone
436	470	COAL with two 2' Shale bands at 441.5 & 463' respectively 34 (30)' SEAM - RA
470	472.5	2.5' Shale
472.5	474	COAL 1.5'
474	490	Siltstone grading to sandstone towards bottom.
		END OF HOLE
		SEPTEMBER 14/77

Core Size

Hole No. RH 648 Page 1 of 1

2507—N.D.M.

Diamond Drill Geological Log

Cominco

K. Fardink 77(3)a

Objective:

Logged By: R. K. Date: September 19/77

Sampled: DIRECTIONAL SURVEY DONE BY ROKE

Composites:

320

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL MOUNTAIN			751'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	10	Overburden
10	13	Mudstone
13	16	COAL 3'
16	35.5	Mudstone
35.5	48	COAL 12.5' SEAM- 12
48	71.5	Mudstone
71.5	90.5	COAL 19' SEAM - 11u
90.5	102.5	Mudstone
102.5	116	COALY Shale, shale and Shaley COAL SEAM - 11 Zone
116	147	Mudstone
147	234	Siltstone some silty sandstone
234	238	Sandstone
238	240	Mudstone
240	260	COAL 20' SEAM - 9
260	262	2' Shale
262	263.5	Shaley Coal
263.5	266	Mudstone
266	267.5	Shaley COAL
267.5	292	Mudstone, some siltstone
292	304	Silty sandstone
304	400	Mudstone with siltstone bands
400	409	Sandstone
409	441	Interbedded mudstone and siltstone.

Core Size

Hole No. RH 649

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K. Fordonc 7/13/A

320

Objective:		Sampled:				
Logged By:	Date:	Composites:				
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

From	To	Discard: Reason:
441	476	Siltstone
476	571	Mudstone
571	654	Mudstone with siltstone interbeds
654	705	Mudstone with several siltstone bands
705	714	COAL 9'
714	716	2' Shale
716	718	COAL 2'
718	720	2' Shale
720	722	COAL 2'
722	738	Mudstone
738	742	COALY Shale 4'
742	751	Siltstone, some sandstone near bottom
		END OF HOLE
		JULY 15/77

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

Hole No. RH 649 Page 2 of 2

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K. Fording 77(3)A

320

Objective:			Sampled:			
Logged By: R. K.	Date: September 20/77		Composites:			
Block:	Sect.:	Place: TURNBULL MOUNTAIN	App. Bear:	App.: Dip.:	Length:	

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	17	Overburden (DRILLER REPORTED 20' O.B.)
17	26	Mudstone
26	118	Siltstone
118	138	Sandstone
138	186	Mudstone with some siltstone Major thrust fault possible elevation at 140'.
186	214	Siltstone grading progressively to sandstone towards bottom
214	264	Sandstone
264	285	Mudstone
285	292	Siltstone
292	312	Silty sandstone and sandstone
312	320.5	Mudstone
320.5	356.5	COAL with one 2' Shale band at 250' 36 (34)' SEAM - R4
356.5	368	Mudstone
368	469	Sandstone
469	471.5	Mudstone
471.5	474.5	COAL 3' SEAM - R2
474.5	485.5	Mudstone with one siltstone interbed
485.5	494.5	COAL 9' SEAM - R1
494.5	504	Basal Sandstone
		END OF HOLE
		JUNE 23/77

Core Size

Hole No. RH 650 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K. Fording 77(3)A

Objective:

Sampled:

320

Logged By: R. K. Date: September 20/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		TURNBULL MOUNTAIN			

Intersections taken from Gamma Ray - Neutron Log

From	To	Discard: Reason:
0	39	Overburden
39	49	Mudstone, some siltstone near bottom
49	56	Mudstone
56	91	COAL 35' SEAM - R5
91	99	Mudstone
99	100.5	COAL 1.5'
100.5	133	Mostly siltstone with bands of mudstone and sandstone
133	135	Shaley COAL 2'
135	156	Mudstone
156	178	Silty Sandstone
178	196	Mudstone and siltstone
196	269	Sandstone
269	275	Mudstone
275	280	Sandstone
280	324.5	COAL with 2' Shale band at 297'. 44.5 (42.5)' SEAM - R4
324.5	330	5.5' Mudstone
330	339	COAL 9'
339	346.5	Mudstone
346.5	349.5	COAL 3'
349.5	354.5	Mudstone
354.5	355.5	COAL 1'
355.5	381	Mudstone and siltstone
381	437	Sandstone

END OF HOLE

AUGUST 11/77

Core Size

Hole No. RH 651

Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: January 26, 1978

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Turnbull			577'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	46	Sandstone, Basal
46	55	Silty sandstone
55	76	Mudstone with some siltstone
76	144	Siltstone grading progressively to sandstone towards bottom; 1.5' Coal band at 106.5'
144	192	Sandstone
192	200	Siltstone
200	221	Sandstone
221	239	Siltstone
239	247	Sandstone
247	263	Mudstone
263	293	Coal 30'
293	296.5	3.5' Mudstone Seam - R4
296.5	301.5	Coal 5'
301.5	318	Mudstone, some siltstone near bottom
318	448	Sandstone
448	451.5	Mudstone
451.5	454.5	Coal 3' Seam - R2
454.5	469	Mudstone grading to silty sandstone towards bottom
469	479	Coal 10' Seam - R 1
479	577	Basal, sandstone
		End of Hole
		September 26, 1977

Core Size

Hole No. RH 652

Page 1 of 1

0

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K. Fording 7(3)A

Objective: To determine location and thickness of Seam F.

Sampled:

Logged By: R. K. Date: November 4, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills North Area			245'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Neutron Log.
0	30.5	Mudstone
30.5	32.5	Coal 2'
32.5	61.5	Mudstone with thin bands of Siltstone
61.5	63.5	Coal 2'
63.5	88	Siltstone
88	122	Mudstone
122	142.5	Sandstone
142.5	144	Coal 1.5'
144	159.5	Mudstone some Siltstone
159.5	164	Coal 4.5'
164	182.5	Mudstone and Siltstone
182.5	186.5	Coal 4'
186.5	216	Siltstone some Sandstone
216	236.5	Coal 20.5' Seam - F
236.5	245	Mudstone
		End of Hole - August 12, 1977

Hole No. 1045 Elev. 5606.3
Lat. 491,557 Dep. 71,485

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size: B - 50 Hole - No Samples

Hole No. RH 1045

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D N

Diamond Drill Geological Log

Cominco

K-Forming 77(3)a

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective: To determine location and thickness of Seam - F.

Sampled:

Logged By: R. K. Date: Nov 4, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills North area.			251'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	7	Overburden
7	26	Sandstone
26	38	Siltstone
38	70	Sandstone
70	99	Mudstone with interbeds of siltstone
99	115	Siltstone
115	129.5	Interbedded mudstone and siltstone
129.5	130.5	Coal 1'
130.5	134	Mudstone
134	136.5	Coal 2.5'
136.5	139.5	Shale 3'
139.5	150.5	Coal 11'
150.5	156	Mudstone
156	180	Siltstone
180	186	Mudstone
186	207.5	Coal 21.5' Seam - F.
207.5	230	Mudstone, with thin bands of siltstone
230	232	Coal 2'
232	251	Interbedded mudstone and siltstone
		End of Hole August 21, 1977

Hole No. 1046 Elev. 5603.8
Lat. 491,830 Dep. 71,516

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1046

2507—N D N.

Diamond Drill Geological Log

Cominco

K. Fordinc 77(3)A

Objective: To determine location and thickness of Seam - F.

Sampled:

Composites:

320'

Logged By: R. K. Date: November 4, 1977

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills North Area			354'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Nutron Log
0	36	Overburden
36	42.5	Mudstone
42.5	44.5	Coal 2'
44.5	70	Mudstone with siltstone bands
70	73	Coal 3'
73	112	Siltstone, sandy siltstone 105 - 112'
112	134	Mudstone, with siltstone bands
134	159	Silty sandstone
159	164	Coal 5'
164	188	Mudstone
188	193	Coal 5'
193	198	Mudstone
198	200	Shaley Coal
200	207	Mudstone
207	238	Siltstone, shaley siltstone near top and silty sandstone near bottom.
238	249	Sandstone
249	274	Mudstone, sandy siltstone
274	295	Coal with one foot shale band at 280' 2" (20)' Seam - F
295	338	Mudstone, thin shaley coal bands at 309' and 314'
338	354	Siltstone
		End of Hole.
		September 8, 1977

Hole No. 1047 Elev. 5658.3
Lat. 49,781 Dep. 71,295

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1047

Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N D N

Diamond Drill Geological Log

Cominco

K- Fording 77/36

320

Objective:			Sampled:			
Logged By: R.K.	Date: September 20/77		Composites:			
Block:	Sect.:	Place: GREENHILLS UPPER SEAMS AREA	App. Bear:	App.: Dip.:	Length: 549'	

From	To	Discard: Reason: Intersections taken from Gamma Ray-Neutron Log
0	20	Overburden
20	50	Mudstone
50	106	Interbedded mudstone and siltstone
106	114	Silty sandstone
114	132	Mudstone and siltstone interbeds
132	139	Siltstone and sandstone
139	144.5	Mudstone
144,5	149	COAL 4.5'
149	210	Mostly siltstone with bands of mudstone and sandstone
210	223	Mudstone
223	246	Interbedded siltstone and mudstone with bands of sandstone
246	248	COAL 2'
248	269	Mudstone
269	293	Sandstone with occassional siltstone bands
293	302	Mudstone
302	314	Siltstone
314	342	Sandstone
342	369	Silty sandstone with siltstone bands
369	397	Mudstone with bands of siltstone, one foot COAL band at 374'
397	411	Siltstone
411	440	Sandstone, sandy siltstone 424 - 430'
440	443	Mudstone
443	445	COAL 2'

Core Size

Hole No. RH 1050

40 Scale

Color Plot & Dips	Ore Classes & Aver.
0	

2507—N D.N.

Diamond Drill Geological Log

Cominco

K. FORDING 77(3)A

Objective:

Sampled:

Logged By: Date:

Composites:

[redacted]

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block: | Sect.: | Place: | App. Bear: | App.: Dip.: | Length:

From	To	Discard: Reason:
445	449	Mudstone
449	510	Mostly sandstone with several siltstone interbeds
510	526.5	COAL 16.5' Upper seam above SEAM - I
526.5	533	Mudstone
533	536	Siltstone
536	549	Mudstone

END OF HOLE

JUNE 25/77

Core Size

Hole No. RH 1050

2507—N D N.

Diamond Drill Geological Log

Cominco

K-FOREING 77(3)A

Objective:

Sampled:

Logged By: R. K. Date:

Composites:

[redacted]

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		GREENHILLS UPPER SEAMS AREA			559'

Discard: Reason:

Intersections taken from Gamma Ray - Neutron Log

From	To	
0	5	Overburden
5	14	Siltstone
14	24	Mudstone
24	57	Siltstone with some silty sandstone and mudstone
57	59	Shaley Coal 2'
59	80	Mudstone
80	106	Sandstone with silty intervals
106	129	Mudstone
129	149	Siltstone
149	159	Silty sandstone
159	198	Mostly siltstone with thin interbeds of mudstone
198	208	Sandstone, siltstone with thin interbeds of mudstone
208	216	Mudstone
216	255	Mostly siltstone with mudstone interbeds and bands of sandstone
255	257	COAL 2'
257	261	Mudstone
261	339	Mostly sandstone with bands of siltstone.
339	354	COAL 15' UPEER SEAM Above SEAM - I
354	380	Mudstone, some siltstone
380	382	Shaley Coal 2'
382	389	Mudstone
389	391	COAL 2'
391	395	4' Mudstone

Core Size

Hole No. RH 1051

2507—N D.N.

Diamond Drill Geological Log

Cominco

K. Fording 77(31A

Objective:		Sampled:		40 Scale	
Logged By: Date:		Composites:		Color Plot & Dips	Ore Classes & Aver.
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
395	397	COAL 2'
397	406	Mudstone and siltstone
406	431	Sandstone
431	446	Mudstone, silty sandstone near bottom
446	450	COAL 4'
450	461	Mudstone
461	473	Siltstone
473	475	COAL 2'
475	526	Siltstone and silty sandstone, some mudstone near top, coarse grained sandstone 500 - 506'
526	533	COAL 7'
533	540	Mudstone
540	542	COAL 2'
542	544.5	2.5' Mudstone
544.5	546.5	COAL 2'
546.5	559	Sandstone, mudstone near top
		END OF HOLE
		JUNE 18/77

Core Size

Hole No. RH 1051 Page 2 of 2

2507—N D N.

Diamond Drill Geological Log

Cominco

K- FOLDING 77(3A

320

Objective:

Sampled:

Logged By: R.K. Date: September 20/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		GREENHILLS UPPER SEAMS AREA			550'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray - Neutron Log	
0	8	Overburden	
8	19.5	Mudstone	
19.5	22.5	COAL 3'	
22.5	27	Mudstone	
27	38	Sandy siltstone	
38	46.5	Mudstone	
46.5	64.5	COAL 18'	Upper seam above seam - I
64.5	84	Mudstone	
84	86	COAL 2'	
86	88	2' Shale	
88	92	COAL 4'	
92	110	Mudstone	
110	163	Interbedded siltstone and mudstone	
163	174.5	Mudstone	
174.5	179.5	COAL 5'	SEAM - I
179.5	183	3.5' Shale	
183	195	COAL 12'	
195	199	Mudstone	
199	308	Sandstone, some silty sandstone near top and several mudstone bands	
308	337.5	Interbedded siltstone and mudstone	
337.5	342.5	COAL 5'	SEAM - Hu
342.5	353.5	Mudstone	
353.5	355.5	COAL 2'	

Core Size

Hole No. RH 1052

2507—N D.N.

Diamond Drill Geological Log

K-FORDING 77(3)A

320

Objective:	Sampled:	40 Scale
Logged By: Date:	Composites:	Color Plot & Dips / Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
355.5	401.5	Mudstone, siltstone 363' - 385'
401.5	412.5	COAL 11' SEAM - H1
412.5	426	Mudstone, one foot coal band at 414'
426	449	Siltstone
449	477.5	Mudstone
477.5	481.5	COAL 4'
481.5	485	3.5' Mudstone
485	487.5	COAL 2.5'
487.5	531	Mudstone, some shaley siltstone
531	532	COAL 1'
532	550	Silty sandstone
		END OF HOLE
		JUNE 28/77

Core Size

Hole No. RH 1052 Page 2 of 2

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K - FORDING 77(3)A

320

Objective:

Sampled:

Logged By: R.K. Date: September 21/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		GREENHILLS UPPER SEAMS AREA			587'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray - Neutron Log	
0	5	Overburden	
5	56	Mudstone, siltstone 34 - 40'	
56	58	COAL 2'	
58	78	Mudstone, some siltstone near bottom	
78	82	COAL 4'	
82	85.5	3.5' Mudstone	11.5' (8)'
85.5	89.5	COAL 4'	
89.5	107	Siltstone and sandstone	
107	114	Mudstone	
114	120	Sandstone with mudstone band	
120	145	Mudstone, some siltstone near top	
145	184	Siltstone with bands of sandstone	
184	193.5	COAL 9.5'	
193.5	236	Mudstone, one 2' Coal band at 223'	
236	269	Interbedded siltstone and mudstone	
269	275	Sandstone	
275	277.5	Mudstone	
277.5	279	Shaley Coal 1.5'	
279	284.5	Mudstone	
284.5	287.5	COAL 3'	
287.5	291.5	4' Shale	SEAM - I
291.5	306	COAL 14.5'	
306	313	Mudstone	

Core Size

Hole No. RH 1053

2507—N O N.

Diamond Drill Geological Log

Cominco

K-FOREING 72(3)A

Objective:			Sampled:		40 Scale
Logged By:	Date:		Composites:		Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
313	321	Shaley or very poor COAL 8'
321	333	Mudstone
333	406	Interbedded siltstone and mudstone
406	412	COAL 6'
412	432	Siltstone with sandstone bands, some mudstone near bottom
432	433	Shaley coal
433	434	Shale
434	437	COAL 3'
437	441	4' Mudstone SEAM - H
441	453.5	COAL 12.5'
453.5	484	Siltstone with mudstone bands
484	514	Sandstone with several thin interbeds of mudstone
514	553	Mudstone with siltstone bands, one foot coal band at 524
553	562	COAL 9' SEAM - Gu
562	578	Mudstone
578	580	COAL 2'
580	587	Sandstone, some siltstone near top

Core Size

Hole No. RH 1053 Page 2 of 2

2507—N. & N.

Diamond Drill Geological Log

K. Froeng 77(3)

320

Objective:

Sampled:

Logged By: R. K. Date: September 21/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		GREENHILLS UPPER SEAMS AREA			559'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	6	Overburden
6	12	Mudstone
12	57	Mostly siltstone with mudstone interbeds
57	70.5	Mudstone
70.5	88.5	Coal with 2' shale band at 74' 18 (16)' SEAM - I
88.5	106	Mudstone
106	128	Siltstone
128	152	Mudstone'
152	158	COAL 6'
158	164	Mudstone
164	226	Mostly siltstone with several mudstone interbeds
226	232.5	COAL 6.5'
232.5	237	4.5' Mudstone SEAM - H
237	251	COAL 14'
251	305	Mudstone, 1.5' Coal band at 260'
305	340	Siltstone, sandstone near top
340	355	COAL with 2' & 1.5' Shale bands at 342' & 346.5' respectively SEAM - Gu 15(11.5)'
355	370	Mudstone, some siltstone near bottom
370	371.5	Shaley Coal 1.5'
371.5	375.5	Shale
375.5	377	Shaley Coal 1.5'
377	398	Siltstone and silty sandstone, some mudstone near top
398	403.5	Mudstone

Core Size

Hole No. RH 1054

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

SEAM Gu

2507—N D N.

Diamond Drill Geological Log

Cominco

K- FORDING 77(3)A

320

Objective:			Sampled:			
Logged By: R. K.	Date: September 21/77		Composites:			
Block:	Sect.:	Place: GREENHILLS UPPER SEAMS AREA	App. Bear:	App.: Dip.:	Length:	

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
403.5	411.5	COAL 8' SEAM - G1
411.5	428	Mudstone
428	455.5	Sandy siltstone and sandstone, some mudstone near bottom
455.5	458.5	COAL 3' SEAM - FM3
458.5	501	Mostly siltstone, with sandstone intervals and mudstone bands
501	517	Sandstone
517	527	Siltstone
527	559	Mudstone
		END OF HOLE
		JUNE 13/77

Core Size

Hole No. RH 1054 Page 2 of 2

2507—N D.N.

Diamond Drill Geological Log

K- FORDING 77(3)a

320

Objective:			Sampled:		
Logged By: R. K.	Date: September 21/77		Composites:		
Block:	Sect.:	Place: GREENHILLS UPPER SEAM AREAS	App. Bear:	App.: Dip.:	Length: 550'

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray - Neutron Log	
0	14	Overburden	
14	26	Mudstone, siltstone band near top	
26	36	Sandstone	
36	61.5	Mudstone with siltstone interbeds	
61.5	65.5	COAL 4'	
65.5	84	Mudstone with one interbed of siltstone	
84	86	COAL 2'	
86	115	Mudstone, siltstone 93 - 106'	
115	126	COAL 11' SEAM H	
126	164	Mudstone, siltstone 139 - 145'	
164	170	Siltstone	
170	185	Sandstone and sandy siltstone	
185	243	Mostly siltstone with several silty sandstone intervals	
243	249	Mudstone	
249	251	COAL 2'	
251	253	2' Shale	
253	259	COAL 6' SEAM - Gu ?	
259	264	Mudstone	
264	328.5	Siltstone with silty sandstone intervals and mudstone bands	
328.5	330.5	Shaley Coal 2'	
330.5	333	2.5' Shale	
333	335	COAL 2'	
335	338	3' Shale	

Core Size

Hole No. RH 1055 Page 1 of 2

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D N.

Diamond Drill Geological Log

Cominco

K - FORDING 77(3)A

Objective:		Sampled:				
Logged By:	Date:	Composites:				
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

From	To	Discard:	Reason:
338	344	COAL 6' SEAM Gu	
344	350	Sandstone	
350	359.5	Mudstone	
359.5	361	1.5' Shaley Coal	
361	362.5	1.5' Shale	
362.5	364	COAL 1.5'	
364	374	Siltstone, mudstone near bottom	
374	382	Coal, lower three feet coaly shale and shaley coal 8 (7)' SEAM - G1	
382	391	Mudstone	
391	425	Siltstone	
425	430	COAL 5' SEAM - FM 3	
430	441	Siltstone and mudstone	
441	452	Siltstone, sandstone near top	
452	482.5	Mudstone with some siltstone	
482.5	486.5	COAL 4' SEAM - FM 2	
486.5	496	Mudstone	
496	502	Sandstone	
502	550	Siltstone with several bands of sandstone and mudstone	
		END OF HOLE	
		JUNE 15/77	

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

Hole No. RH 1055

2507—N.O.N.

Diamond Drill Geological Log

K- FORDING 77(3)A

Objective:

Sampled:

320

Logged By: R. K. Date: September 21/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		GREENHILLS UPPER SEAMS AREA			530'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	72	Overburden (Driller reported 0 - 76' Till and boulders)
72	76	COAL 4'
76	78	Shaley Coal 2'
78	89	Siltstone
89	100	Sandstone
100	103.5	COAL 3.5'
103.5	116	Mudstone
116	161	Sandstone and siltstone interbeds with several bands of mudstone
161	163	COAL 2'
163	165	2' Shale SEAM - Gu
165	170	COAL 5'
170	181	Silty sandstone
181	187	Mudstone
187	204.5	Siltstone and some sandstone
204.5	212	COAL 7.5'
212	217	5' Shale SEAM - G1
217	226	COAL 9'
226	238	Mudstone
238	255	Siltstone, sandstone near top
255	268	Mudstone
268	273	COAL 5' SEAM FM-3
273	286	Siltstone
286	303	Sandstone, siltstone near bottom

Core Size

Hole No. RH 1056

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

320

Objective:		Sampled:				40 Scale
Logged By:	Date:	Composites:				Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

From	To	Discard: Reason:
303	325	Shaley siltstone
325	335	Mudstone
335	339.5	COAL 4.5'
339.5	346	Siltstone
346	350	Mudstone
350	391	Sandy siltstone
391	444	Mostly sandstone with siltstone interbeds
444	458	Mudstone
458	485	COAL with 1' & 2' Shale bands at 475' & 477' 27 (24)' SEAM - F
485	492	Mudstone
492	515	Interbedded mudstone and sandstone
515	530	Mostly mudstone some siltstone
		END OF HOLE
		JUNE 10/77

Core Size

Hole No. RH 1056 Page 2 of 2

0

2507—N D.H.

Diamond Drill Geological Log

K - Fording 77(3)A

320

Objective:		Sampled:			
Logged By: R. K. Date: September 21/77		Composites:			
Block:	Sect.:	Place: GREENHILLS UPPER SEAMS AREA	App. Bear:	App.: Dip.:	Length: 500'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Neutron Log
0	9	Overburden
9	99	Siltstone, sandy intervals
99	124.5	Mudstone
124.5	128	COAL 3.5'
128	145	Mudstone, siltstone bands
145	147	COAL 2'
147	186	Mostly mudstone with siltstone interbeds
186	190	Siltstone
190	198	Sandstone
198	206	Siltstone
206	223	Sandstone
223	229	Mudstone
229	251	Siltstone, sandstone band at bottom
251	258	Mudstone
258	269.5	COAL 11.5' SEAM - H1
269.5	280	Mudstone
280	322	Sandstone, siltstone 286 - 293'
322	350	Mostly mudstone, some siltstone
350	364	Sandstone, siltstone, 353 - 357'
364	378	Siltstone, mudstone bands
378	380	COAL 2'
380	400	Siltstone
400	405.5	COAL SEAM - Gu 5.5'

Core Size

Hole No. RH 1057 Page 1 of 2

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D.N.

Diamond Drill Geological Log

Cominco

K- Fording 77(3)A

320

Objective:		Sampled:				
Logged By:	Date:	Composites:				
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
405.5	434.5	Interbedded mudstone and siltstone, 2' Coal band at 423'
434.5	440	Coal 5.5' SEAM - G1
440	454	Mudstone
454	470	Mostly siltstone with mudstone bands
470	491	Siltstone, some sandstone near top and mudstone near bottom
491	495	COAL 4' SEAM - FM 3
495	500	Sandstone
		END OF HOLE
		JUNE 16/77

Core Size

Hole No. RH 1057 Page 2 of 2

2507—N D.N.

Diamond Drill Geological Log

Cominco

K. Fording 77(3)a

320

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: R. K. Date: September 27, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills Upper Seams Area			526'

Discard: Reason:

Intersections taken from Gamma Ray - Neutron Log

From	To	
0	86	Interbedded sandstone and siltstone
86	89.5	Mudstone
89.5	100.5	Coal 11' Seam - H1
100.5	161	Interbedded mudstone and siltstone, coal stringers at 148' and 155'
161	185	Siltstone with silty sandstone interbeds
185	216	Sandstone
216	218	Mudstone
218	224	Coal 6' Seam - Gu
224	248	Siltstone
248	258.5	Mudstone
258.5	267	Coal 8.5' Seam - G1
267	275	Mudstone
275	313	Siltstone
313	318.5	Coal 5.5' Seam - Fm3
318.5	327	Mudstone
327	379	Siltstone
379	395.5	Mudstone some siltstone
395.5	402.5	Coal 7' seam - Fm2
402.5	449	Siltstone with thin sandstone bands
449	468	silty sandstone
468	480	Siltstone
480	485	Mudstone
485	509	Coal 24' Seam - F

Hole No. 1058 Elev. 6041.3

Lat. 489.117 Dep. 70.448

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1058

2507—N O N.

Diamond Drill Geological Log

Cominco

K. Fogerty 77(3)A

320

Objective:			Sampled:		
Logged By:	Date:		Composites:		
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
509	526	Mudstone
		End of Hole
		July 7, 1977

Core Size

Hole No. RH 1058

2507—N D N

Diamond Drill Geological Log

Cominco

K- Fording 77(3)A

320

Objective:		Sampled:			
Logged By: R. K. Date: November 4, 1977		Composites:			
Block	Sect.:	Place: Greenhills	App. Bear:	App.: Dip.:	Length: 456'

From	To	Discard: Reason: Intersections taken from Gamma Ray - Neutron Log.
0	10	Overburden
10	26	Mudstone
26	38	Sandstone and sandy siltstone
38	54	Mudstone
54	60	Sandstone
60	72	Siltstone
72	86	Mudstone, 1.5' coaly shale band at 78.5'
86	114	Silty sandstone
114	129.5	Mudstone and siltstone
129.5	135	Coal 5.5' Seam - Gu
135	176	Mostly siltstone with bands of mudstone and sandstone
176	178	Coal 2'
178	181.5	3.5' Mudstone
181.5	190	Coal 8.5' Seam - Gl
190	228	Mudstone with interbeds of siltstone
228	233	Coal 5' Seam - Fm3
233	244	Siltstone and mudstone
244	266	Sandstone
266	292.5	Siltstone, mudstone near bottom
292.5	299.5	Coal 6.5' Seam Fm2
299.5	320	Siltstone
320	328	Sandstone
328	395	Siltstone with silty sandstone intervals; mudstone 335 - 338'

Hole No. 1059 Elev. 6003'
Lat. 488,512 Dep. 70,741
Elev. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size

Hole No. RH 1059

40 Scale
Color Plot & Dips | Ore Classes & Aver

0

2507—N D N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:			Sampled:		
Logged By:	Date:		Composites:		
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
395	400	Mudstone
400	424.5	Coal with 1.5' shale band at 417' 24.5 (23)' Seam - F.
424.5	435	Mudstone
435	436.5	Shaley Coal 1.5'
436.5	440	Mudstone
440	442	Coal 2'
442	456	Mudstone siltstone near bottom

End of Hole
June 11, 1977

Core Size

Hole No. RH 1059

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N D N

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:

Sampled:

Logged By: R. K. Date: November 4, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			550'

Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	Discard:
0	6	Overburden
6	41	Siltstone
41	45.5	Mudstone
45.5	52.5	Coal 7'
52.5	54	Shale - Seam - I
54	56	Coal 2'
56	68	Mudstone
68	84	Siltstone with sandstone interbeds
84	102	Sandstone
102	126	Interbedded siltstone and sandstone, some mudstone near top.
126	170	Sandstone
170	180	Siltstone and mudstone
180	190.5	Coal 10.5' Seam - H
190.5	202	Mudstone
202	205	Coal 3'
205	232	Mudstone with coal stringers at 211' and 227'
232	234	Coal 2'
234	247	Sandstone
247	268	Mudstone, siltstone near bottom
268	272	Coal 4'
272	280	Mudstone
280	287	Siltstone and silty sandstone
287	302	Mudstone

Hole No. 1060 Elev. 5926'

Lat. 490,473 Dep. 70,421

Elev. Th.

Top of @ '

Top of @ '

Top of @ '

Top of @ '

Core Size

Hole No. RH 1060

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N O N

Diamond Drill Geological Log

Cominco

K. Fording 77(3)9

Objective:		Sampled:				
Logged By: Date:		Composites:				
Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

From	To	Discard: Reason:
302	312	Siltstone mudstone near bottom
312	315	Coal 3'
315	317	Shale and Shaley Coal
317	334	Mudstone
334	368	Siltstone with interbeds of mudstone
368	398	Mudstone
398	410	Siltstone, sandstone near bottom
410	414	Mudstone
414	418	Coal 4'
418	424	Mudstone
424	441	Sandstone
441	462	Mudstone, coal stringers at 447'
462	497	Siltstone, some mudstone near bottom
497	514	Coal 17' Seam - F
514	524	Mudstone
524	526	Coal 2'
526	550	Siltstone, mudstone near bottom

End of Hole
June 26, 1977

Core Size

Hole No. RH 1060

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N D N

Diamond Drill Geological Log

Cominco

K- FORDING 77(3)A

Objective:

Sampled:

Logged By: R.K. Date: November 4, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			575'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	5.5	Overburden
5.5	13.5	Coal 8'
13.5	38	Mudstone
38	58	Siltstone
58	75	Sandstone, siltstone 64- 70'
75	84.5	Siltstone
84.5	92	Coal 7.5' Seam - I
92	95	3' Shale
95	96.5	Coal 1.5'
96.5	106	Mudstone
106	118	Siltstone
118	213	Mostly Sandstone with several siltstone interbeds
213	219.5	Siltstone, some mudstone near bottom
219.5	228.5	Coal 9' Seam - H
228.5	242	Mudstone, siltstone bands
242	252	Coal with two feet shale band at 246' 10 (8)'
252	266	Mudstone and siltstone
266	269	Coal 3'
269	288	Mudstone with one sandstone band
288	306	Sandstone
306	309.5	Mudstone
309.5	314	Coal 4.5'
314	351	Siltstone with mudstone interbeds

Hole No. 1061 Elev. 5896.7
Lat. 490,902 Dep. 10,158
Elev. Th.
Top of @ '
Top of @ '
Top of @ '
Top of @ '

Core Size

Hole No. RH 1061 Page 1 of 2

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N D N

Diamond Drill Geological Log

Cominco

K-Fording 77(3)

Objective:		Sampled:		40 Scale	
Logged By: Date:		Composites:		Color Plot & Dips	Ore Classes & Aver
Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
351	362	Mudstone
362	408.5	Mostly siltstone with bands of mudstone, sandstone 379 - 384'
408.5	414.5	Coal 6'
414.5	438	Mudstone
438	442	Coal 4'
442	464	Mudstone with siltstone bands, one foot coal band at 456'
464	523	Siltstone with occasional sandstone interbeds
523	529	Mudstone
529	551	Coal with two feet shale band at 544' 22 (20)' Seam - F
551	561	Mudstone
561	562	Coal 1'
562	564	2' Shale
564	566	Coal 2'
566	570	Mudstone
570	575	Sandstone
		End of Hole June 26, 1977

Core Size

Hole No. RH 1061 Page 2 of 2

0

2507—N O N

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:

Sampled:

Logged By: R.K. Date:

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			566'

Discard: Reason:

Intersections taken from Gamma Ray - Neutrom Log (0 - 485') and Gamma Ray Log (485 - 566')

From	To	
0	8	Overburden
8	16	Highly carbonaceous mudstone
16	19	Coal 3'
19	32	Mudstone
32	41	Siltstone
41	51	Sandstone
51	74.5	Siltstone with one silty sandstone interbed
74.5	81.5	Coal 7'
81.5	94	Mudstone, 1' Shaley Coal band at 85.5'
94	106	Siltstone
106	115	Mudstone
115	126	Sandy Siltstone
126	209	Sandstone
209	229.5	Mudstone
229.5	238.5	Coal with 2' shale band at 233' 9 (7)'
238.5	255.5	Mudstone
255.5	262.5	Coal with 2' sahle band at 258' 7(5)'
262.5	281.5	Siltstone and mudstone
281.5	283.5	Coal 2'
283.5	300	Mudstone
300	303	Coal 3'
303	344	Siltstone, mudstone towards bottom
344	347	Coal 3'

Hole No. 1062 Elev. 5832.3
Lat. 491,305 Dep. 70,196
Elev. Th.
Top of @ '
Top of @ '
Top of @ '
Top of @ '

Core Size

Hole No. RH 1062

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N D N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:

Sampled:

[redacted]

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

From	To	Discard: Reason:
347	366	Mudstone, sandstone band at 351'
366	412	Siltstone with sandstone bands, some mudstone near bottom
412	417	Coal 5'
417	442	Mudstone
442	446	Coal 4'
446	468	Siltstone with bands of mudstone
468	533	Sandstone
533	539	Mudstone
539	563	Coal 24' Seam - F
563	566	Mudstone
		End of Hole
		June 1977

Core Size

Hole No. RH 1062

2507—N D N

Diamond Drill Geological Log

Cominco

K - Fording 77(3)A

320

Objective:			Sampled:			40 Scale
Logged By: R. K.	Date: November 17, 1977		Composites:			Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place: Greenhills	App. Bear:	App.: Dip.:	Length: 450'	

From	To	Discard: Intersections taken from Gamma Ray Log / Reason:
0	28	Overburden
28	34	Mudstone
34	98	Sandstone
98	114	Siltstone, mudstone near bottom
114	117	Coal 3'
117	122	5' Mudstone
122	137	Coal 15'
137	140.5	3.5' Mudstone
140.5	144	Coal 3.5'
144	150	Mudstone
150	173.5	Siltstone
173.5	181	Coal 7.5'
181	186	Mudstone
186	198	Silty sandstone
198	231.5	Siltstone
231.5	249.5	Coal 18' Seam - H.
249.5	264	Siltstone, some mudstone
264	308	Sandstone
308	313.5	Mudstone
313.5	314.5	1' Coal
314.5	340.5	Siltstone, bands to mudstone and sandstone
340.5	346.5	Coal 6' Seam - Gu
346.5	350.5	Mudstone

Seam - I

Hole No. 1063 Elev. 5935.4
Lat. 485,441 Dep. 69,950
Elev. Th.
Top of @ '
Top of @ '
Top of @ '
Top of @ '

Core Size

Hole No. RH 1063

2507—N O N

Diamond Drill Geological Log

Cominco

K- Fording 77(3)A

Objective:

Logged By: Date:

Sampled:

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver

From	To	Discard: Reason:
350.5	370	Sandstone
370	393.5	Siltstone, mudstone near bottom
393.5	400	Coal 6.5' Seam - Gl
400	405	Mudstone
405	418	Siltstone
418	440	Sandstone
440	450	Siltstone and sandstone
		End of Hole
		July 5, 1977

Core Size

Hole No. RH 1063

2507—N D N.

Diamond Drill Geological Log

Cominco

K-FERDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
					572'

Discard: Reason:

Intersections taken from Gamma Ray - Neutron Log

Hole No. 1064 Elev. 6143.6

Lat. 485,032 Dep. 70,449

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

From	To	
0	12	Overburden
12	31	Siltstone
31	46	Mudstone
46	56	Coal with 1' shale band at 50' 10 (9)'
56	64	Mudstone with siltstone interbed
64	71	Sandstone
71	77	Mudstone
77	78	1' Coal
78	80.5	Mudstone
80.5	81.5	1' Coal
81.5	102	Mostly mudstone with siltstone interbeds
102	111.5	Coal 9.5'
111.5	127	Mudstone
127	134	Siltstone
134	136	Coal 2'
136	153	Mudstone, siltstone mar top
153	239	Sandstone
239	267	Siltstone with thin interbeds of mudstone
267	281	Coal 14' Seam - I
281	299	Mudstone with coal stringers at 287' and 291'
299	307.5	Siltstone and sandstone
307.5	310	Coal 2.5'
310	314	4' Mudstone

Core Size

Hole No. RH 1064

2507—N O N.

Diamond Drill Geological Log

Cominco

K-Gordenka 77(3)A

Objective:		Sampled:			
Logged By:	Date:	Composites:			
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
314	318	Coal 4'
318	325	Mudstone
325	331	Sandstone
331	361	Siltstone
361	406	Sandstone
406	412	Mudstone
412	432	Coal with one foot shale band at 407.5' 20 (19) Seam - H
432	464	Mudstone with thin shaley coal bands at 434', 442' and 454'
464	493	Siltstone , some mudstone near bottom
493	504	Coal 11' Seam - Gu
504	538.5	Siltstone
538.5	540	Coal 1.5'
540	541.5	1.5' shale
541.5	543.5	Coal 2'
543.5	548.5	Mudstone
548.5	556	Coal 7.5' Seam - G1
556	567	Mudstone
567	572	Sandstone
		End of hole
		June 5, 1977

Core Size

Hole No. RH 1064 Page 2 of 2

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N O N.

Diamond Drill Geological Log

Cominco

K - Fording 77(3)

320

Objective:			Sampled:		
Logged By: R. K.	Date: November 7, 1977		Composites:		
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length: 551'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	8	Overburden (Driller reported 0 - 8' coal)
8	40	Siltstone, Some silty sandstone
40	45	Mudstone
45	54	Coal 9'
54	68	Sandstone, mudstone near top
68	77	Mudstone and sandstone interbeds
77	79	Coal 2'
79	81.5	2.5' Mudstone
81.5	83.5	Coal 2'
83.5	88	Mudstone
88	94	Mudstone and siltston
94	118.5	Sandstone, some mudstone near bottom
118.5	130	Coal 11.5'
130	139	Mudstone
139	142	Coal 3'
142	145.5	3.5' Mudstone
145.5	147	1.5' Coal
147	155	Mudstone
155	162	Siltstone
162	163.5	Coal 1.5'
163.5	187	Mudstone
187	220	Sandstone, mudstone 208' - 212'
220	224	Mudstone

Hole No. 1065 Elev. 6111.9
Lat. 484,561 Dep. 70,888

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1065

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N O N

Diamond Drill Geological Log

Cominco

K-fording 77(3)

Objective:

Sampled:

[redacted]

Logged By: Date:

Composites:

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
224	242	Mostly sandy siltstone with mudstone interbeds
242	249.5	Mudstone
249.5	263.5	Coal 14' Seam - I
263.5	280.5	Mudstone with sandstone bands
280.5	283.5	Coaly Shale
283.5	290.5	Siltstone
290.5	293	Coal 2.5'
293	338	Siltstone with mudstone bands
338	341	Coal 3'
341	353	Mudstone
353	402	Siltstone
402	425.5	Coal 23.5' Seam - H
425.5	428.5	3' Shale
428.5	430.5	Coal 2'
430.5	439	Mudstone
439	442.5	Coal 3.5'
442.5	445	Mudstone
445	446	1' Shaley Coal
446	460	Mudstone
460	469	Siltstone
469	508	Sandstone
508	516	Mudstone
516	525	Coal 9' Seam - G

Core Size

Hole No. RH 1065

2507—N D N

Diamond Drill Geological Log

Cominco

K-Fordine 7163A

Objective:

Sampled:

[redacted]

Logged By: Date:

Composites:

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
525	533	Sandstone
533	539	Siltstone
539	551	Sandstone
		End of Hole
		June 3, 1977

Core Size

Hole No. RH 1065 Page 3 of 3

2507-N D N

Diamond Drill Geological Log

Cominco

K-FOREING 77(3)A

320

Objective:			Sampled:		
Logged By: R.K.	Date: November 7, 1977		Composites:		
Block:	Sect.:	Place: Greenhills	App. Bear:	App.: Dip.:	Length: 555'

From	To	Discard: Reason: Intersections taken from Gamma Ray - Neutron (0-496') and Gamma Ray (496-555') Log
0	4	Overburden (casing 0 - 15')
4	13	Overburden or coaly shale and shaley coal (Driller: 4 - 12' Coal & Shale)
13	37	Mudstone
37	53	Siltstone, sandstone near top
53	58	Mudstone
58	69	Coal 11'
69	72.5	3.5' Mudstone
72.5	75.5	Coal 3'
75.5	114	Mudstone with sandstone bands, two one foot coal bands at 80.5' and 101'
114	179	Sandstone with occasional mudstone bands, mudstone 176-179'
179	194	Coal 15' Seam I
194	212	Mudstone, Coaly shale 206 - 209'
212	217.5	Siltstone, mudstone near bottom
217.5	219	Coal 1.5'
219	255.5	Sandstone grading to siltstone towards bottom
255.5	257	Mudstone
257	263	Mudstone
263	350	Sandstone, some sandy siltstone
350	357	Mudstone
357	373	Coal 16' Seam -H
373	386	Mudstone
386	392	Coal 6'
392	415	Sandstone and siltstone

Hole No. 1066 Elev 6034.2
Lat. 483,919 Dep. 71,332
Eev. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size

Hole No. RH 1066

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N D N

Diamond Drill Geological Log

Cominco

K-Folding 77(3)A

Objective:

Sampled:

520

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
415	426	Mudstone
426	440	Silty Sandstone
440	454	Mudstone Coal stringer at 452'
454	469.5	Siltstone
469.5	477.5	Coal 8' Seam - Gu
477.5	500	Siltstone
500	512	Coal 12' Seam Gl
512	555	Siltstone with interbeds of sandstone, some mudstone near top.

End of Hole

May 30, 1977

Core Size

Hole No. RH 1066

2507—N D N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:		Sampled:		40 Scale	
Logged By: R. K.	Date: November 7, 1977	Composites:		Color Plot & Dips	Ore Classes & Aver.
Block:	Sect.:	Place: Greenhills	App. Bear:	App.: Dip.:	Length: 550'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	3	Overburden
3	20	Siltstone and sandstone
20	28	Mudstone and some siltstone
28	43	Siltstone
43	47	Coal 4'
47	64.5	Mudstone
64.5	75.5	Coal with two feet shale band at 68.5' 11 (9)'
75.5	92	Siltstone and sandstone, some mudstone near top
92	93	Coal 1'
93	108	Mudstone, siltstone near bottom
108	109	Coal 1'
109	156	Sandstone
156	167.5	Mudstone, siltstone
167.5	178	Coal 10.5' Seam - I
178	194	Mudstone, sandstone band near bottom
194	196	Coal 2'
196	243	Mostly siltstone with bands of mudstone
243	250	Sandstone
250	270	Silty Sandstone
270	280	Highly Carbonaceous sandstone
280	333	Interbedded sandstone and siltstone with bands of mudstone
333	349.5	Coal 16.5 Seam - H
349.5	370	Siltstone

Hole No. 1067 Elev. 6022.5
Lat. ~~483,444~~ Dep. 71,659
L. V. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size

Hole No. RH 1067 Page 1 of 2

0

2507—N O N

Diamond Drill Geological Log

Cominco

K-Foroing 77(3)A

Objective:

Sampled:

[redacted]

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
370	380	Mudstone
380	384	Coal 4'
384	400	Sandstone near top and siltstone
400	407	Mudstone
407	421	Silty sandstone
421	452	Interbedded mudstone and siltstone, 2' shaley coal band at 438'
452	486	Siltstone, bottom 2' mudstone
486	489	Coal 3' Seam - G
489	497	Mudstone and Siltstone
497	504.5	Coal 7.5' Seam - G
504.5	509.5	Coaly Shale and coal
509.5	515	Mudstone
515	550	Interbedded mudstone and siltstone
		End of Hole June 1, 1977

Core Size

Hole No. RH 1067

2567—N D N.

Diamond Drill Geological Log

Cominco

K-FOREING 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: November 7, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			537'

Discard: Reason:

Intersections taken from Gamma Ray - Neutron Log

From	To	
0	11	Overburden
11	16	Mudstone
16	20	Coal 4'
20	34	Mudstone
34	59	Siltstone
59	64	Mudstone
64	74	Coal with one foot shale band at 68' 10 (9)'
74	96.5	Interbedded mudstone and siltstone
96.5	99	Coal 2.5'
99	116	Siltstone
116	162	Silty Sandstone and sandstone, bottom 3' mudstone
162	175	Coal 13' Seam - I
175	189	Mudstone
189	193	Sandstone
193	226	Mostly siltstone with mudstone interbeds coal stringers at 196'
226	299	Interbedded siltstone and sandstone
299	323.5	Siltstone
323.5	340.5	Coal 17' Seam - H
340.5	356.5	Mudstone
356.5	360.5	Coal 4'
360.5	374	Mudstone
374	390	Siltstone and mudstone
390	402	Sandstone

Hole No. 1068 Elev. 6011.2
Lat. 482, 264 Dep. 71,975

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1068

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D H

Diamond Drill Geological Log

Cominco

K-FOREING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard:	Reason:
402	417	Siltstone with sandstone bands	
417	471.5	Sandstone with sandy siltstone intervals	
471.5	475.5	Coal 4' Seam -G	
475.5	481	5.5' Mudstone	
481	488	Coal 7' Seam - G	
488	504	Mudstone with some siltstone	
504	537	Siltstone with several mudstone bands	

End of Hole
June 10, 1977

Core Size

Hole No. RH 1068

2507—N D N.

Diamond Drill Geological Log

Cominco

K-FOREING 77(3)A

320

Objective:		Sampled:			
Logged By: R.K.	Date: JULY 7, 1977	Composites:			
Block:	Sect.:	Place: GREENHILLS	App. Bear:	App.: Dip.:	Length: 450'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log.

From	To	
0	5	Overburden
5	14	Sandstone
14	41	Sandy siltstone and sandstone near bottom
41	45.5	Siltstone and mudstone
45.5	56.5	Coal 11' SEAM - I
56.5	71	Mudstone
71	86	Mudstone with siltstone interbeds
86	105	Mudstone
105	118	Siltstone
118	201	Sandstone, several siltstone interbeds near top
201	206	Mudstone
206	223	Coal 17' SEAM - H
223	243.5	Mudstone
243.5	247	Coal 3.5'
247	254	Mudstone
254	264	Sandstone
264	272	Mudstone
272	285	Sandstone
285	290	Mudstone
290	293	Coal 3'
293	311	Siltstone
311	356	Sandstone
356	360	Mudstone

Core Size

Hole No. RH 1069

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—

Diamond Drill Geological Log

Cominco

K-FOREMAN 77(3)A

Objective:

Sampled:

320

Logged By: Date:

Composites:

Block: Sect.: Place: App. Bear: App.: Dip.: Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard:	Reason:
360	364	Coal 4'	
364	367	3' Mudstone	15 (12)' SEAM - G
367	375	Coal 8'	
375	378	Mudstone	
378	398	Sandstone	
398	404	Mudstone	
404	450	Interbedded mudstone and siltstone	

End of hole at 450'

June 8, 1977

Core Size

Hole No. RH 1069

2507-

Diamond Drill Geological Log

Cominco

K-FOOTING 77(3)K

Objective:		Sampled:			40 Scale
Logged By: R.K.	Date: June 14, 1977	Composites:			Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place: GREENHILLS	App. Bear:	App.: Dip.:	Length: 238'

From	To	Discard: Reason: Intersections taken from Gamma Ray - Neutron Log.
0	4	Overburden
4	16	Sandstone
16	23	Siltstone
23	32	Sandstone
32	36	Siltstone
36	53	Coal 17' SEAM - H
53	57	Mudstone
57	71	Sandstone, silty sandstone near top
71	83	Mudstone
83	87	Coal 4'
87	98	Siltstone, some mudstone near top
98	121	Sandstone, occasional siltstone interbeds
121	133	Siltstone, sandstone near bottom
133	134	Coal
134	138	Mudstone
138	141.5	Coal 3.5'
141.5	168	Siltstone, with thin bands of sandstone
168	178	Mudstone
178	186	Sandstone
186	189.5	Mudstone
189.5	204	Coal with 2' shale band at 193'. $14^{5}(12^{5'})$ SEAM - G
204	238	Mostly siltstone with mudstone interbeds
		End of Hole

Core Size: B-50 DRILL - NO SAMPLES

Hole No. RH 1070 Page 1 of 1

0

2507-

Diamond Drill Geological Log

Cominco

K - FORDING 77(3)A

320

Objective:		Sampled:			40 Scale
Logged By: R.K. Date: June 14, 19 77		Composites:			Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place: Greenhills	App. Bear:	App.: Dip.:	Length: 268'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	4	Overburden
4	16	Siltstone, some silty sandstone
16	43	Sandstone
43	60	Sandy Siltstone
60	75	Coal 15' Seam H
75	92	Mudstone
92	95.5	Coal 3.5'
95.5	140.5	Mostly Sandstone with Mudstone bands and siltstone interbeds
140.5	143.5	Coal 3'
143.5	166	Mudstone with several Siltstone bands
166	186	Sandstone, Silty intervals
186	212	Siltstone
212	229	Sandstone
229	241	Coal with 2' shale band of 231.5' 12(10)' Seam G
241	268	Mostly mudstone, occasional siltstone interbeds coal stringers at 239'
		End Of Hole

Core Size: B-50 Drill - No samples

Hole No. RH 1071 Page 1 of 1

0

2507-

Diamond Drill Geological Log

K-FORDING 77(3)A

320

Objective:		Sampled:			
Logged By: RK	Date: May 13'77	Composites:			
Block:	Sect.:	Place: GREENHILLS	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason: INTERSECTIONS TAKEN FROM GAMMA RAY LOG.
0	18	Overburden?
18	25.5	Mudstone
25.5	29.5	Coal 4'
29.5	56	Mudstone, thin shaley band at 38'/
56	68	Sandstone and siltstone near bottom
68	76	Mudstone
76	82	Coal 6' SEAM - GU
82	91.5	9.5' Mudstone
91.5	104.5	Coal, 1.5' coaly shale band at 100.5', lower 3' poor coal. 13(11)' SEAM -G1
104.5	121	Mudstone
121	155	Interbedded sandstone and siltstone
155	158	Mudstone
158	162	Coal 4' SEAM - FM3
162	185	Mostly Siltstone some sandstone
185	195	Mudstone
195	220	Siltstone with several sandstone interbeds
220	226	Mudstone
226	251	Siltstone and sandstone interbeds

Core Size
B-50 Drill

Hole No. RH 1072

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Diamond Drill Geological Log

Cominco

K-TORDINK 77(3)A

Objective:

Sampled:

Logged By: R. K. Date: November 7, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			215'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason: Intersections taken from Gamma Ray Log
0	21.5	Mudstone
21.5	26	Coal 4.5'
26	33	Mudstone
33	40	Siltstone
40	63.5	Mudstone
63.5	67	Coal 3.5'
67	97	Mudstone, one foot coal band at 75'
97	109	Siltstone
109	182	Sandstone with sandy siltstone bands
182	188	Mudstone
188	209	Coal with 2' shale band at 201.5' 21 (19)' Seam F
209	215	Mudstone
		End Of Hole
		June 21, 1977

Hole No. 1073 Elev. 5882.9

Lat. 487,267 Dep. 71,546

E.W. Th.

Top of @ '

Top of @ '

Top of @ '

Top of @ '

Core Size

B 50 Drill - No Samples

Hole No. RH 1073 Page 1 of 1

2507—N D M.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: R.K. Date: November 7, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			226'

From	To	Discard: Intersections taken from Gamma Ray Log — Reason:
0	8	Mudstone
8	15	Sandstone
15	22	Siltstone
22	35	Mudstone
35	39.5	Coal 4.5' Seam - Fm3
39.5	48	Mudstone
48	62	Sandstone and Siltstone
62	81	Mudstone with some siltstone and bands of sandstone
81	87.5	Coal with one foot shale band at 85' 6.5 (5.5') Seam - Fm2
87.5	102	Mudstone with some siltstone bands
102	145.5	Siltstone with sandstone bands
145.5	148	Coal 2.5'
148	158	Sandstone
158	194	Sandy Siltstone
194	201.5	Mudstone
201.5	224.5	Coal with 2' shale band at 217' 23 (21)' Seam - F
224.5	226	Mudstone

Hole No. 1074 Elev. 5890'

Lat. 487,737 Dep. 71,418

Enr. Th.

Top of _____ @ _____ '

Top of _____ @ _____ '

Top of _____ @ _____ '

Top of _____ @ _____ '

End of hole
June 17, 1977

Core Size
B 50 Drill - No Samples

Hole No. RH 1074 Page 1 of 1

2567—N D N

Diamond Drill Geological Log

Cominco

K - Frolnk 77(3)a

Objective:

Sampled:

Logged By: R. K. Date: November 7, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			528'

Discard: Reason:

Intersections taken from Gamma Ray - Neutron Log

From	To	
0	4	Overburden
4	7	Overburden or Coaly Shale
7	18	Siltstone
18	53	Sandstone with siltstone bands
53	75	Siltstone
75	81.5	Mudstone
81.5	108.5	Coal with three feet shale band from 98 - 101' 27 (24)' Seam - H
108.5	137	Mudstone with siltstone interbeds
137	165	Sandstone, sandy siltstone near bottom
165	185	Siltstone with thin mudstone interbeds
185	201	Sandstone
201	230	Interbedded siltstone and mudstone
230	233	Coal 3'
233	257	Sandstone
257	275	Mudstone
275	281	Sandstone
281	303	Siltstone and mudstone interbeds
303	313	Sandstone
313	323	Mudstone
323	327	Siltstone
327	341	Mudstone
341	357	Siltstone
357	369	Mudstone

Hole No. 1075 Elev. 5745'

Lat. 481,893 Dep. 73,149

Elev. Th.

Top of @ '

Top of @ '

Top of @ '

Top of @ '

Core Size

Hole No. RH 1075 Page 1 of 2

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D H.

Diamond Drill Geological Log

Cominco

K. Fordins 77 (3)A

Objective:		Sampled:	[redacted]
Logged By: R. K.	Date:	Composites:	

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard:	Reason:
369	394	Sandstone	
394	408	Mudstone	
408	442	Siltstone with bands of sandstone	
442	460	Silty sandstone	
460	480	Siltstone	
480	485.5	Mudstone	
485.5	493.5	Coal 8' Seam - F	
493.5	497	3.5' Shale	
497	500	Coal 3' Seam - F	
500	502	2' Shale	
502	504.5	Coal 2' Seam - F	
504.5	528	Mudstone and siltstone	
		End of Hole	
		June 19, 1977	

40 Scale

Color Plot & Dips	Ore Classes & Aver.
0	

Core Size

Hole No. RH 1075

2567—N D N

Diamond Drill Geological Log

Cominco

K-Fordenk 77(3)A

Objective:

Sampled:

320

Logged By: R. K. Date: November 7, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			602'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	74	Overburden (Driller reported clay and shale to 96')
74	81	Siltstone
81	84	Mudstone
84	88	Coal 4'
88	105	Siltstone
105	123	Silty Sandstone
123	143	Sandstone
143	166	Siltstone, coal stringers at 155' and 158'
166	261	Sandstone
261	281	Siltstone
281	286.5	Mudstone
286.5	299.5	Coal 13'
299.5	306	Mudstone
306	312	Siltstone
312	320	Sandstone
320	330	Siltstone and mudstone
330	340	Silty Sandstone
340	352	Siltstone
352	430	Sandstone with sandy siltstone intervals
430	434	Mudstone
434	443	Coal 9' Seam - F
443	448	5' Mudstone
448	470	Coal 22' Seam - F

Hole No. 1076 Elev. 5663.0
Lat. 480,996 Dep. 73,764
Lev. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size

Hole No. RH 1076 Page 1 of 2

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R. K. Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
470	474	Mudstone
474	478	Coaly Shale
478	488	Siltstone
488	519	Sandstone
519	524	Mudstone
524	531	Coal 7'
531	565	Mostly siltstone with bands of sandstone and mudstone
565	572	Coal 7'
572	592	Mudstone with one siltstone interbed
592	598	Coal 6'
598	602	Mudstone
		End Of Hole
		June 29. 1977

Core Size

Hole No. RH 1076

Diamond Drill Geological Log

Cominco

K. Fardy 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: November 7, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills - Burnt Ridge Area			260'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	44	Overburden (Driller reported 48' Overburden)
44	61	Mudstone some siltstone
61	80	Siltstone
80	99	Sandstone
99	116	Coal 17'
116	131	Mudstone
131	170	Siltstone with mudstone interbeds
170	210	Mostly siltstone with sandstone interbeds
210	216.5	Coal 6.5'
216.5	228.5	Mudstone
228.5	260	Siltstone, some sandstone near top

Hole No. 1077 Elev. 5470.9

Lat. 479,449 Dep. 74,831

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

End of Hole

July 5, 1977

Core Size

Hole No. RH 1077

Page 1 Of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N O N

Diamond Drill Geological Log

Cominco

K - Fordeik 77(3)A

Objective:		Sampled:			
Logged By: R.K.	Date: November 7, 1977	Composites:			
Block:	Sect.:	Place: Greenhills Burnt Ridge Area	App. Bear:	App.: Dip.:	Length: 314'

From	To	Discard: Intersections taken from Gamma Ray Log — Reason:	
0	70	Overburden	
70	82	Siltstone	
82	91	Mudstone	
91	106	Coal 15'	
106	136	Siltstone	
136	157	Silty Sandstone	
157	180	Siltstone	
180	190	Mudstone	
190	234	Siltstone and silty sandstone	
234	294	Sandstone	
294	314	Mudstone and siltstone	

Hole No. 1078 Elev. 5527.0
Lat. 479.760 Dep. 74,585
Ext. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

End of Hole
June 30, 1977

Core Size

Hole No. RH 1078 Page 1 of 1

40 Scale

Color Plot & Dips	Ore Classes & Aver.
0	

2507—N D N

Diamond Drill Geological Log

Cominco

K. Fredink 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: R.K. Date: November 5, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills North Area			70'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Neutron Log
0	33	Mostly siltstone some mudstone
33	42.5	Mudstone
42.5	62.5	Coal 20' Seam - F
62.5	70	Mudstone
		End of Hole
		August 5, 1977

Hole No. 1079 Elev. 5458.8

Lat. 491,801 Dep. 71,766

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

B 50 Hole - No Samples

Hole No. RH 1079 Page 1 of 1

2567—N D N.

Diamond Drill Geological Log

Cominco

K- Fording 77(3)A

Objective:		Sampled:			40 Scale
Logged By: R.K.	Date: November 7, 1977	Composites:			Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place: Greenhills	App. Bear:	App.: Dip.:	Length: 264'

From	To	Discard: Intersections taken from Gamma Ray Log	Reason:
0	8	Overburden	
8	17	Mudstone	
17	48	Siltstone, some mudstone	
48	55	Sandstone	
55	83	Mostly siltstone with several mudstone interbeds	
83	93.5	Mudstone	
93.5	97	Coal 3.5'	
97	122	Mudstone	
122	127	Silty sandstone	
127	136	Siltstone	
136	155	Mudstone	
155	164	Silty Sandstone	
164	173	Mudstone	
173	177	Sandstone	
177	219	Siltstone	
219	232	Mudstone	
232	237	Coal 5' Seam - F	
237	239	2' Shale	
239	246	Coal 7' Seam - F 18(14)'	
246	248	2' Shale	
248	250	Coal 2' Seam - F	
250	264	Mudstone	
		End of hole July 5, 1977	

Hole No. 1080 Elev. 5811.8
Lat. 182,037 Dep. 73,650
Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size
B 50 Drill - No Samples

Hole No. RH 1080 Page 1 of 1

0

2507—N D N.

Diamond Drill Geological Log

Cominco

K. Fording 71(3)A

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: November 7, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			224'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	14	Overburden
14	30	Siltstone
30	49	Mudstone
49	86	Siltstone
86	99	Sandstone
99	115	Siltstone
115	161	Mostly sandstone several siltstone interbeds
161	169	Mudstone
169	183	Coal 14' Seam - F
183	188	5' Shale
188	208	Coal with 1' shale band at 200.5 20(19) ' Seam - F
208	216	Mudstone
216	224	Siltstone
		End of Hole
		July 12, 1977

Hole No. 1081 Elev. 5624.9
Lat. 480,272 Dep. 74,381

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1081 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N D 14

Diamond Drill Geological Log

Cominco

K-forden 7713A

Objective:

Sampled:

Logged By: RK Date: Nov. 7/77

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		GREENHILLS			243'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log.
0	32	Siltstone, some overburden near top.
32	46	Sandstone
46	56	Siltstone
56	76	Mudstone
76	80	Coal 4'
80	82.5	Mudstone
82.5	83.5	Shaley Coal
83.5	130	Mudstone, siltstone 100-116'
130	153	Interbedded Mudstone and sandstone
153	156	Mudstone
156	165	Siltstone
165	198	Siltstone with sandstone bands
198	210	Siltstone, mudstone near bottom
210	217	Coal 7'
217	221	4' Shale
221	233	Coal with two foot shale band at 228' 12(10)'
233	243	Mudstone
		End of hole

Seam F

Hole No. 1082 Elev. 5826.3

Lat. 481,818 Dep. 73,822

Elev. Th.

Top of: 0 '

'

'

Top of: '

Jul. 20/77

Core Size

B50 Drill - No samples

Hole No. RM 1082 Page 1 of 1

2507—N D N

Diamond Drill Geological Log

Cominco

K- FORDING 77(3)A

[redacted]

Objective:		Sampled:			
Logged By: R. K.	Date: November 7, 1977	Composites:			
Block:	Sect.:	Place: Greenhills	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Intersections taken from Gamma Ray Log — Reason:
0	8	Overburden
8	34	Sandstone
34	39	Mudstone
39	41	Sandstone
41	60	Mudstone, some siltstone
60	63	Coal 3'
63	65	Mudstone
65	69	Shaley Coal and Shale
69	101	Interbedded siltstone and sandstone
101	107	Mudstone
107	122	Interbedded siltstone and sandstone
122	134	Mudstone, siltstone near bottom
134	214	Mostly sandstone some siltstone
214	223.5	Mudstone
223.5	232	Coal 8.5'
232	236.5	4.5' Mudstone } 26.5 (22) Seam - F.
236.5	250	Coal 13.5'
250	280	Mudstone, some siltstone near bottom
		End of Hole
		July 26, 1977

Hole No. 1083 Elev. 5775.9
Lat. 481,318 Dep. 74,097
Elev. Th.
Top of @ '
Top of @ '
Top of @ '
Top of @ '

Core Size
B 50 Drill - No Samples

Hole No. RH 1083 Page 1 of 1

40 Scale

Color Plot & Dips	Ore Classes & Aver
0	

2507—N D N

Diamond Drill Geological Log

Cominco

K - FORDING 77(3)A

Objective:

Sampled:

Logged By: R. K. Date: November 7, 1977

Composites:

[redacted]

40 Scale

Color Plot & Dips | Ore Classes & Aver

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills			

From	To	Discard: for 0 - 255' Intersections taken from Gamma Ray - Neutron Log. Reason:
0	12	Overburden
12	21	Mudstone
21	25	Coal 4'
25	40	Mudstone and Siltstone
40	45	Coal 5'
45	48	3' Shale
48	50	Coal 2' Seam - G1
50	54	4' Shale
54	61.5	Coal 7.5'
61.5	68	Mudstone
68	81	Siltstone
81	95	Mudstone
95	117	Sandstone, siltstone 101 - 107'
117	134	Siltstone grading to sandstone towards bottom
134	216	Sandstone with several sandy siltstone interbeds.
216	221	Siltstone
221	225	Mudstone
225	234	Coal 9'
234	239	5' Shale Seam - F
239	259	Coal (Bottom of seam estimated) 20'
259	270	Mudstone
		End of Hole
		August 5, 1977

Hole No. 1084. Elev. 5682.7
Lat. 480,705 Dep. 74,289
Elev. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size
B 50 Drill - No Samples

Hole No. RH 1084 Page 1 of 1

0

2507-NON

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

Logged By: R.K. Date: November 17, 1977

Composites:

[redacted]

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Lake Mt.			551'

Intersections taken from Gamma Ray - Neutron Log

From	To	Discard: Reason:
0	12	Overburden
12	47	Mostly Sendstone with interbeds of siltstone
47	68	Siltstone
68	75	Mudstone
75	92	Coal 17'
92	110	Mudstone
110	124	Mudstone and Siltstone
124	126	Coal 2'
126	150	Interbedded mudstone and siltstone
150	164.5	Mudstone
164.5	174.5	Coal 10'
174.5	260	Siltstone, top 5' mudstone
260	266	Mudstone
266	268	Coal 2'
268	270	Mudstone 2'
270	280	Coal 10'
280	287	Mudstone and Coaly shale
287	300	Sandstone
300	326	Mudstone
326	352	Siltstone
352	358	Mudstone
358	389	Coal 31' Seam - E

Hole No. 1086 Elev. 5734.2

Lat. 495.764 Dep. 72.017

	Elev.	Th.
Top of	@	'
Top of	@	'
Top of	@	'
Top of	@	'

Core Size

Hole No. RH1086 Page 10F2

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2567—K O.N.

Diamond Drill Geological Log

Cominco

K-Footing n(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
389	408	Mudstone
408	430	Interbedded mudstone and siltstone
430	434	Siltstone
434	462	Sandstone and sandy siltstone
462	496	Mudstone
496	526	Coal 30' Seam = D
526	532	Mudstone
532	551	Siltstone
		End of hole
		Aug/13/77

Core Size

Hole No. RH 1086 Page 20F2

Diamond Drill Geological Log

Consumers

K. FERDING 77(3)A

Objective: | Sampled: [redacted]

Logged By: R.K. | Date: November 28, 1977 | Composites:

Block | Sect.: | Place: Lake Mt. | App. Bear: | App.: Dip.: | Length: 504'

Discard: | Reason:

Intersections taken from Gamma Ray - Neutron Log.

From	To	
0	53	Overburden
53	60	Siltstone, 53-56' probably coaly shale
60	86	Mudstone, coal stringers at 81'.
86	88	Sandstone
88	126	Mudstone
126	128	Sandstone
128	150	Mudstone
150	158	Sandstone, siltstone
158	164	Coal 6'
164	184	Mudstone
184	190	Siltstone
190	211	Mudstone
211	213	Coal 2'
213	249	Siltstone some Sandstone near top
249	266	Mudstone
266	278	Siltstone some mudstone
278	280	Coal 2'
280	284	Siltstone
284	298	Mudstone
298	307	Coal 9'
307	330.5	Mudstone
330.5	342.5	Coal with 1.5' mudstone band at 332.5' 12(10.5)'

Hole No. 1088 Elev. 5826.4

Lat. 436,101 Dep. 72,262

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH1088 Page 18F2

40 Scale

Color Plot & Dips | Ore Grades & Assay

0

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective: | Sampled: [redacted]

Logged By: | Date: | Composites:

Hole | Sect.: | Place: | App. Bear: | App.: Dip.: | Length:

From	To	Discard: / Reason:
342.5	375	Mudstone, 1.5' Shaley Coal band at 364'
375	394	Siltstone
394	412.5	Mudstone
412.5	414.5	Coal 2'
414.5	434	Siltstone some mudstone
434	458	Sandstone, siltstone 446-452'
458	476	Siltstone
476	504	Sandstone
		End of hole
		Aug/15/77

Core Size

Hole No. RH1088

Diamond Drill Geological Log

Cominco

K- FORGOING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: R. K. Date: November 28, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Lake Mountain			550'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	11	Overburden
11	26	Siltstone
26	48	Sandstone
48	54	Mudstone
54	56	Coal 2'
56	102	Mudstone
102	158	Siltstone
158	165	Mudstone
165	183.5	Coal with 2' shale band at 175' 18.5(16.5) Seam - I
183.5	192	Mudstone
192	197	Sandstone
197	209	Sandy Siltstone, some mudstone
209	235	Sandstone, mudstone band at 225'
235	258	Siltstone
258	286	Sandstone
286	310	Sandy Siltstone and sandstone
310	330	Siltstone
330	336	Mudstone
336	352.5	Siltstone, mudstone near bottom
352.5	367.5	Coal 15' Seam - H.
367.5	376.5	Mudstone
376.5	381.5	Coaly Shale
381.5	456.5	Interbedded mudstone and siltstone, thin Coal band at 406'

Hole No. 1089 Elev. 5453.0

Lat. 497,331 Dep. 72,321

Elev. Th.

Top of ____ @ ____ '

Top of ____ @ ____ '

Top of ____ @ ____ '

Top of ____ @ ____ '

Core Size

Hole No. RH 1089

2507—N D H

Diamond Drill Geological Log

Cominco

K- Fording 77(3)A

Objective: | Sampled:

Logged By: | Date: | Composites:

[redacted]

Block | Sect.: | Place: | App. Bear: | App.: Dip.: | Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:	
456.5	470	Coal 13.5' Seam - Gu	
470	499	Mudstone, bands of siltstone, coal stringers at 472'	
499	509	Coal 10' Seam - G1	
509	550	Sandston e	
		End of Hole	
		August 14, 1977	

Core Size

Hole No. RH 1089

Objective:

Sampled:

Logged By: R.K. Date: November 28, 1977 Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Lake Mountain			500'

K-Gridding 77(3)A

320

From	To	Discard: Intersections taken from Gamma Ray - Neutron Log Reason:
0	19	Overburden
19	51	Mudstone
51	96	Mudstone some siltstone near bottom
96	102	Sandstone
102	107	Mudstone
107	116	Siltstone
116	121	Sandstone
121	129	Coal 8'
129	152	Mudstone with bands of siltstone
152	163	Coal 11'
163	166.5	Mudstone
166.5	168	Coal 1.5'
168	189	Mudstone and shaley siltstone
189	196	Coal 7'
196	199	Mudstone
199	259	Silty sandstone and siltstone
259	264	Mudstone
264	268.5	Coal 4.5'
268.5	276	7.5' Mudstone
276	279	Coal 3'
279	292	Mudstone
292	314	Siltstone, bottom 4' mudstone
314	325	Coal 11'

Hole No. 1090 Elev. 5513.7
Lat. 496,284 Dep. 72,590
Elev. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size

Hole No. RH 1090 Page 1 of 2

2507—N.D.M.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:		Sampled:			
Logged By:	Date:	Composites:			
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
325	348	Mudstone
348	350	Coaly Shale
350	372	Sandstone, some mudstone siltstone near top.
372	384	Siltstone
384	394	Sandstone
394	404	Siltstone
404	412	Mudstone
412	423	Siltstone
423	500	Sandstone
		End of Hole
		August 18, 1977

Core Size

Hole No. RH 1090

Diamond Drill Geological Log

Cominco

K. Forbes 77 (3) A

320

Objective: | Sampled:

Logged By: R. K. | Date: November 28, 1977 | Composites:

Block: | Sect.: | Place: Lake Mountain | App. Bear: | App.: Dip.: | Length: 550'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Discard: | Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	20	Overburden (Driller reported 15' overburden)
20	39	Sandstone
39	66	Interbedded mudstone and siltstone
66	67.5	Coal 1.5'
67.5	76	Sandy Siltstone
76	99	Mudstone with bands of siltstone
99	113	Sandstone
113	154	Siltstone
154	160	Mudstone
160	173	Coal 13' Seam - H
173	186	Mudstone
186	215	Mostly siltstone with interbeds of mudstone
215	222	Coal 7'
222	269	Siltstone some mudstone near top and bottom
269	277	Coal 8' Seam - Gu
277	294.5	Mudstone, siltstone 280 - 283'
294.5	303.5	Coal 9' Seam - Gl
303.5	312	Mudstone
312	350	Siltstone
350	362	Coal 12'
362	372	Mudstone
372	387	Siltstone
387	422	Sandstone

Hole No. 1091 Elev. 5858'8

Lat. 496,473 Dep. 72,920

	Elev.	Th.
Top of	@	'
Top of	@	'
Top of	@	'
Top of	@	'

Core Size

Hole No. RH 1091

Objective:

Logged By: Date:

Sampled:

Composites:

320

Color Plot & Dips | Ore Classes & Aver.

R-O-[illegible] 77(3)

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
422	441	Mudstone
441	449	Siltstone and silty sandstone
449	550	Mostly mudstone with interbeds of siltstone and bands of sandstone

End of Hole

Augsut 17, 1977

Core Size

Hole No. RH 1091

Diamond Drill Geological Log

Cominco

320 320 FORDING 77 (3) A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Objective:

Sampled:

Logged By: R. K. Date: November 28, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Lake Mountain			577'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	16	Overburden
16	18	Mudstone
18	20	Coal 2'
20	46	Mudstone
46	50	Sandstone
50	82	Siltstone and silty sandstone
82	90	Sandstone
90	129.5	Sandy Siltstone
129.5	147	Coal 17.5' Seam - I
147	153	Mudstone
153	171	Silty Sandstone
171	193	Mudstone some siltstone
193	197	Sandstone
197	204	Siltstone
204	206.5	Mudstone
206.5	212.5	Coal 6'
212.5	220	Sandy Siltstone
220	232	Sandstone
232	254	Interbedded mudstone and siltstone
254	278	Mostly siltstone some sandstone, coal stringers at 257'
278	294	Sandstone
294	317	Silty sandstone
317	347	Siltstone

Hole No. 1092 Elev. 5373'
Lat. 457,382 Dep. 72,659
Elev. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size

Hole No. RH 1092

Logged By: Date: Composites:

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

K-FORDING 77(3)

320

From	To	Discard: Reason:
347	352	Mudstone
352	389.5	Interbedded siltstone and mudstone
389.5	407	Coal 17.5' Seam - H
407	414.5	7.5' Mudstone
414.5	418.5	Coal 4'
418.5	431	Mudstone, siltstone near bottom
431	432	Coal 1'
432	442	Mudstone
442	444	Coal 2'
444	448	Mudstone
448	451	Sandstone
451	467	Mudstone
467	538	Interbedded Mudstone and siltstone
538	544	Coal 6'
544	547	3' Mudstone Seam - G 22(16.5)
547	548	Coal 1'
548	550.5	2.5' Mudstone
550.5	560	Coal 9.5'
560	562	Mudstone
562	563	Coal 1'
563	577	Mudstone
		End of Hole August 19, 1977

Core Size

Hole No. RH 1092

2567—N D M.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

40 Scale

Objective:

Sampled:

Logged By: R.K. Date: November 28, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Lake Mountain			446'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log.

From	To	
0	10	Overburden
10	14	Coal 4'
14	41	Interbedded mudstone and siltstone
41	50	Siltstone
50	64	Mudstone
64	85	Mostly siltstone with mudstone interbeds
85	90	Sandstone
90	145	Mudstone, occasional siltstone bands
145	186	Coal 41' Seam - H (Faulted)
186	188	Mudstone
188	189	Shaley Coal 1'
189	213	Mudstone with bands of siltstone
213	221	Coal 8'
221	275	Sandy Siltstone, some mudstone near bottom
275	282	Coal 7' Seam - G
282	298	Mudstone, siltstone near top
298	306	Coal 8' Seam - G
306	352	Sandy Siltstone, some mudstone near top
352	358	Sandstone
358	370	Siltstone some mudstone near bottom
370	378	Coal with one foot shale band at 374' 8(7)'
378	381	Sandstone
381	414	Mudstone

Hole No. 1093 Elev. 5833

Lat. 497,206 Dep. 73,136

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1093

2507—N O N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)a

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled: [redacted]

Logged By: Date:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
414	446	Interbedded siltstone and sandstone
		End of Hole
		Sept 11, 1977

Core Size

Hole No. RH 1093

2507—N O N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: November 28, 1977

Composites:

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Lake Mountain			554'

Discard: Reason:

Intersections taken from Gamma Ray - Neutron Log (0-111') and Gamma Ray Log.

From	To	
0	10	Overburden
10	30	Mudstone
30	92	Silty sandstone grading progressively to siltstone and mudstone towards bottom
92	98	Mudstone Spray River Formation
98	127	Siltstone Spray River Formation
127	142	Mudstone Spray River Formation
142	158	Siltstone Spray River Formation
158	269	Shale Spray River Formation
269	297	Siltstone Spray River Formation
297	398	Shale Spray River Formation
398	402	Shaley Siltstone Spray River Formation
402	532	Shale Spray River Formation
532	552	Shaley Siltstone Spray River Formation

Hole No. 1094 Elev. 5653.3

Lat. 436,406 Dep. 73,426

Elev.

Top of @ '

Top of @ '

Top of @ '

Top of @ '

End of Hole

September 12, 1977

Core Size

Hole No. RH 1094 Page 1 of 1

2507—N O N.

Diamond Drill Geological Log

Cominco

K. Fordine 77(3)A

Objective:

Sampled:

Logged By: R. K. Date: November 7, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills - Burnt Ridge Area			586'

From	To	Discard: Intersections taken from Gamma Ray Log — Reason:
0	98	Overburden (bottom 6' could be siltstone, Driller reported 106' overburden)
98	103	Mudstone
103	117	Coal 14'
117	122.5	5.5' Mudstone
122.5	140.5	Coal with 2' shale band at 131' 18(16) Seam - F
140.5	177	Mudstone
177	192	Siltstone
192	215	Mudstone
215	227	Coal 12'
227	234	Mudstone
234	324	Siltstone
324	338	Mudstone
338	380	Siltstone
380	403	Silty Sandstone
403	419	Mudstone
419	518	Sandstone and some siltstone
518	548	Siltstone near top and silty sandstone
548	553	Mudstone
553	568	Coal 15'
568	586	Mudstone
		End of Hole
		August 25, 1977

Hole No. 1095 Elev. 5578'
Lat. 480,001 Dep. 74,432
Elev. Th.
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '
Top of ____ @ ____ '

Core Size

Hole No. RH 1095 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled: [redacted]

Logged By: R. K. Date: November 7, 1977

Composites:

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills - Burnt Ridge Area			327'

Discard: Reason: Intersections taken from Gamma Ray Log

From	To	
0	39	Overburden
39	57.5	Interbedded mudstone and siltstone
57.5	62.5	Coal 5'
62.5	79	Mudstone
79	97	Siltstone
97	104	Mudstone
104	116	Siltstone
116	224	Sandstone, occasional siltstone interbeds
224	232.5	Mudstone
232.5	245.5	Coal with two feet mudstone band at 241' 13 (11)' Seam - F
245.5	301	Interbedded mudstone and siltstone
301	308	Mudstone
308	314	Coal 6'
314	321	Mudstone
321	327	Siltstone

End of Hole

August 20, 1977

Hole No. 1096 Elev. 5526.8

Lat. 479,986 Dep. 74,153

Elev. Th.

Top of @ '

Top of @ '

Top of @ '

Top of @ '

Top of @ '

Core Size

Hole No. RH 1096 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N O N

Diamond Drill Geological Log

K-FORDING 77(3)A

Objective:

Sampled:

Logged By: R. K. Date: November 8, 1977

Composites:

[redacted]

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills - Burnt Ridge Area			310'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	18	Overburden (Driller Reported 27' Till)
18	20	Mudstone
20	50	Siltstone
50	76	Sandstone, some siltstone near bottom
76	81.5	Mudstone
81.5	100.5	Coal with 2' shale band at 89.5' 19 (17)' Seam - F
100.5	119	Siltstone, sandstone near bottom
119	122	Mudstone
122	130	Coal 8'
130	199	Mostly siltstone, with interbeds of sandstone
199	207	Mudstone, siltstone near bottom
207	223	Coal 16'
223	252	Mudstone
252	300	Interbedded mudstone and siltstone
300	310	Sandstone
		End of Hole
		August 30, 1977

Hole No. 1097 Elev. 5493.6

Lat. 479,707 Dep. 74,375

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

Core Size

Hole No. RH 1097 Page 1 of 1

2507—N D N

Diamond Drill Geological Log

Cominco

K- Fordeng 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R. K. Date: November 8, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills Burnt Ridge Area			383'

From	To	Discard: Intersections taken from Gamma Ray - Log Reason:
0	42	Overburden
42	46	Mudstone
46	60	Sandstone, mudstone 52 - 55'
60	66	Mudstone
66	135	Mostly siltstone with some silty sandstone, mudstone 108 - 111'
135	141	Mudstone
141	147	Coal 6'
147	148	1' Shale
148	149	Coal 1'
149	169	Interbedded mudstone and siltstone
169	188	Sandstone, some siltstone
188	210	Mudstone
210	240	Interbedded siltstone and sandstone
240	262	Siltstone
262	309	Sandstone with siltstone bands
309	319	Siltstone and mudstone
319	328	Coal 9' Seam - F
328	338	10' Mudstone
338	341	Coal 3' Seam - F
341	357	Mudstone and siltstone
357	365.5	Mudstone
365.5	373.5	Coal 8'
373.5	383	Siltstone End of Hole August 7, 1977

Hole No. 1098 Elev. 5533.4
Lat. 479.734 Dep. 74,162.

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1098 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507-M O N

Diamond Drill Geological Log

Cominco

K- FORDING 77(3)

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

Objective:

Sampled:

[redacted]

Logged By: R. K. Date: November 8, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills - Burnt Ridge Area			458'

Discard: Reason: Intersections taken from Gamma Ray Log

From	To	
0	19	Overburden
19	31	Mudstone
31	39	Coal 8'
39	78	Mudstone
78	104	Siltstone
104	126	Mudstone
126	134	Sandstone
134	151	Siltstone
151	165	Sandstone
165	174	Mudstone
174	208	Mostly siltstone with sandstone interbeds
208	272	Sandstone, bottom 4' siltstone
272	275	Mudstone
275	281	Coal 6'
281	287	6' Mudstone
287	315	Coal with 2' Shale band at 301' 28 (26)' Seam -F
315	337	Mudstone with interbeds of siltstone
337	344	Coal 7'
344	372	Mudstone and siltstone
372	378	Sandstone
378	383	Mudstone
383	391	Coal 8'
391	400	Mudstone

Hole No. 1099 Elev. 5520'

Lat. 479,568 Dep. 74,213

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @		'

Core Size

Hole No. RH 1099

2507—N D N

Diamond Drill Geological Log

Cominco

K-Fording 77(3)

320

Objective:			Sampled:		
Logged By:	Date:		Composites:		
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
400	404	Sandstone
404	414.5	Mudstone
414.5	418.5	Coal 4'
418.5	424	Mudstone, carbonaceous
424	427	Shaley Coal
427	432	Mudstone, carbonaceous
432	442	Mudstone
442	449	Siltstone
449	458	Sandstone
		End of Hole August 3, 1977

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

Core Size

Hole No. RH 1099

2507—N D N

Diamond Drill Geological Log

Cominco

K-FOREING 77(3)A

320

40 Scale

Color Plot & Dips | Ore Classes & Aver

Objective:

Sampled:

Logged By: R. K. Date: November 8, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills - Burnt Ridge Area			194'

From	To	Discard: Reason:
		Intersection taken from Gamma Ray Log
0	75	Overburden (Driller Reported 90' soft till and boulders)
75	100	Mudstone
100	102.5	Carbonaceous Shale
102.5	106	Mudstone
106	149	Coal 43' Seam - E
149	158	Mudstone
158	194	Siltstone, silty sandstone 157 - 168'
		End of Hole
		August 26, 1977

Hole No. 1100 Elev. 5494.2

Lat. 475,793 Dep. 74,858

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

Core Size

Hole No. RH 1100

2507—N D H.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: November 8, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills - Burnt Ridge Area			378'

Discard: Reason:

Intersections taken from Gamma Ray Log

From	To	
0	18	Overburden
18	26	Mudstone
26	30	Coal 4'
30	50	Mudstone
50	76	Siltstone with sandstone bands
76	86	Siltstone, mudstone
86	98	Coal 12'
98	126.5	Mudstone
126.5	129.5	Coal 3'
129.5	150	Siltstone
150	162	Sandstone
162	173	Mudstone grading to siltstone towards bottom
173	200	Siltstone grading to silty sandstone towards the bottom
200	295	Sandstone, siltstone 250 - 265'
295	303	Mudstone
303	349	Sandstone
349	364	Coal 15'
364	378	Mudstone

Hole No. 1101 Elev. 5465.2

Lat. 473,458 Dep. 74,590

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

End of Hole

August 29, 1977

Core Size

Hole No. RH 1101

Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

2507—N D N

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R.K. Date: November 8, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Greenhills - Burnt Ridge Area			190'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	105	Overburden
105	151	Sandstone, hard course grained
151	162	Silty sandstone
162	165	Mudstone or cave in (fault) zone
165	190	Sandstone
		End of Hole
		September 8, 1977

Hole No. 1102 Elev. 5567.0

Lat. 479,817 Dep. 75,138

	Elev.	Th.
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'
Top of ____ @ ____		'

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

Core Size

Hole No. RH 1102

Page 1 of 1

2507—N O N

Diamond Drill Geological Log

Denison

K-Fording 77(3)A

320

Objective:		Sampled:			
Logged By: R. K.	Date: September 8/77	Composites:			
Block:	Sect.:	Place: Clode Pit	App. Bear:	App.: Dip.:	Length: 333'

Reason: Intersections taken from Gamma Ray - Neutron Log.

From	To	Discard:
0	5.5	COAL
5.5	10	4.5 Mudstone
10	31	COAL 21' SEAM - 7
31	61	Mudstone
61	93	COAL 32' SEAM - 5
93	106	Mudstone
106	129	Siltstone and mudstone interbeds
129	160	COAL 31' SEAM - r.7
160	191.5	Mudstone
191.5	227.5	COAL 36' SEAM - r.5
227.5	233	Mudstone
233	238.5	COAL 5.5'
238.5	285	Interbedded mudstone and siltstone
285	333	Sandstone

END OF HOLE

JUNE 25/77

Hole No. _____	Elev. _____		
Lat. _____	Dep. _____		
		Elev.	Th.
Top of _____	@ _____		'
Top of _____	@ _____		'
Top of _____	@ _____		'
Top of _____	@ _____		'

Core Size

Hole No. RH 1500 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507-

Diamond Drill Geological Log

Dominion

K - FORDING 77(3)A

320

Objective:		Sampled:			
Logged By: R. K.	Date: September 8/77	Composites:			
Block:	Sect.:	Place: Clode Pit	App. Bear:	App.: Dip.:	Length: 414'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray - Neutron Log.	
0	31	Mudstone	
31	53	COAL 22')	
53	55	2' Shale) SEAM - 5	
55	57	COAL 2')	
57	77	Mudstone	
77	127	Siltstone	
127	153	Mudstone	
153	188	Siltstone	
188	206	Siltstone and sandstone	
206	211	Mudstone	
211	216	COAL 5' PART r.5 SEAM	
216	230	Mudstone	
230	269	Interbedded mudstone and siltstone with sandstone bands	
269	275	Silty sandstone	
275	286	Siltstone, mudstone near top	
286	333	Sandstone, probable major thrust fault elevation at 333'	
333	358	Mudstone	
358	414	Mudstone and siltstone interbeds	
		END OF HOLE	
		JUNE 22/77	

Hole No. _____ Elev. _____

Lat. _____ Dep. _____

Elev. Th.

Top of _____ @ _____ '

Top of _____ @ _____ '

Top of _____ @ _____ '

Top of _____ @ _____ '

Core Size

Hole No. RH 1501 Page 1 of 1

2507-

Diamond Drill Geological Log

K-FORDING 77(3)A

320

Objective:

Sampled:

Logged By: R. K. Date: September 8/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Clode Pit			289'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

O

From	To	Discard:
0	53	Fill or blasted rock
53	75	Mudstone
75	78	COAL 3'
78	87	9' Mudstone
87	109	COAL 22' SEAM -7
109	149	Mudstone, probable fault zone at 124'
149	160	Siltstone
160	171	Mudstone
171	175	COAL 4' Part SEAM - r.7
175	210	Mostly mudstone, some siltstone, Coal stringers at 208'
210	230	Siltstone, grading to sandstone towards bottom
230	289	Sandstone

Reason: INTERSECTIONS TAKEN FROM GM. – NT. LOG

Hole No. Elev.

Lat. Dep.

Elev. Th.

Top of @ ,

Top of @ ,

Top of @ ,

Top of @ ,

END OF HOLE

AUGUST 7/77

Core Size

Hole No. RH 1502 Page 1 of 1

2507–

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

320

Objective:		Sampled:			
Logged By: R. K.	Date: September 8/77	Composites:			
Block:	Sect.:	Place: Clode Pit	App. Bear:	App.: Dip.:	Length: 350'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log.
0	70	Fill some sandstone near bottom
70	85	Mudstone
85	114	Siltstone
114	126	Mudstone
126	151	Siltstone
151	157	COAL 6' PART SEAM - 7
157	198	Mudstone and siltstone interbeds
198	252	Silty sandstone and siltstone
252	268	Sandstone
268	299	Interbedded siltstone and sandstone
299	350	Sandstone
		END OF HOLE
		AUGUST 6/77

Hole No. _____ Elev. _____

Lat. _____ Dep. _____

	Elev.	Th.
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'

Core Size

Hole No. RH 1503 Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507-

Diamond Drill Geological Log

Cominco

K-Fording 77/31A.

320

Objective:

Logged By: R. K. Date: September 8/77

Sampled:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Clode Pit			300'

40 Scale.

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log.
0	28	COAL some waste near top 26' SEAM - 5
28	68	Mudstone, some siltstone near bottom
68	108	Mudstone, two feet Coal band at 78'
108	185	Mostly siltstone, some sandstone
185	203	COAL 18'
203	209	6' Mudstone SEAM - r.5 ?
209	213	COAL 4'
213	236	Mostly mudstone, with siltstone interbeds
236	300	Sandstone, some siltstone near top
		END OF HOLE
		AUGUST 8/77

Hole No. Elev.

Lat. Dep.

Elev. Th.

Top of @ '

Top of @ '

Top of @ '

Top of @ '

Core Size

Hole No. RH 1504 Page 1 of 1

2507-

Diamond Drill Geological Log

K-FORDING 77(3)A

320

Objective:		Sampled:			
Logged By: R. K. -	Date: September 8/77	Composites:			
Block:	Sect.:	Place: Clode Pit	App. Bear:	App.: Dip.:	Length: 247'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	8	Mudstone
8	36	COAL 28' SEAM - 5
36	50	Mudstone
50	91	Siltstone
91	100	Mudstone, siltstone near bottom
100	102	COAL 2'
102	123	Mudstone
123	169	Siltstone, with bands of sandstone
169	195.5	COAL 26.5' SEAM - r.5 ?
195.5	199	3.5' Shale
199	202	COAL 3'
202	210	Silty sandstone
210	232	Siltstone some mudstone
232	247	Sandstone some siltstone near top

END OF HOLE

AUGUST 8/77

Hole No. Elev.
Lat. Dep.
Elev. Th.
Top of @ '
Top of @ '
Top of @ '
Top of @ '

40 Scale
Color Plot & Dips | Ore Classes & Aver.
0

Core Size

Hole No. RH 1505 Page 1 of 1

2507-

Diamond Drill Geological Log

Cominco

K- FORDING 77(3)A

320

Objective:		Sampled:				
Logged By: R. K.	Date: September 8/77	Composites:				
Block:	Sect.:	Place: Clode Pit	App. Bear:	App.: Dip.:	Length: 287'	

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log.
0	27	Overburden
27	48	Mudstone
48	80	Siltstone with some mudstone, silty sandstone near bottom
80	105	Mudstone
105	152	Siltstone
152	157	Mudstone
157	180.5	COAL with 1.5' Shale band at 174.5' 23.5 (22') SEAM - 9
180.5	187	Mudstone and siltstone
187	189	Coaly Shale
189	265	Mostly siltstone with bands of mudstone
265	287	Sandstone
		END OF HOLE
		AUGUST 12/77

Hole No. _____ Elev. _____

Lat. _____ Dep. _____

	Elev.	Th.
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'
Top of _____ @ _____		'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

Hole No. RH 1506 Page 1 of 1

2507-

Diamond Drill Geological Log

Cominco

K- FORDING 77(3)A

[redacted]

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective: | Sampled:

Logged By: RK Date: Nov. 9/77 | Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			250'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	2	Mudstone
2	24	Coal 22' SEAM - 7
24	64	Mudstone with bands of siltstone
64	101.5	Coal with 1.5' shale band at 96' .37.5 (36)' SEAM - 5
101.5	106	4.5' Mudstone
106	108.5	Coal 2.5'
108.5	121.5	Mudstone
121.5	156	Coal with two 2' & 1.5' shale bands at 128.5' & 146.5' 34.5 (31)' SEAM - r.7
156	185	Interbedded mudstone and siltstone
185	203	Coal 18' SEAM - r.5
203	212	Mudstone
212	214	Sandstone
214	218.5	Mudstone
218.5	221.5	Coal 3'
221	236	Mudstone
236	250	Sandstone
		End of hole
		Sept. 28/77

Hole No. 1507 Elev. 6012.0

Lat. 496,324 Dep. 79,766

	Elev.	Th.
Top of "7" @ ≈6010		22'
Top of "5" @ 5948		37.5 (36)
Top of "r.7" @ 5890		34.5 (31)
Top of "r.5" @ 5827		18'

Core Size

Hole No. RH 1507 Page 1 of 1

2507—N D N.

Diamond Drill Geological Log

Cominco

K-FEEDING 7(3)A

Objective:

Sampled:

Logged By: RK Date: Nov. 9/77

Composites:

[redacted]

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			250'

From	To	Discard: Reason:
		Intersections taken Gamma Ray Log
0	8	Mudstone
8	12.5	Coal 4.5'
12.5	16	3.5' Mudstone
16	42	Coal 26' SEAM - 7
42	63	Mudstone
63	78	Siltstone, some silty sandstone
78	83	Mudstone
83	110	Coal with 1.5' shale band at 104' 27(25.5)' SEAM 5
110	114	Mudstone
114	118	Sandstone
118	176.5	Mostly mudstone with interbeds of siltstone
176.5	212.5	Coal 36' SEAM - 1.5
212.5	236	Mostly siltstone with bands of sandstone and mudstone
236	242	Mudstone
242	250	Sandstone
		End of hole
		Sept 26/77

Hole No. Elev. 6053'0

Lat. 495.625 Dep. 80,365

	Elev.	Th.	
Top of "7" @	6037	26'	
Top of "5" @	5970	21'	(25'5")
Top of "1.5" @	5877	36'	
Top of @		'	

Core Size

Hole No. RM 1508 Page 1 of 1

2567—N O N.

Diamond Drill Geological Log

Cominco

K-FORDING 77/3A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: RK Date: Nov. 9/77

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray Log	
0	16.5	Mudstone and siltstone	
16.5	20	Coal 3.5'	
20	26	6' mudstone	
26	48	Coal SEAM - 7	
48	70	Mostly siltstone some mudstone near top	
70	76	Sandstone	
76	84.5	Mudstone	
84.5	112	Coal 27.5' SEAM - 5	
112	115	3' Shale	
115	118	Coal 3' SEAM - 5	
118	133	Mudstone and siltstone	
133	147	Siltstone, and some sandstone	
147	155	Coal 8'	
155	157.5	2.5' Shale	
157.5	161	Coal 3.5'	
161	164	Mudstone	
164	165	Shaley Coal 1'	
165	172	Mudstone	
172	195	Coal 23' SEAM - r.5	
195	198.5	3.5' Mudstone	
198.5	220.5	Coal with 1.5' Shale band at 203' 22 (20.5)' SEAM - 7.5	
220.5	250	Interbedded siltstone and sandstone, 1' coal band at 225'	
		End of hole	
		Sept. 27/77	

Hole No. 1509 Elev. 6052.9

Lat. 495,405 Dep. 80,573

	Elev.	Th.
Top of "7"	@ 6027	22'
" "5"	5968	27.5' 3'
Top of "1.5"	5881	20'
Top of "		'

Core Size

Hole No. RH 1509

Page 1 of 1

0

2507—N O N

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

[redacted]

Logged By: RK Date: Nov. 9/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			

From	To	Discard:	Reason:
		Intersections taken from Gamma Ray Log	
0	11	Fill or loose rock (broken)	
11	28 5	Mudstone bands of siltstone	
28 5	55 5	Coal 27' SEAM - 5	
55.	66	Mudstone	
66	82	Siltstone with mudstone interbeds.	
82	98	Silty sandstone	
98	154	Siltstone with bands of sandstone and mudstone	
154	185	Silty sandstone	
185	224	Siltstone, sandstone 204 - 208'	
224	247	Sandstone	

Hole No. 1510 Elev. 6050.4

Lat. 455,209 Dep. 80,425

	Elev.	Th.
Top of	@	'
Top of "5"	6023	27
Top of	@	'
Top of	@	'

End of hole

Oct. 6/77

Core Size

Hole No. RH 1510 Page 1 of 1

0

2507—N O N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

Logged By: RK Date: Nov. 9/77

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CLODE PIT			

40 Scale

Color Plot & Dips | Ore Classes & Aver

0

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Log
0	15	Broken - loose rock
15	21	Mudstone
21	48	Coal 27' SEAM - 5
48	53	Mudstone
53	76	Siltstone
76	82	Sandstone
82	123	Siltstone
123	129	Mudstone
129	160	Mostly siltstone, sandstone interbeds.
160	169	Mudstone
169	181	Coal 12' SEAM r.5 (PART)
181	227	Siltstone with mudstone interbeds } Pear shaped bedding between SEAM - 5 & SEAM - 4
227	250	Sandstone " " " " " " " "
		End of hole
		Oct. 4/77

Hole No. 1511 Elev. 6048-8

Lat. 495,401 Dep. 80,242

	Elev.	Th.
Top of ____ @ ____		'
Top of "5" @	6028	27'
Top of "r.5" @	5880	12'
Top of ____ @ ____		'

Core Size

Hole No. RH 1511 Page 1 of 1

2567—N.O.N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

Logged By: R. K. Date: November 14, 1977

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Castle Mountain			658'

From	To	Discard: Reason: Intersections taken from Gamma Ray - Neutron Log
0	14	Overburden and or coal bloom (Hole was collared in Coal Bloom).
14	51	Interbedded mudstone and siltstone
51	67	Mudstone
67	89	Siltstone and mudstone
89	117	Sandstone, siltstone 94-99'
117	124	Mudstone
124	142	Siltstone
142	166	Sandstone
166	188	Mudstone
188	199.5	Siltstone, mudstone near bottom
199.5	202	Coal 2.5'
202	205	3' Mudstone
205	208	Coal 3'
208	214	Mudstone
214	217	Highly carbonaceous mudstone
217	220	Mudstone
220	226	Coal 6' Seam - 7
226	231	5' Mudstone
231	246	Coal 15' Seam - 7
246	280	Mudstone
280	285	Shaley Coal
285	307	Siltstone
307	327	Mudstone

Core Size

Hole No. RH 2000

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.D.M.

Diamond Drill Geological Log

Cominco

K- FORDING 77/3A

[redacted]

Objective:		Sampled:				
Logged By:	Date:	Composites:				
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

From	To	Discard:	Reason:
327	377	Mostly sandstone siltstone interbed 338 - 349'	
377	402	Sandy Siltstone	
402	422	Sandstone	
422	440	Silty Sandstone	
440	477	Siltstone	
477	506	Mudstone, siltstone 490 - 496'	
506	518	Siltstone	
518	552	Mudstone, some shaley siltstone near top	
552	570	Coal 18' Seam - 5u	
570	608	Siltstone, mudstone near bottom	
608	617	Coal 9' Seam - 5l	
617	620	3' Mudstone	
620	622	Shaley Coal 2' Seam - 5l	
622	623.5	1.5' Mudstone	
623.5	628.5	Coal 5' Seam - 5l	
628.5	648	Mudstone	
648	658	Sandstone	
		End of Hole	
		August 5, 1977	

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

Hole No. RH 2000

2507—N.O.N.

K-formation 72(3)a

Logged By: R. K. Date: November 14, 1977 Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Castle Mountain			550'

Discard: Reason: Intersections taken from Gamma Ray - Neutron Log

From	To	
0	7	Overburden
7	18	Mudstone
18	26.5	Coal 8.5'
26.5	28	1.5' Shale
28	29	Shaley Coal 1'
29	45	Mudstone
45	58	Siltstone grading to sandstone near bottom
58	64	Sandstone
64	163	Mostly mudstone with siltstone interbeds occasionally
163	211	Sandstone, some siltstone near top
211	215	Coal 4'
215	270	Mostly siltstone with thin bands of sandstone
270	272	Coal 2'
272	296	Mudstone, sandstone 280 - 285'
296	320	Sandstone
320	321	Coal 1'
321	331	Mudstone
331	336	Highly carbonaceous mudstone
336	346	Mudstone
346	356	Siltstone
356	362.5	Mudstone 5'
362.5	367.5	Coal 5'
367.5	378	Mudstone

Core Size

Hole No. RH 2002 Page 1 of 2

320

2507—N.D.N.

Diamond Drill Geological Log

K-FORDING 77(3)A

Cominco

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: Date:

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard:	Reason:
378	396	Siltstone, sandstone near bottom	
396	406	Mudstone	
406	412	Highly carbonaneous mudstone	
412	438	Mudstone	
438	480	Siltstone	
480	506	Sandsto-ne	
506	550	Mostly mudstone with siltstone bands, coal stringers at 534' and 547'	

End of Hole

July 25, 1977

Core Size

Hole No. RH 2002

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-FOLDING 77(3)A

320

Objective:			Sampled:		
Logged By: R.K.	Date: November 14, 1977		Composites:		
Block:	Sect.:	Place: Castle Mountain	App. Bear:	App.: Dip.:	Length: 535'

From	To	Discard: Intersections taken from Gamma Ray - Neutron Log Reason:
0	5	Over burden
5	13	Sandy siltstone
13	21	Mudstone
21	40	Siltstone
40	68	Sandstone
68	71	Mudstone
71	81	Coal 10' Seam - 13
81	157	Mostly mudstone with occasional siltstone bands
157	159	Coal 2'
159	226	Siltstone with several thin interbeds of mudstone
226	228	Coal 2' Seam - 12
228	236.5	8.5' Mudstone
236.5	238.5	Coal 2' Seam - 12
238.5	252	Mudstone
252	256.5	Coal 4.5' Seam - 11U
256.5	296	Interbedded mudstone and siltstone
296	302	Sandy siltstone
302	321	Mudstone
321	360	Interbedded mudstone and siltstone
360	374	Mudstone
374	379	Siltstone
379	384	Mudstone
384	405	Sandstone , some siltstone near top.

Core Size

Hole No. RH 2003

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—M.D.M.

K-Fording 77(3)A

320

From	To	Discard:	Reason:
405	412.5	Mudstone	
412.5	417.5	Coal 5' Seam - 11	
417.5	421.5	4' Mudstone	
421.5	426.5	Coal 5' Seam - 11	
426.5	428	1.5' Mudstone	
428	429	Shaley Coal 1' Seam - 11	
429	435	Mudstone	
435	441	Siltstone	
441	460	Mudstone	
460	498	Siltstone grading progressively to sandstone towards bottom	
498	535	Sandstone	
		End Of Hole	
		July 12, 1977	

Core Size

Hole No. RH 2003 Page 2 of 2

2507—N.O.N.

Diamond Drill Geological Log

Cominco

K-Fording 77(3)A

Objective:			Sampled:		
Logged By: R. K.	Date: November 10, 1977		Composites:		
Block:	Sect.:	Place: Castle Mountain	App. Bear:	App.: Dip.:	Length: 470'

From	To	Discard: Intersections taken from Gamma Ray Log — Reason:
0	24	Overburden
24	33.5	Coal 9.5' Part Seam - 7
33.5	113	Mudstone, several bands of siltstone
113	153	Siltstone with thin bands of sandstone
153	159	Mudstone
159	176	Coal 17' Seam - 5
176	196	Siltstone
196	206	Sandstone
206	216	Mudstone
216	220	Coal 4'
220	225.5	Mudstone
225.5	227.5	Coal 2'
227.5	276	Mostly siltstone, some mudstone near top and silty sandstone near bottom
276	278	Coal 2' Seam - 4
278	282	4' Mudstone
282	286	Coal 4' Seam - 4
286	290	4' Mudstone
290	293.5	Coal 3.5' Seam - 4
293.5	302	Mudstone
302	305	Siltstone
305	322	Mustone
322	342	Siltstone
342	349	Coal 7' Seam - 2

Core Size

Hole No. RH 2004

40 Color Dips ver. 320

2507—N.D.K.

Logged By: | Date: | Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

K- FOLDING 77(3)A

320

From	To	Discard:	Reason:
349	356	Mudstone	
356	358	Coal 2'	
358	371	Siltstone, mudstone near top	
371	375	Coal 4' Seam - 1	
375	470	Basal sandstone	

End of Hole

July 29, 1977

Core Size

Hole No. RH 2004

Diamond Drill Geological Log

K-Fordwe 77(3)A

320

Objective:			Sampled:		
Logged By: R.K.	Date: November 10, 1977		Composites:		
Block:	Sect.:	Place: Castle Mountain	App. Bear:	App.: Dip.:	Length: 427'

From	To	Discard: Reason: Intersections taken from driller's report - No Radiation Log (Hole Caved In)
0	14	Overburden
14	18	Sandstone
18	20	Coal 2'
20	24	4' Mudstone
24	27	Coal 3'
27	46	Hard siltstone
46	127	Sandstone, some siltstone near the bottom
127	128	Coal 1'
128	143	Siltstone, coal stringers at 133'
143	196	Sandstone
196	202	Coal 6'
202	252	Sandstone some siltstone
252	294	Mudstone
294	298	Coal 4' Seam - 7
298	300	2' Shale
300	317	Coal 17' Seam - 7
317	340	Sandstone
340	389	Mudstone
389	427	Sandstone
		End of Hole
		August 9, 1977

Core Size

Hole No. RH 2006 Page 1 of 1

40 Sc... Color Pl... Dips ... Cla... r.

0 70

2507—N.D.K.

Diamond Drill Geological Log

Cominco

K-Fording 77/3A

320

Objective:			Sampled:		
Logged By: R.K.	Date: November 10, 1977		Composites:		
Block:	Sect.:	Place: Castle Mountain	App. Bear:	App.: Dip.:	Length: 646'

From	To	Discard: Intersections taken from Gamma Ray Log — Reason:
0	7	Overburden
7	52	Sandstone, some sandy siltstone near top
52	110	Mostly mudstone with several bands of siltstone
110	131	Sandy Siltstone
131	150	Coal 19' Seam - 7
150	160	Siltstone, top 2' mudstone
160	193.5	Mudstone with several thin interbeds of siltstone
193.5	195	Coal 1.5'
195	257.5	Mostly mudstone, occasional bands of siltstone, coal stringers at 207'
257.5	260.5	Coal 3'
260.5	314	Mudstone, coal stringers at 274'
314	322	Siltstone
322	331	Mudstone
331	339	Siltstone
339	346	Mudstone
346	352	Sandstone
352	392.5	Mudstone, siltstone 379' - 384'
392.5	408.5	Coal with 2' shale band at 402' 16(14') Seam - 5
408.5	451	Mudstone some siltstone near top
451	469.5	Sandstone, grading to mudstone towards bottom
469.5	472	Coal 2.5'
472	481	Highly carbonaceous mudstone
481	484	Coal 3'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

Hole No. RH 2008

2507—N.D.M.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective: | Sampled: [redacted]

Logged By: | Date: | Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard:	Reason:
484	517	Mudstone, silty interval in the middle	
517	528	Coal with 1.5' Shale band at 520' 11(9.5) Seam - 4	
528	533	5' Mudstone	
533	538	Coal 5' Seam - 4	
538	548	Mudstone	
548	595	Siltstone	
595	606	Coal 11' Seam - 2	
606	615	Mudstone	
615	617	Coal 2'	
617	631.5	Mudstone	
631.5	636.5	Coal 5' Seam - 1	
636.5	646	Basal Sandstone	

End of Hole

July 18, 1977

Core Size

Hole No. RH 2008

2307—N.O.N.

Diamond Drill Geological Log

Cominco

K-fording 77/3/9

[redacted]

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Objective:

Sampled:

Logged By: R.K. Date: November 10, 1977 Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Castle Mountain			825'

Discard: Reason: Intersections taken from Gamma Ray Neutron Log

From	To	
0	3	Overburden
3	8	Coal 5'
8	15	7' Mudstone
15	43.5	Coal with 2.5' Shale band at 22' 28.5 (26)' Seam - 9
43.5	60	Mudstone
60	89	Siltstone with interbedded bands of mudstone
89	139	Mudstone
139	169	Siltstone, bottom 3' mudstone
169	177	Sandstone
177	234	Siltstone with thin interdeds of sandstone
234	259	Sandstone
259	289	Siltstone with thin bands of mudstone and sandstone
289	300	Mudstone
300	305	Coal 5'
305	360	Mudstone with several bands of siltstone
360	389	Sandy siltstone and sandstone
389	408	Coal 19' Seam -7
408	418	Siltstone
418	441	Mudstone
441	443	Coal 2'
443	467	Siltstone
467	511	Siltstone with occasional mudstone bands
511	530	Mudstone

Core Size

Hole No. RH 2009

2567—M.D.N.

Diamond Drill Geological Log

Cominco

K-Fording 77-13A

Objective:

Sampled:

Logged By: R. K. Date:

Composites:

[redacted]

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
530	540	Sandstone
540	562	Mudstone and siltstone bands, highly carbonaceous zone 552' - 556'
562	577	Coal 15' Seam - 5
577	598	Mudstone
598	617	Siltstone
617	627	Mudstone
627	629	Coal 2'
629	631	2' Shale
631	633	Coal 2'
633	636	3' Shale
636	639.5	Coal 1.5'
639.5	644	Mudstone
644	647	Coal 3'
647	675.5	Mudstone, siltstone 660 - 670'
675.5	676.5	Coal 1'
676.5	679	Mudstone
679	685	Coal 6' Seam - 4
685	690	5' Mudston e
690	694.5	Coal 4.5' Seam - 4
694.5	722	Mudstone
722	728	Sandstone
728	746.5	Siltstone
746.5	757.5	Coal 11' Seam - 2

Core Size

Hole No. RH 2009

2507—N.O.N.

Diamond Drill Geological Log

Cominco

K-FOREDING 72(3)A

[redacted]

Objective:	Sampled:	40 Scale
Logged By: Date:	Composites:	Color Plot & Dips / Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
757.5	764	Mudstone
764	766	Coal 2'
766	775	Mudstone
775	781	Coal 6' Seam - 1
781	825	Basal Sandstone
		End of Hole
		August 17, 1977

Core Size

Hole No. RH 2009

2507—N D.N.

Diamond Drill Geological Log

K-FORDING 77(3)A

Objective:

Sampled: [redacted]

Logged By: R. K. Date: November 10, 1977

Composites:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Castle Mountain			658'

From	To	Discard: Reason:
		Intersections taken from Gamma Ray - Neutron Log
0	7	Overburden
7	19	Siltstone
19	58	Sandstone
58	174	Mudstone, some siltstone near top
174	178.5	Coal 4.5'
178.5	236	Mudstone
236	301	Siltstone, highly carbon aceous shale band from 296 - 298'
301	381	Sandstone, occasional siltstone bands
381	476	Mudstone, with several thin siltstone interbeds
476	495	Silty sandstone and siltstone
495	499.5	Mudstone
499.5	527	Coal 27.5' Seam - 7
527	571	Mostly mudstone with interbeds of siltstone
571	573	Coal 2'
573	578.5	5.5' Mudstone
578.5	581	Coal 2.5'
581	610	Mudstone
610	658	Interbedded mudstone and siltstone, bands of sandstone
		End of Hole
		August 3, 1977

Core Size

Hole No. RH 2011

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)9

Objective:

Sampled:

Logged By: R. K. Date: November 10, 1977

Composites:

[redacted]

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Castle Mountain			667'

From	To	Discard: Reason:
0	13	Overburden (Driller reported 53' Till and boulders)
13	66	Silty Sandstone and siltstone
66	120	Siltstone
120	170	Mudstone
170	198.5	Siltstone
198.5	218.5	Coal 20' Seam - 7
218.5	278	Siltstone
278	355	Mostly mudstone with bands of siltstone
355	401	Sandstone, some siltstone near top, silty mudstone 385' - 391'
401	420	Coal 19' Seam 5
420	465	Siltstone and mudstone
465	469	Coal 4'
469	476	7' Mudstone
476	480	Coal 4'
480	490.5	Mudstone
490.5	500.5	Coal 10' Seam - 4
500.5	503	2.5' Shale
503	509	Coal 6' Seam - 4
509	515	Mudstone
515	563	Siltstone
563	579	Coal 16' Seam - 2
579	593	Mudstone and siltstone

Core Size

Hole No. RH 2012

0

2507—M.O.N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

320

Objective:		Sampled:				
Logged By:	Date:	Composites:				
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

40 Scale | Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard:	Reason:
593	599	Coal 6' Seam - 1	
599	667	Basal Sandstone	
		End of Hole	
		August 24, 1977	

Core Size

Hole No. RH 2012 Page 2 of 2

2507—N D M.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

[redacted]

Logged By: R. K. Date: November 10, 1977

Composites:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Castle Mountain			862'

From	To	Discard: Reason:
		Intersections taken from Gm. Roy - Nt. Log
0	24	Siltstone, some overburden near top
24	37.5	Mudstone
37.5	42.5	Coal 5' Seam - 9
42.5	51	8.5' Mudstone
51	73	Coal with 2' shale band at 59' 22(20') Seam - 9
73	175	Mostly siltstone with some sandstone and bands of mudstone
175	228	Mudstone coal stringers at 184' and 207'
228	242	Sandy Siltstone
242	276	Mudstone
276	284	Sandstone and siltstone
284	323	Interbedded mudstone and siltstone
323	360	Siltstone
360	392	Sandstone, siltstone 374' - 384'
392	409.5	Mudstone
409.5	414.5	Coal 5'
414.5	454	Mudstone
454	493	Siltstone, mudstone 462' - 467'
493	512	Coal 19' Seam - 7
512	562	Interbedded mudstone and siltstone and several bands of sandstone
562	640	Mudstone
640	654	Siltstone
654	702	Mudstone
702	747	Siltstone, some sandstone near top

Core Size

Hole No. RH 2013

0

2507—N D N.

Diamond Drill Geological Log

K-FOOTAGE 77(3)A

Objective:

Sampled:

Logged By:

Date:

Composites:

[redacted]

Block:

Sect.:

Place:

App. Bear:

App.: Dip.:

Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard:	Reason:
747	754	Mudstone	
754	768	Coal 14' Seam -5	
768	772	4' Mudstone	
772	776	Coal 4' Seam -5	
776	796	Mudstone	
796	803	Sandstone	
803	814	Mudstone	
814	818	Coaly Shale 4'	
818	826	Mudstone	
826	828	Coal 2'	
828	841	Mudstone	
841	842	Coal 1'	
842	852	Mudstone	
852	861	Coal 9' (Seam F.W. Estimated) Seam - 4	
861	862	Mudstone	

End of Hole

August 20, 1977

Core Size

Hole No. RH 2013

2507—N O N.

Diamond Drill Geological Log

Cominco

K-FOLDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled: [redacted]

Logged By: R.K. Date: November 10, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Castle Mountian			830'

From	To	Discard: Reason: Intersections taken from Gamma Ray - Neutron Log
0	8	Overburden
8	65	Mudstone, bands of sandy siltstone
65	68	Coal 3'
68	78	Mudstone
78	121	Mostly siltstone, thin interbeds of mudstone
121	125	Coal 4'
125	155	Mudstone with several bands of siltstone
155	195	Coal with 2' shale band at 162' 40(38)' Seam - 9
195	206	Mudstone
206	212	Siltstone
212	267	Mudstone, siltstone 244-248'
267	324	Siltstone
324	354	Sandstone
354	408	Interbedded siltstone and mudstone
408	410	Coal 2'
410	450	Mudstone grading te siltstone near bottom
450	469	Siltstone
469	545	Sandstone, sandy siltstone 502-510'
545	586	Mudstone with interbeds of siltstone
586	622.5	Siltstone some sandstone
622.5	644	Coal 21.5' Seam - 7
644	722	Mostly mudstone, some siltstone coal stringers at 675' and 710'
722	725	Coal 3'

Core Size

Hole No. Rh 2014 Page 1 of 2

0

2507—M D N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: Date:

Composites:

[redacted]

Block: | Sect.: | Place: | App. Bear: | App.: Dip.: | Length:

From	To	Discard: Reason:
725	731	Siltstone
731	733	Coal 2'
733	796	Mudstone with some siltstone
796	830	siltstone, sandstone near bottom
		End of Hole
		August 28, 1977

Core Size

Hole No. RH 2014

2507—N D N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

Logged By: RK Date: Nov. 9/77

Composites:

Block.	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Castle Mt.			

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Neutron Log
0	5	Overburden
5	12	Mudstone
12	70	Mostly siltstone with interbeds of mudstone
70	142	Sandstone
142	154	Mudstone
154	162	Sandy siltstone
162	217	Mostly mudstone, several siltstone bands
217	229	Siltstone, mudstone near bottom
229	233	Shaley Coal with shale bands 4' SEAM - 7
233	247	Coal 14' SEAM - 7
247	269	Siltstone
269	282	Mudstone
282	284	Shaley Coal 2'
284	364	Mudstone with occasional bands of siltstone
364	376	Coal 12' SEAM - 5
376	411	Mudstone
411	420	Shaley Coal and Shale
420	447	Mudstone
447	490	Siltstone with silty sandstone intervals
490	493	Coal 3' SEAM - 4
493	497.5	4.5' Shale
497.5	502.5	Coal 5' SEAM - 4
502.5	514	Mudstone

Core Size

Hole No. RH 2015 Page 1 of 2

25C7—N.D.N.

Diamond Drill Geological Log

Cominco

K-FOLDING 77/3/A

Objective: | Sampled: | [redacted]

Logged By: | Date: | Composites:

Block: | Sect.: | Place: | App. Bear: | App.: Dip.: | Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
514	551	Siltstone, some mudstone
551	559	Coal 8' SEAM - 2
559	571	Mudstone
571	572	Coal 1'
572	586.5	Mudstone and siltstone
586.5	590.5	Coal 4' SEAM - 1
590.5	602	Basal sandstone

End of hole

Jul. 14/77

Core Size

Hole No. RH 2015 Page 2 of 2

2507—N D.N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: RK Date: Nov. 9/77

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		CASTLE MT.			452'

From	To	Discard:	Reason:
		~~Intersections~~ taken from Gamma Ray Log	
0	13	Sandstone or overburden	
13	57	Shale, siltstone 25 - 34'	
57	85	Siltstone	
85	114	Shale	
114	129	Siltstone	
129	391	Shale with occasional siltstone bands	FERNIE FORMATION
391	407	Siltstone	
407	420	Shale	
420	436	Siltstone	
436	452	Shale	

End of hole

Jul. 31/77

Core Size

Hole No. RH 2016 Page 1 of 1

25C7—N.D.K.

Diamond Drill Geological Log

K - FORDINE 77(3)A

Cominco

Objective:			Sampled:		
Logged By: RK	Date: Nov. 9/77		Composites:		
Block:	Sect.:	Place: CASTLE MT.	App. Bear:	App.: Dip.:	Length: 409'

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
		Intersections taken from Gamma Ray Neutron Log
0	51	Mudstone
51	107	Mostly sandstone with several interbeds of siltstone
107	207	Mostly mudstone with siltstone interbeds
207	227	Coal 20' SEAM - 7
227	237	Mudstone
237	269	Siltstone with mudstone bands
269	309	Mudstone with two thin shaley coal bands 272' & 278'
309	326	Sandstone with siltstone interbeds
326	357	Mudstone with thin bands of siltstone
357	394	Siltstone and silty sandstone
394	407	Coal with 2' shale band at 400' 13(11)' SEAM - 5
407	409	Mudstone
		End of hole
		July 22/77

Core Size

Hole No. RH 2017 Page 1 of 1

2567—N.D.N.

Diamond Drill Geological Log

Cominco

K-FORDING 77(3)A

Objective:

Sampled:

Logged By: RK Date: Nov. 28/77

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		ELK VALLEY (BRITT CREEK AREA)			528'

From	To	Discard: Reason:
		For 0-511' Intersections taken from Gamma Ray - Neutron Log
0	121	Overburden (Driller reported 0-146' Gravel, clay and till).
121	144	Siltstone or overburden
144	165	Carbonaceous mudstone
165	200	Sandstone
200	232	Interbedded Siltstone and Sandstone
232	256	Sandstone
256	262.5	Coal 6.5'
262.5	295	Mudstone and siltstone Coal stringers at 272'
295	327.5	Sandy Siltstone
327.5	335.5	Coal 8'
335.5	349	Mudstone
349	354	Coal with one foot shale band at 351' 5(4)'
354	422	Mudstone with siltstone interbeds, 1.5' coal band at 398'
422	428	Coal 6'
428	464.5	Siltstone, sandstone 442' to 453'
464.5	476.5	Coal with 1' shale band 472.5' 12(11)'
476.5	479	Mudstone
479	483	Sandstone
483	486	Coal 3'
486	512	Mudstone siltstone near bottom
512	516	Coal 4'
516	528	Sandstone
		End of hole Sept 12/77

Hole No. Elev.
Lat. Dep.
Elev. Th.
Top of @ '
Top of @ '
Top of @ '
Top of @ '

Core Size

Hole No. EV-7

Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N.D.H.

Diamond Drill Geological Log

K-fording 77(3)a

Cominco

Objective:

Sampled:

Logged By: RK Date: Nov. 28/77

Composites:

[redacted]

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		ELK VALLEY (OSBORNE CREEK AREA)			514'

Discard: Reason:

Intersections taken from Gamma Ray - Neutron Log.

From	To	
0	44	Overburden
44	64	Mudstone, siltstone bands
64	82	Sandstone
82	140	Interbedded mudstone and siltstone bands, sandstone 99-104'
140	150	Sandstone
150	171	Mudstone, coal stringers at 164'
171	208	Siltstone grading to sandstone towards bottom
208	236	Sandstone
236	238.	Mudstone
238.	240.	Coal 2'
240.	270	Interbedded mudstone and siltstone
270	301	Mostly sandstone with siltstone interbeds
301	307	Mudstone
307	323	Sandstone
323	392	Interbedded siltstone and mudstone
392	404	Mudstone
404	412	Sandy siltstone
412	427	Mudstone with siltstone bands
427	437	Sandstone
437	486	Siltstone with thin interbeds of mudstone
486	493	Mudstone
493	514	Sandstone
		End of hole Sept 20/77

Hole No. Elev.

Lat. Dep.

Elev. Th.

Top of @ '

Top of @ '

Top of @ '

Top of @ '

Core Size

Hole No. EV-8

Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N C K

Diamond Drill Geological Log

K - FOREDING 77(3)A

320

Objective:		Sampled:				
Logged By: K. Heck	Date: 20/05/77	Composites:				
Block:	Sect.:	Place: Eagle Mtn.	App. Bear:	App.: Dip.:	Length: 1176'	

From	To	Discard: Reason:
0'	10	Tricone
10	64	Sandstone, fine to medium grained, medium grey, oxidized
		18 - 19' } interbedded medium grained, light grey x-bedded sandstone
		49 - 51' }
64	82	Coal, clarain and fusain with minor vitrain bands
		72.5 - 73' have oxidized mudstone interbeds
		80 - 81'
82	87	Siltstone, medium grey, oxidized
87	91	Mudstone, medium grey, oxidized, carbonaceous
91	106	Sandstone, fine to medium grained oxidized, carbonaceous
		92.5 - 93.5 have interbedded mudstone and coal lenses
		coal lenses vary from 1mm to 2cm in thickness
		94.5 - 96
		103 - 103.5
106	108.5	Coal mainly clarain
108.5	116	Sandstone, medium grained, oxidized, thin laminations of mudstone and fine grained sandstone occur
		throughout the sequence.
116	135	Mudstone, dark grey, carbonaceous, oxidized
		119 - 120 have a medium grey, oxidized siltstone interbed.
		129 - 131
		133.5 - 134 coal interbed and is mainly clarain

Core Size

Hole No. D.D.H. 445

Page 1 of 8

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

RAD. LOG. intersections

63-79.5 coal with 1' & 1½ Partings.

16.5 (14) seam - 13

2507—N.D.N.

Utah Drill Geological Log

Objective: | Sampled:

Logged By: K. Heck | Date: 24/05/77 | Composites:

Block: | Sect.: | Place: Eagle Mtn. | App. Bear: | App.: Dip.: | Length:

From	To	Discard: Reason:
135	141	Siltstone, medium grey, carbonaceous, oxidized
		138.5 - 140.5 medium grained, oxidized sandstone interbed
141	157	Mudstone, dark grey, carbonaceous, oxidized
157	189	Siltstone, medium grey, carbonaceous, oxidized
		1mm - 3cm laminations of medium to coarse sandstone as well as mudstone occur continuously throughout
		the siltstone.
189	191	Mudstone, dark grey, carbonaceous, (oxidized zone ends)
191	214	Coal, clarain with vitrain bands
		disseminated pyrite leaves occur in the coal
		192 - 192.5 have a ½ ft. of mudstone.
214	219	Mudstone, medium grey, carbonaceous
		215 - 216.5 laminations of mudstone and fine grained sandstone
		218 - 218.5 coal, clarain
219	223	Siltstone, medium grey, carbonaceous, disseminated pyrity throughout the siltstone
223	226	Mudstone, medium grey, continuous and discontinuous coal lenses across the core, disseminated pyrite leaves
		throughout the mudstone
226	237	Coal, clarain with vitrain bands
237	250	Mudstone, medium grey, carbonaceous
		242 - 244' siltstone with mudstone laminations
250	258	Siltstone, medium grey, carbonaceous
258	279	Sandstone, medium grained, slightly carbonaceous
		258 - 263' gradational change from siltstone to fine to medium
		grained sandstone.

Core Size

Hole No. 445 Page 2 of 8

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

RAD. LOG. Intersections

192.5 - 213.5 coal
21' Seam-12

226 - 236.5' Coal
10.5' Seam-11V

2507—N.D.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: 25/05/77

Composites:

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mtn.			

From	To	Discard: Reason:
279	286	Sandstone, coarse grained, continuous and discontinuous coal lenses across the core from 282-286'
		sharp contact at 286 between coarse sandstone and mudstone
286	289	Mudstone, medium grey, carbonaceous
289	295	Siltstone, medium grey, carbonaceous
295	302	Sandstone, fine to medium grained, slightly carbonaceous, gradational changed from siltstone to sandstone.
302	306	Mudstone, medium grey, carbonaceous
306	351	Sandstone, fine to medium grained, slightly carbonaceous, 6" interbeds of mudstone approximately every 2 feet.
351	352	Mudstone, medium grey, carbonaceous
352	371	Coal, fusain and clarain
371	376	Mudstone and coal interbedded
		coal lenses are 1mm - 3cm thick
		373 - 375 coal, durain and fusain
376	381	Siltstone, slightly carbonaceous, medium grey, fine to medium grained, sand stone and mudstone laminations.
381	383.5	Mudstone, carbonaceous, highly fractured
383.5	416	Sandstone, medium grained, medium grained, carbonaceous
		391 - 392) trough x-bedding
		395 - 396)
		399 - 400 rip up clasts
		387 - 389.5 siltstone interbed

Core Size

Hole No. 445 Page 3 of 8

40 Scale.

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG. Intersections

351-360' Coal 9'
360-366' Shale & 366-369' Coaly Shale
366-369' Coal 3'
SEAM - 11

2507—N.D.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: 26/05/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mtn.			

From	To	Discard. Reason:
416	446	Sandstone, medium to coarse grained, carbonaceous
		416 - 422) Continuous and discontinuous coal lenses across the core
		441 - 442)
		422 - 426) trough x-bedding
		431 - 436)
446	509	Sandstone, fine grained, dark grey, carbonaceous laminations of mudstone and medium grained sandstone occur
		continually throughout the interval
		470 - 480 have trough x-bedding
509	516	Mudstone, dark grey, carbonaceous
516	537	Coal, clarain with vitrain bands
537	542	Siltstone, medium grey, carbonaceous
		541-541.5 coal, clarain
542	548	Mudstone, medium grey, carbonaceous
		545-548 coal, fusain with vitrain bands
548	579	Sandstone, fine grained, medium grey, carbonaceous laminations of mudstone and fine to medium grained sandstone
		occur continually throughout the interval
579	584	Coal, fusain and clarain
584	591	Mudstone, medium grey, carbonaceous

Core Size

Hole No. 445 Page 4 of 8

40 Scale

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG. Intersections

516.5 - 534' Coal 17.5'
SEAM 9

546-547.5 COAL 1.5'

578.5 - 582.5' Coal 4'

2507—N D.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: 27/05/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mtn.			

From	To	Discard: Reason:
		589 - 591' gradational contact between mudstone and underlying sandstone.
591	594	Sandstone, medium grained, laminations of mudstone and finer grained sandstone.
594	610	Siltstone, medium grey, slightly carbonaceous
610	623	Sandstone, medium grained, carbonaceous
		610 - 619 laminations of mudstone and finer grained sandstone
		619 - 623 salt and pepper sandstone texture
		sharp contact a 623' between sandstone and underlying mudstone.
623	635	Mudstone, carbonaceous
		625 - 626 coal, clarain
		631.5 - 632.5 coal, clarain
635	661	Sandstone, medium to coarse grained, slightly carbonaceous
661	672	Mudstone, dark grey, carbonaceous
		667 - 669' medium grained sandstone interbed
		gradational contact between mudstone and overlying sandstone.
672	676	Siltstone, dark grey, carbonaceous
676	777	Sandstone, medium grained, medium grey, carbonaceous gradational contact between sandstone and overlying siltstone
		707 - 721 Silty sandstone.

Core Size

Hole No. 445

Page 5 of 8

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

628 - 631.5 COAL 3.5'

2507—N O.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: 31/05/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mtn.			

From	To	Discard: Reason:
		(699 - 705 trough x-bedding
		(721 - 727
727	737	Siltstone, medium grey, carbonaceous
		777 - 780 gradational transition between siltstone and overlying sandstone
737	739.5	Mudstone, dark grey, carbonaceous
739.5	812	Coal, fusain with minor vitrain and clarain interbeds of mudstone 2 - 3 cm. thick occur periodically throughout
		the seam.
812	815	Mudstone, dark grey, discontinuous coal lenses across the core from 812 -
815	818	Siltstone, carbonaceous, medium grey, gradational transition to an underlying medium grained sandstone from 816-818
818	858	Sandstone, medium grained, medium grey, carbonaceous
		838 - 846 siltstone interbed
		831 - 836 trough x - bedding
		Mudstone and fine grained sandstone laminations throughout the interval
858	870	Sandstone, fine grained, gradational to siltstone from 867 - 870, carbonaceous
870	892	Coal, clarain and fusain, minor mudstone interbeds from 882 - 884'
892	897	Siltstone, medium grey, carbonaceous
		892.5 - 893) Coal, fusain
		895 - 896)
		896.5 - 897.5)

Core Size

Hole No. 445 Page 6 of 8

40 Scale

Color Plot & Dips | Cre Classes & A.er.

RAD. LOG Intersections

790 - 811 COAL with 1.5 Shale band at 794.5'
21 (19.5)' SEAM 7

870 - 890' COAL 20'
SEAM 5

2507—N.D.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: 1/06/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mtn.			

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
897	937	Sandstone, medium grained, medium grey, carbonaceous
		902 - 904)
		912 - 914) Trough x-bedding
		921 - 928)
		909 - 910)
		920.5 - 921) Coal, clarain and vitrain
		mudstone and fine grained sandstone parallel and x-laminations common throughout the interval.
937	939	Coal, clarain and vitrain
939	951	Siltstone, medium grey, carbonaceous 941.5 - 942) Coal, clarain with vitrain bands
951	993	Sandstone, medium grey, medium grained, carbonaceous
		969 - 972 trough x-bedding
		Fine grained sandstone and siltstone laminations common throughout the interval
993	996	Siltstone, carbonaceous
996	1097	Sandstone, medium grained, carbonaceous
		1044 - 1049 rip up clasts
		1038 - 1070 sandstone is very massive
		fine grained sandstone and siltstone laminations common throughout the interval
1097	1102	Siltstone, carbonaceous
1102	1108	Mudstone, carbonaceous

Core Size

Hole No. 445

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: 06/06/77

Composites:

Block	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mtn.			

From	To	Discard: Reason:
1108	1143	Coal, fusain and clarain
1143	1148.5	Mudstone, carbonaceous
		1146 - 1146.5 Coal, fusain with vitrain bands
1148.5	1171	Sandstone, medium grained, slightly carbonaceous
		1171 END OF D.H. 445

Core Size

Hole No. 445 Page 8 of 8

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

RAD. LOG, Intersections

1107.5 - 1131.5' COAL 24'

1135 - 1139.5' COAL 4.5'

SEAM - 4

2507—N.D.N.

Diamond Drill Geological Log

K-FOREDING 77(3)A

Objective:

Sampled:

320

Logged By: K. Heck Date: June 10, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

From	To	Discard: Reason:
0	11	Tricone
11	84	Sandstone, meduim grained, medium grey, carbonaceous, oxidized, highly fractured 61-82 X-bedded mudstone and fine grained sandstone laminations common throughout the interval
84	93	Siltstone, medium grey, carbonaceous, oxidized zone ends at 93'
93	93.5	Mudstone, dark grey, carbonaceous
93.5	113	Coal, clarain with vitrain bands
113	132	Mudstone, dark grey, carbonaceous, numerous ½ - 1" coal lenses, disseminated pyrite throughout the mudstone 120-122 siltstone interbed at 124.5 have a 1" band of pyrite mineralization
132	163	Sandstone, medium grey, medium grained, carbonareous mudstone and fine grained sandstone laminations common throughout the interval
163	171	Mudstone, carbonaceous at 170' have a 2" band of pyrite mineralization
171	188	Siltstone, medium grained, carbonaceous minor mudstone interbeds throughout the interval 183.5 - 184' and 187 - 187.5' pyrite mineralization
188	247	Sandstone, fine to medium grained, carbonaceous

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Core Size

Hole No. 448

2507—N D.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: June 13, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
		194 - 200' trough v - bedding mudstone and siltstone laminations scattered throughout the interval
247	251	Mudstone, dark grey, carbonaceous
251	273	Coal, clarain with vitrain bands
273	274	Mudstone, dark grey, carbonaceous
274	284	Sandstone, medium grained, carbonaceous, miner trough x - bedding
284	303	Siltstone, carbonaceous 292 - 294' mudstone, carbonaceous
303	306.5	Coal, fusain and clarain
306.5	308	Mudstone, dark grey, carbonaceous
308	356	Sandstone, meduim grained carbonaceous, light grey 315 - 320 and 340 - 350 trough X - bedding
356	360	Mudstone, black, carbonaceous
360	365	Siltsone, dark grey, carbonaceous
365	378	Sandstone, medium grained, carbonaceous, gradational contact between sandstone and overlying siltstone minor cross bedding throughout the interval
378	391	Coal, clarain and vitrain 385 - 387 mudstone interbed
391	399	Mudstone with numerous coal interbeds
399	405	Coal, clarain and vitrain
405	416	Mudstone, carbonaceous 408 - 412 siltstone interbed

Core Size

Hole No. 448 Page 2 of 5

2507—N.D.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: June 15, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

40 Scale.

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
416	448.5	Sandstone, fine to medium grained, carbonaceous
448.5	465	Sandstone, coarse grained, salt and pepper texture, carbonaceous 460 - 465 discontinuous coal lenses across the core
465	505	Siltstone, black, carbonaceous 469 - 471 and 476 - 477 fine grained sandstone interbeds
505	516	Sandstone, coarse grained, salt and pepper texture, carbonaceous 511 - 513 siltstone interbed 505 - 516 discontinuous coal lenses across the core
516	524.5	Siltstone, black , carbonaceous
524.5	549.5	Coal, clarain and vitrain
549.5	552	Mudstone, dark grey, carbonaceous
552	568.5	Siltstone, medium grey carbonaceous
568.5	607	Sandstone, fine grained, medium grey, carbonaceous 577 - 583 trough X - bedding
607	631	Siltstone, medium grey, carbonaceous 616 - 618 fine grained sandstone interbed 607 - 609 gradational contact between siltstone and overlying sandstone
631	635	Mudstone, dark grey, carbonaceous 630 - 631 gradational contact between mudstone and overlying siltstone
635	660	Coal, fusain and clarain
660	680	Siltstone, dark grey, carbonaceous

Core Size

Hole No. 448 Page 3 of 5

2507—N.D.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: June 16, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
		661. 5 - 663.5, 664 - 666.5, 670 - 671.5, and 674 - 676 coal interbeds, fusain and clarain
680	686	Sandstone, fine grained, carbonaceous
686	687	Mudstone, dark grey, carbonaceous
687	689.5	Coal fusain
689.5	694	Siltstone, dark grey, carbonaceous
694	717	Sandstone, fine grained, light grey, carbonaceous 701 - 703' possible fault indicated by pesence of slickenside striae 701 - 717' sandstone is highly fractured
717	782	Sandstone, medium to coarse grained, light grey, carbonaceous 717 - 764 sandstone is highly fractured 744 - 780 sandstone has salt and pepper texture 776 - 780 discontinuous coal lenses across the core
782	796	Sandstone, fine grained, dark grey, carbonaceous
796	823	Sandstone, medium grained, light grey, carbonaceous, trough X - bedding throughout the interval
823	829	Siltstone, dark grey, carbonaceous
829	830.5	Mudstone, dark grey, carbonaceous
830.5	869	Coal, clarain and fusain
869	873	Mudstone, dark grey, carbonaceous

Core Size

Hole No. 448 Page 4 of 5

2507—N.D.N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: K. Heck Date: June 17, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

40 Scale

Color Plot & Dips | Ore Classes & Assay

0

From	To	Discard: Reason:
873	878	Sandstone, fine to medium grained, light grey. D H 448 terminates at 878'

Core Size

Hole No. 448

Page 5 of 5

2507—N.D.H.

Diamond Drill Geological Log

Cominco

K - FORDING 77(3)A

320

Objective:

Sampled:

Logged By: Sidney Siska Date: June 6/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain	0	90	777 ft.

Discard: Reason: 0ft. 724 ft. 620° 89.5"

From	To	
0	13	TRICONE
13	33	Mudstone, with numerous thin (1-2 mm) COAL lamellea and silty interbeds, indensively wheathered and oxidized (FE Stains)
33	51	Mudstone, thinly interbedded with fine sandstone, cross and wavy lamellea of sandstone are about 0.10-1.0 cm. thick
51	52	Mudstone, black, lightly carbonaceous
52	75	Sandstone, medium grained, thinly parrallel and cross-laminated, occasional carbonaceous lamellea parallel to the bedding, massive.
75	76	Mudstone, carbonaceous, gradational contact with overlying sandstone, over 1 Ft. interval
76	78.5	COAL - mainly Clarain and Fusain
78.5	80	Mudstone, gradationally coarsening up into siltstone.
80	99	Siltstone, fine grained sandstone, thin interbeds, which parallel and wavey, occasional rip-up clast, generally massive.
99	119	Mudstone, dark grey, joints filled up with FE oxides
119	140	Mudstone, dark grey, carbonaceous, has several approximately 1 Ft. thick interbeds of coarse grained, parallel and cross laminated sandstone, which has both contacts with mudstone gradational, massive sandstone interbeds are at 127 - 128, 129 - 129.5, 134 - 135
140	142	COAL - mainly Clarain and Vitrain
142	143	Mudstone, black, carbonaceous
143	158	Mudstone with thin interbeds of silt, fine sandstone, these are wavy and parallel

Core Size

Hole No. 449

Page 1 of 4

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

RAD. LOG INTERSECTIONS

75 - 78.5 COAL - 3.5'

2507—N D.N.

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: Sidney Siska Date: June 6/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
158	172	Mudstone, carbonaceous, massive joints filled up with FE oxides stains.
172	178	Sandstone, medium grained, rip up clasts of mudstone, gradational contact with mudstone on both ends.
178	180	Mudstone, dark grey, carbonaceous, iron stains.
180	183	COAL
183	189	Mudstone, carbonaceous, massive
189	196	Siltstone, mudstone thinly parallel and wavy interbeds, sharp contact with mudstones.
196	197	Mudstone, carbonaceous
197	203	COAL - mainly Clarain and Fusain
203	216	Mudstone, interbedded with siltstone between 206 - 207 and 208 - 210, massive
216	224	COAL - Clarain and Fusain with Vitrain bands.
224	248	Mudstone, slitstone thinly, (1.0-2.0 mm.) interlaminated lamellea are parallel and wavy, is massive.
248	249	Siltstone, light grey, massive, sharp contacts
249	278	Mudstone, lightly carbonaceous, friable
278	313	Sandstone, fine grained, thinly parallel and wavy laminated, sharp contact with overlying mudstone
313	331	Siltstone, medium grey, massive, with occassional interbeds fine grained sandstone, gradational contact with underlying mudstone from 331 - 334.
331	348	Mudstone, black, lightly carbonaceous, friable
348	369	COAL - mainly Clarain with Vitrain bands.
369	372	Mudstone, black carbonaceous, massive
372	412	Sandstone, fine - medium grained, thin parallel and wavy laminations sporadic 34 filled either by Quartz or Coal, generally massive
412	490	Mudstone, black, massive. Silty and fine grained sandstone interbeds at 420-423) 433-436) 478-484) Show thin parallel & wavy laminations gradional contacts with mudstone.

Core Size

Hole No. 449 Page 2 of 4

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

RAD. LOG. INTERSECTION

197 - 202' COAL - 5'

215 - 222.5' COAL 7.5 (6)'
(1.5' Sample at 2[illegible])'

SEAM - 13

347.5 - 367.5 COAL 20 (17
(1, 0.5' & 1.5' Shale bands
at 350', 360.5' & 362.5')

2507—N O N.

Diamond Drill Geological Log

Consolidated

Objective:

Sampled:

Logged By: S. Siska Date: June 6/77

Composites:

Block: Sect.: Place: App. Bear: App.: Dip.: Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard. Reason:
490	505	COAL - mainly Clarain (12)
505	506	Mudstone
506	523	Sandstone, fine grained, thinly parallel and wavy interlaminated with argillaceous material, massive
523	543	Sandstone, medium grained, thinly parallel and wavy interlaminations of mudstone size particles, massive, sharp contact with underlying mudstone
543	574	Mudstone, black, carbonaceous, generally massive
574	582	COAL - mainly Clarain (114)
582	592	Mudstone, carbonaceous, massive
592	599	Siltstone, medium grey massive
599	604	Mudstone, carbonaceous, massive
604	612	Siltstone, slight grey, thin parallel laminations
612	621	Mudstone, lightly carbonaceous with occassional thin carbonaceous layers
621	630	Siltstone, light grey, thin parallel laminations
630	635	Mudstone, carbonate, massive
635	654	COAL - mainly Clarain and Fusain (11)
654	655	Mudstone, carbonaceous
655	663	Sandstone, fine - medium grained, thin parallel and wavy laminations
663	665	Mudstone, black, carbonaceous, massive
665	671	Siltstone, medium grey, massive
671	673	Mudstone, carbonaceous, massive, very gradational contact with underlying siltstone (contact 673 - 675)
673	675	Siltstone, medium grey, massive
675	691	Sandstone, fine - medium grained, thinly parallel laminated , sharp contact with underlying coarse grained sandstone.

RAD. LOG INTERSECTIONS
490 - 505 COAL 15'
SEAM 12

573.5 - 583' COAL 9.5'
SEAM-11u

634 - 652 COAL 18 (16')
(2' Parting at 645.5')
SEAM-11

Core Size

Hole No. 449 Page 3 of 4

2507—N.D.H.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: Sidney Siska Date: June 15/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
691	710	Sandstone, coarse grained, medium grey, parallel and wavy laminations, infrequent thin (approximately 1 mm.) coal laminations but massive, sharp contact with underlying mudstone
710	725	Mudstone, carbonaceous, massive
725	727	Gradational contact with overlying mudstone and underlying sandstone.
727	739	Sandstone, very fine graded, thinly laminated, massive
739	748	Mudstone, carbonaceous, massive with occassional aranaceous , approximately 4-5 inch interbeds
748	752	Siltstone, massive, slightly carbonaceous, gradational contact with overlying and underlying shale
752	762	Sandstone, fine - medium grained, thin parallel , wavy and cross-laminations, Sharp contact with underlain mudstone.
762	772	Mudstone, lightly carbonaceous, massive
772	777	COAL - mainly clarain with sparce Vitrain bands, some Fusain (PART SEAM - 9)
	777	END OF DDH 449 JUNE 15, 1977

Core Size

Hole No. 449 Page 4 of 4

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K. FORDINK 77(3)A.

320

Objective:

Logged By: K. Heck / S. Siska Date: May 5, 1977

Sampled:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

From	To	Discard: Reason:
0	10	Tricone
10	11'2"	Mudstone, black, indurated, finely lamintated
11'2"	12'3"	Mudstone, disintegrated, light grey to buff
12'3"	12'8"	Mudstone, black, faintly laminated
12'8"	13'2"	Mudstone, light grey to buff, disintegrated
13'2"	14'	Mudstone, dark grey to black, faintly laminated
14'	16'	Mudstone, light grey, disintegrated
16'	20'	Mudstone, black with thin light grey silt laminations
20'	25'	Mudstone, black with medium grey clay interlamella, bedding at 90 degrees
25'	45'	Mudstone, medium grey, faintly laminated (40' - 45' slightly carbonaceous)
45'	46'½"	Mudstone, black carbonaceous, bedding at 90 degrees
46'½"	67'6"	Coal, mainly vitrain and from 48'8" to 48'10" mudstone which is carbonaceous clarain (100% recovery) from 58'6" to 59' have carbonaceous mudstone.
67'6"	70'	Mudstone, dark grey, carbonaceous
70'	92'	Siltstone, medium grey, laminated and cross laminated
92'	102'6"	Siltstone, light grey, wavy laminations, rip up clasts occur from 92' - 93'
102'6"	106'	Mudstone, black, carbonaceous
105'	107'6"	Coal, mainly fusain with vitrain bands (100% recovery)
107'6"	111'	Mudstone, carbonaceous, black, 110'6" - 111' has rip up clasts

Core Size

Hole No. 461 Page 1 of 7

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Rad. Log. intersections

47 - 59.5' coal 12.5'
61 - 62' shaley coal
63 - 68' coal 5'
SEAM 13

2507—N.D.N.

Diamond Drill Geological Log

Cominco

Objective:

Logged By: K. Heck
S. Siska

Date: May 9, 1977

Sampled:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

From	To	Discard: Reason:
111'	113'	Coal, fusain with vitrain bands (100% recovery)
113'	120'	Mudstone, dark grey, carbonaceous
120'	125'	Siltstone, medium grey, thinly laminated
125'	138'	Mudstone, black, carbonaceous, contains thin coal lamellai
138'	139'	Coal, fusain with irregular vitrain bands
139'	150'	Mudstone, dark grey, contains numerous thin coal bands
150'	169'	Coal, mainly clarian (100% recovery)
169'	173'	Sandy siltstone, medium grey, thinly laminated, rip up clasts occur at 172'
173'	174'	Mudstone, dark grey, carbonaceous
174'	175'	Coal, mainly clarain (100% recovery)
175'	203'	Sandstone, fine grained, light grey, thinly laminated and cross - bedded
203'	227'	Sandstone, fine grained, light grey, thin wavy laminations, cross - bedded, slightly carbonaceous, lenses of carbonaceous matter are discontinuous across the core
227'	229'	Carbonaceous mudstone
229'	240'	Coal, mainly clarain with thin vitrain bands (100% recovery)
240'	249'	Mudstone, dark grey to black, numerous coal lenses ranging in thichness from 1-3 cm occur in the mudstone from 240' - 246'
249'	263'	Sandstone, fine grained, light grey, cross - bedded and laminated 1' thick carbonaceous siltstone occurs from 253' - 254'

Core Size

Hole No. 461

Page 2 of 7

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Rad. Log. Intersection

150.5' 168.5' coal 18'
SEAM - 12

230.5 240.5' Coal 10'
SEAM - 110

2507—N.D.N.

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: K. Heck / S. Siska Date: May 10, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

From	To	Discard: Reason:
263'	265'6"	Carbonaceous mudstone, numerous ½" thick coal lenses occurs from 263' - 265'6"
265'6"	278'	Sandstone, fine grained, cross bedded and laminated, light grey
278'	296'	Siltstone, light grey, 281' - 286' carbonaceous content increases
296'	302'	Sandstone, fine grained, light grey, parrallel laminations
302'	303'	Carbonaceous mudstone
303'	332'6"	Coal, mainly clarain with vitrain and durain bands carbonaceous mudstone occurs from 323'6" to 324' and 328' - 329' (100% recovery)
332'6"	341'	Sandstone, fine grained, light grey, contains parallel laminations
341'	349'	Mudstone, Black, carbonaceous
349	352	Siltstone, dark grey, carbonaceous
352	378	Sandstone, fine - medium grained, x-bedded, interbeds of dark grey siltstone
378	402	Mudstone, black, carbonaceous
402	412	Sandstone, fine grained, x-laminated, light grey, carbonaceous
412	421	Siltstone, carbonaceous, light grey, faintly laiminated
421	434	Sandstone, fine grained, x-laminated, wavey laminated
434	445	Siltstone, 441-442 sandstone, fine-medium grained sandstone x-bedded
445	450	Mudstone, black, carbonaceous
450	469	Coal, mainly Fusain and Clarain with Vitrain bands
469	513	Mudstone, carbonaceous, siltstone from 506-507 coal seam 509-510

Core Size

Hole No. 461 Page 3 of 7

40 Scale

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG. INTERSECTIONS

304 - 320.5' COAL 16.5'
323.5 - 327' COAL 3.5'
SEAM - 11

450 - 467' COAL 17'
SEAM 9

2507—N D N.

Diamond Drill Geological Log

Cominco

Objective:

Logged By: K. Heck S. Siska Date: May 12, 1977

Sampled:

Composites:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Block: | Sect.: | Place: | App. Bear: | App.: Dip.: | Length:

RAD. LOG. Intersections

From	To	Discard: Reason:
513	515	Sandstone, salt & pepper texture, fine - medium grained, carbonaceous
515	517	Siltstone, dark grey, carbonaceous
517	520	Mudstone, dark grey, carbonaceous
520	581	Siltstone, fine - medium grained, x-laminated, medium - light grey.
		from 526 - 528.5 siltstone interbed, dark grey, carbonaceous
		from 533 - 543 siltstone interbed, medium grey, carbonaceous
		from 559 - 570 coarse, grained sandstone.
581	582	Mudstone, dark grey, carbonaceous
582	602	Coal, fusain & clarain with vitrain bands
		588 - 590 Mudstone, black, carbonaceous
		593 - 595 Mudstone, black, carbonaceous
602	605	Mudstone, black, carbonaceous, 2 cm. thick coal layer at 604'
605	626	Siltstone, medium grey, carbonaceous
		605 - 610 occassional x-bedded sandstone
626	652	Sandstone, medium - light grey, carbonaceous slightly x-bedded
652	657	Siltstone, laminated, medium grey
657	659	Sandstone, coarse grained, discontinous coal lenses and rip-up clasts
659	664	Siltstone, laminated with medium grey interbeds of fine grained sandstone.
664	678	Sandstone, coarse grained, medium - light grey, 667-678 discountinous coal lenses across the core ranging
		from 0.1 - 1.0 cm. in thickness
678	704	Siltstone, light - medium grey, carbonaceous
		678 - 694 numerous interbeds of fine grained, light grey,
		x-bedded sandstone.

583' - 588' Coal 5'

595'-601' Coal 6'

SEAM - "MY"

Core Size

Hole No. 461 Page 4 of 7

Eagle Mountain

2507—N D N.

Diamond Drill Geological Log

Cominco

Objective:

Logged By: K. Heck, S. Siska Date: May 13, 1977

Sampled:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
704'	705'	Mudstone, carboneceous
705'	727'	Coal, mainly clarain with vitrain
727'	734'	Mudstone, carbonaceous
734'	738'	Coal, mainly clarain with minor vitrain and fusain
738'	749'	Mudstone, carbonaceous, dark, with coal lenses scattered throughout the core. The lenses range in thickness from 1 m.m. to 1 c.m.
749'	805'	Sandstone, fine to medium grained, medium grey, laminated and X- bedded throughout, carbonaceous
805'	820'	Mudstone, carbonaceous
820'	845'	Coal, clarain with minor amount of fusain, vitrain bands scattered throughout the seam
845'	850'	Mudstone, carbonaceous, 1-2 m.m. thick vitrain bands present in the mudstone.
850'	855'	Siltstone, medium grey, parallel laminations of fine grained sandstone present in the siltstone
855'	860'	Mudstone, carbonaceous 859'6" - 861' have a ½ foot coal seam
860'	864'	Siltstone, medium grey, slightly carbonaceous
864'	872'	Sandstone, medium to coarse grained, medium grey, X- bedded slightly carbonaceous
872'	879'	Sandstone, very fine grained, thinly laminated, carbonaceous
879'	881'	Sandstone, medium to coarse grained, light grey, X - bedded

RAD. LOG. INTERSECTIONS

705 - 727 Coal, with 2 one foo
bands at 712' and 719.22 (20)'
SEAM 7 734-737.5 Coal 3.5'

821-843 Coal 22' SEAM 5

Core Size

Hole No. 461

Page 5 of 7

2507—N D N.

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: K. Heck, S. Siska Date: May 15, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

From	To	Discard: Reason:
881'	883	Siltstone, medium grey
883'	884.5'	Sandstone, medium grained, medium grey, X-bedded.
884.5'	886.5'	Sandstone, very fine grained, medium grey, X - bedded, slightly carbonaceous
886.5'	888.5'	Coal, clarain with vitrain bands
888.5'	915	Mudstone, dark black, carbonaceous, numerous coal lenses ranging in thickness from ½ cm to 4cm 904' - 905' have a one foot coal seam
915	918	Siltstone, parallel laminations
918	1024.5	Sandstone, medium to coarse grained, medium grey, carbonaceous, X - bedded, gradational contact between the overlying siltstone and the sanstone from 917 - 919' 980 - 981.5' contains numerous rip clasts 981.5 - 983 coal lenses of 1 mm thick are discontinuous across the core
1024.6	1043	Siltstone, medium grey, fine grained sandstone interbeds occur continuously throughout the siltstone
1043	1051	Mudstone, dark grey, carbonaceous
1051	1095.5	Coal, mostly clarain and fusain with vitrain bands
1095.5	1096.5	Mudstone, dark grey, carbonaceous

Core Size

Hole No. 461 Page 6 of 7

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

RAD. LOG INTERSECTIONS

1051 - 1080' Coal 29'
1085 - 1089' Coal 4'
SEAM 4

2507—N.D.N.

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: K. Heck Date: May 17, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
		Eagle Mountain			

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
1096.5	1111.5	Siltstone, medium grey, slightly carbonaceous
1111.5	1119	Sandstone, medium to coarse grained, X - bedded 1115 - 1119 coarse, massive sandstone

Core Size

Hole No. 461 Page 7 of 7

2507—N D N.

Diamond Drill Geological Log

Cominco

K. FORDING 77(3)A

Objective:		Sampled:			320
Logged By: K. Heck / S. Siska	Date: 05/05/77	Composites:			
Block:	Sect.:	Place: Turnbull 0ft.	App. Bear: 0°	App.: Dip.: 89°	Length: 1132'

From	To	Discard:	Reason:
		591 ft.	190° 88½°
		1016 ft.	210° 85 3/4°
0	10	Tricone	
10	33'7"	Mudstone, light grey with wavy and lenticular laminations of light grey silt bedding at 50°	
33'7"	39'2"	Mudstone, black, carbonaceous	
39'2"	42'	Mudstone, dark grey to black with numerous, thin laminae of coal (mainly vitrain) bedding at 90°	
42'	51'3"	Sandstone, fine to medium grained, light grey, contains occasional carbonaceous laminae and lenses	
51'3"	51'9"	Bioturbated mudstone	
51'9"	66'	Sandstone, fine grained, light grey, contains parallel and wavy laminations of medium and coarse grained sand	
66'	73'	Sandstone, fine grained, light grey, contains coal lenses none continuous across the core	
73'	77'6"	Sandstone, medium grained, light grey, contains non-continuous coal lenses	
77'6"	78'	Sandstone, fine grained, numerous lenticular clay lenses	
78'	92'	Sandstone, medium grained, light, discontinuous lenses and lamella of coal across the core	
		89' ~ 90' have clay lenses	
92'	107'	Sandstone, medium grained, light grey, thinly, bedding at 65° laminated, shows salt and pepper texture	
107'	109'4"	Sandstone, medium grained, light grey, salt and pepper texture, discontinuous lenses of coal, pyrite, clay	

Core Size

Hole No. DDH-641
Turnbull

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507—N D.N.

Diamond Drill Geological Log

Cominco

Objective: 641 TURNBULL

Logged By: K. Heck, S. Siska

Date: 05/05/77

Sampled:

Composites:

Block: | Sect.: | Place: | App. Bear: | App.: Dip.: | Length:

From	To	Discard: / Reason:
109'4"	122'	Sandstone, medium grained, salt and pepper texture, thinly laminated shows cross-bedding
122'	126'	Sandstone, medium grained, medium grey
126'	128'8"	Sandstone, fine grained, discontinuous coal and clay laminations
128'8"	137'	Mudstone, medium grey, bedding at 60°
137'	139'	Sandstone, fine grained, medium grey, bedding at 50°
139'	144'	Sandstone, medium grained, medium grey, rip-up clasts occur at 140°
144'	171'	Sandstone, coarse grained, salt and pepper texture, thinly bedded, bedding at 60° ½cm. thick shale lenses occur at 162', 164', 166', 168', 169', 170'
171'	271'	Mudstone, medium to dark grey, two coal lenses of 3" and 6" thick occur at 173' and 174' possible thrust fault occurs at 205', from 243' to 253' minor fine grained sandstone interbeds of ½" to 3" thickness occur, bedding at 70° in sandstone interbeds
271'	289'	Siltstone, medium grey, thin parallel laminations
289'	293'6"	Mudstone, black, carbonaceous, 4" coal seam at 292'6"
293'6"	298'	Siltstone, medium grey, carbonaceous
298'	306'	Coal, mainly clarain
306'	310'	Mudstone, black, carbonaceous
310'	329'	Coal, mainly fusain and clarain
329'	331'	Mudstone, black, carbonaceous

Core Size

Hole No. 641 TURNBULL

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

RAD. LOG INTERSECTIONS

296 - 300 COAL 4'
307 - 324 COAL 17'
SEAM-7

2507—N D N.

Diamond Drill Geological Log

Cominco

Objective: K. Heck

Logged By: S. Siska Date: 11/05/77

Sampled:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
		1 1" coal seam at 229'6" and 1 4" coal seam at 230'
331'	342'	Mudstone, dark grey
342'	343'	Coal, durain with probable high ash content
343'	357'	Siltstone, medium grey, parallel laminations 347' - 350' contains lenses of fine grained sandstone. The sandstone shows cross-bedding and wavy laminations. The mud content increases moving stratigraphically downward.
357'	360'6"	Mudstone, dark grey, carbonaceous 3" coal seam at 358'
360'6"	389'	Coal, mainly clarain with vitrain bands carbonaceous mudstones occurs at 361'6" for 2" and at 363'6" for 2"
389'	397'	Mudstone, dark grey, carbonaceous, at 391' a 4" coal seam occurs, at 394' - 395' a 1" coal seam occurs and it is mainly clarain.
397'	400'	Siltstone, dark grey, thinly laminated
400'	424'	Mudstone, dark grey, carbonaceous, two 1' coal seams occur between 403'-404' and 405'-406' silt content increases between 419'-423'

Core Size

Hole No. 641
TURNBULL

40 Scale

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG. INTERSECTIONS

358.5 - 386 COAL SEAM-5 27.5'

2507—N O N.

Diamond Drill Geological Log

Cominco

Objective:

Logged By: K. Heck, S. Siska Date: 12/05/77

Sampled:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
424	442	Sandstone, fine grained, light grey, parallel laminations 430'-431.5 medium grained sandstone.
442	459	Coal, mainly clarain with minor vitrain, 444'6" - 445'6" mudstone, carbonaceous
		446' - 447 mudstone, carbonaceous
		Coal seam could be possible shear zone for major thrust fault
459	502	Mudstone, dark grey, carbonaceous
502	508	Siltstone, light grey, regular spacing of fine grained sandstone lenses throughout the siltstone.
508	522	Mudstone, dark grey, gradational change from siltstone to mudstone at 508'
522	541	Coal, mainly clarain with vitrain bands occurring in upper 5' of seam but absent in remaining part of the seam.
541	570	Siltstone, medium grey
570	588	Mudstone, carbonaceous, black, (Possible shearing zone as indicated by the slicken-side striae and
		587 - 587.5 Coal layer crushed up siltstone at 583')
588	603	Sandstone, fine - medium grained, x-bedded, slightly carbonaceous, light grey
603	610	Siltstone, dark grey, carbonaceous
		Mudstone, black, carbonaceous
610	624	Siltstone, medium - dark grey, thinly laminated in parts
624	634	Mudstone, black, carbonaceous

Core Size

Hole No. 641

40 Scale

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG. INTERSECTIONS

440.5 - 444.5'	COAL	4'
448-454.5	Coal	6.5'
519.5 - 538.5'	COAL	19'

2507—N O N.

Diamond Drill Geological Log

Cominco

Objective:

Logged By: S. Siska, K. Heck Date: May 15/77

Sampled:

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
634	685	Coal (R7) mainly clarain with fusain, very minor lamelae of vitrain
		655.5 - 659.5 Mudstone interbed, is fairly laminated.
		682.5 - 683.5 Distinct sphelulitic texture
685	698	Siltstone rifler interbeds of x-bedded medium- fine grained sandstone, slightly carbonaceous
698	709	Mudstone, black, carbonaceous
709	722	Siltstone, slightly carbonaceous
722	762	Sandstone, fine - medium grained, thinly laminated (x-laminated) with sparce lamalae of coal
762	766	Siltstone, medium grey, carbonaceous
766	767	COAL - Clarain and fusain
767	772	Mudstone, black, carbonaceous
772	777	COAL - clarain with vitrain bands
777	797	Mudstone, black, carbonaceous
		782 - 784 Coal - fusain) Coal interbeds ((787-790 - probable thrust fault due
		786 - 786.5 Coal - fusain) (to presence of slickenside
		789 - 790 Coal - durain , light ash content) (striae & glassy texture of coal.
797	824	Siltstone, carbonaceous, medium grey 807-808 interbed of x-bedded fine-medium grained sandstone
824	842	Sandstone, fine - medium grained, x-bedded, carbonaceous
842	849	Siltstone, medium grey, slightly carbonaceous 844.5-845 interbed of fine-medium sandstone.
849	851	Sandstone, fine - medium grey, slightly carbonaceous, medium grey.
851	862	Siltstone, medium grey, carbonaceous
		860 - 861 Sandstone interbed

RAD. LOG. INTERSECTIONS

632-653' COAL 20'

657.5' - 682.5' COAL 25

Core Size

Hole No. 641

2507—N O N.

Diamond Drill Geological Log

Cominco

Objective:		Sampled:				40 Scale
Logged By: S. Siska / K. Heck	Date: May 16/77	Composites:				Color Plot & Dips / Ore Classes & Aver.
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

From	To	Discard: Reason:
862	864.5	Sandstone, fine grained, carbonaceous
864.5	876	Siltstone, carbonaceous, parallel laminations
876	892	Sandstone, fine - medium grained, grey, parallel lamination, massive, slightly carbonaceous
892	894	Siltstone, medium grey, carbonaceous (Probable vertical fault due to presence of slickensides)
894	1024	Sandstone, medium - coarse grained, carbonaceous, light grey
		912 rip up clasts
		915 - 924 fine - medium grained
		936 - 942 *Coal lenses, 0.1 - 1.0 cm. thick, occuring approximately every 0.5 feet.
		*often discontinuing across the core.
		959 - 1015 Coarse grained sandstone
		987 - 997 Coal lenses, 0.1 - 1.0 cm. thick, often discontinuous across the core
1024	1043	Sandstone, thinly parallel lamination, coarse grained
1043	1052	Siltstone, carbonaceous, gradational contact between sandstone and siltstone
1052	1067	Siltstone, rip up clasts and mudstone interbeds.
1067	1084	Sandstone, fine - medium grained, massive, dark grey, slightly carbonaceous.
1084	1097	Sandstone, fine grained, carbonaceous, massive
		1080 - 1082 interbed of medium grained x-laminated sandstone
		1093 - 1095 interbed of medium grained x-laminated sandstone
1097	1102	Possible fault zone, Mudstone, carbonaceous, gradational contact with underlain sandstone, contain sandstone x-lam
1102	1115	Coal, mainly clarain and vitrain bands
1115	1121	Sandstone, fine grained, carbonaceous, wavy and x-lamination, coarsering up to
1121	1132	Sandstone, coarse grained, medium grey, massive, fractured
	1132	END OF THE DDH #641

RAD. LOG. INTERSECTIONS

nations

1100.5 - 1110.5' COAL 10'

SEAM R4

Core Size

Hole No. 641

Page 6 of 6

2507—N O.N.

Diamond Drill Geological Log

Cominco

K- Fording 77(3)A

320

Objective:		Sampled:				
Logged By: S. Siska	Date: May 17/77	Composites:				
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:	

From	To	Discard: Reason:
0	11	TRICONE
11	25	Sandstone, coarse grained, light grey, x-laminated, several 1-2 cm. thick coaly interlayers, oxidized
25	68	Mudstone, black, carbonaceous, oxidized
68	77	Siltstone, dark grey, oxidized
77	86	Mudstone, dark grey, partially oxidized
86	100	Mudstone, dark grey, with increasing content of silt rice particles, approximately 97 end of oxidized zone
100	113	Cyclic interlaminations of medium grained sandstone and mud, both varying in the thickness between 0.5-5 cm, gradually clarifying
113	152	Mudstone, black, carbonaceous
152	191	COAL, mainly Clarain and Vitrain 159 - 161 Mudstone interbed
191	209	Mudstone, black carbonaceous, 195 3 in. thick coal bed
209	214	Sandstone, fine to medium grained, medium grey, x-bedded
214	222	Mudstone, dark grey to black, carbonaceous
222	258	COAL, mainly Clarain with Vitrain bands
258	266	Mudstone, dark grey, carbonaceous
		261 - 262 Siltstone interbed
		264 - 264.5 interbed of COAL and the coal is Clarain with Vitrain bands

Core Size

Hole No. 642

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

Diamond Drill Geological Log

Cominco

Objective:			Sampled:		
Logged By: K. Heck Date: 18/05/77			Composites:		
Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

O

From	To	Discard: Reason:
266	271	Siltstone, dark grey, finely laminated
271	274	Mudstone, dark grey, carbonaceous
274	277	COAL, mainly Clarain with Vitrain bands
277	282	Mudstone, dark grey, carbonaceous, possible shear zone indicated by slickensides
282	284	Siltstone, medium grey, laminated
284	291	Mudstone, dark grey, carbonaceous, at 285' have a 2" lense of coal, 290.5' have a 4" lense of coal
291	295	Siltstone, medium grey, slightly carbonaceous
295	316	Sandstone, fine grained, medium grey.
		(Possible fault between 307 - 316 and is indicated by highly fractured zone and presence of slickensides)
316	318	Siltstone, medium grey, remnants of above fault zone as the siltstone is highly sheared and sheared zone contains abundant slickensides, siltstone also is highly carbonaceous
318	323	COAL, mainly durain, highly sheared, probable high ash content

Core Size

Hole No. 642

2597—N D.N.

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: K. Heck Date: 19/05/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
323	343	Silty snadstone, fine grained, carbonaceous
343	351	Mudstone, dark grey, carbonaceous
		8" coal lens from 345'6" - 345'10"
		5" coal lens from 350 - 350'5"
		Siltstone interbed from 348 - 349.5'
351	371	Sandstone fine grained, medium grey, carbonaceous
		Medium grained sandstone lens from 359 - 360.5'
371	371.5	Mudstone, dark grey
371.5	376	COAL, mainly Clarain and Fusain
376	386	Sandstone, medium grained, medium grey, carbonaceous, x-bedded and laminated
386	392	Mudstone, dark grey, carbonaceous, 387 - 388' have a 1 ft. coal lense and it is mainly Fusain
		Evidence of shearing throughout the mudstone
392	448	Sandstone, fine grained, medium grey, carbonaceous
		414 - 416' have a medium grained, x-bedded sandstone lens
		428 - 436' have a medium grained, x-bedded sandstone
448	453	Sandstone, medium grained, light grey, x-bedded, carbonaceous
(499	532	COAL)
		silt

Core Size

Hole No. 642

Page 3 of 6

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: S. Siska Date: May 20/77

Composites:

Block: Sect.: Place: App. Bear: App.: Dip.: Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

From	To	Discard: Reason:
448	453	Sandstone. (Done previously and given to Bill Shaw on May 18)
453	456	Sandstone, very fine grained, thinly parallel and wavy laminated.
456	462	Siltstone, dark grey, carbonaceous
462	472	Mudstone, black, carbonaceous 470 - 470.2 Coal interbeds thickness approximately 2 - 3 inches.
472	477	Siltstone, dark grey, with occasional sandy wavy or parallel laminations
477	499	Mudstone, black carbonaceous, occassional 1-2cm. thick Coal beds.
499	533	COAL, mainly Clarain with infrequent Vitrain interlaunders
		522-527 Section consists mainly of the Mudstone with Coal interbeds, 531-532 Spherulite texture on Coal.
533	534	Mudstone, siltstone gradational contact
534	535	Siltstone, dark grey, carbonaceous
535	537	Sandstone, very fine grained, parallel laminations, carbonaceous
537	541	Sandstone, fine - medium grained, carbonaceous laminations
541	553	Mudstone, dark grey 446 - 448 influx of aranacous material - Mudstone, sandstone, x-laminations
553	557	Gradational contact between Mudstone and very fine laminated sandstone.
557	584	Sandstone, medium grained, parallel laminations and occasional wavy laminations
584	586	Rip up clasts in medium grained sand
586	600	Sandstone, medium grained, parallel laminations
600	618	Siltstone, medium grey
618	622	Mudstone, dark grey
622	626	COAL, mainly Clarain and Fusain
NOTE: 605	655	This interval is highly fractured, contains on the average approximately 2 fractures/ft, mainly F1 and disrupted F4 with calcite infill.

Core Size

Hole No. 642 Page 4 of 6

2507—N. D. N.

Diamond Drill Geological Log

Cominco

40 Scale

Color Plot & Dips | Ore Classes & Aver.

Objective:

Sampled:

Logged By: S. Siska Date: May 23/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
626	627	Mudstone, dark grey
627	629	Sandstone, medium coarse grained, wavy and cross-laminated, massive
629	631	Mudstone, dark grey
631	647	Siltstone, medium grey 637 - 640 Sandstone interbed, medium coarse grained, wavy laminated
647	652	Sandstone, fine - medium grained, medium grey, numerous veins of calcite
652	663	Sandstone, medium - coarse grained, parallel laminations
663	665	Mudstone, highly carbonaceous, sheared
665	666	Mudstone, medium grey very sharp contact
666	672	Sandstone, coarse grained, thinly parallled laminated with irregular (approximately 3 - 7 mm thick) coal lenses
672	721	Siltstone, very sharp contact with overlying coarse sandstone, is massive and inbetween approximately 679-694, contains numerous healed (calcite infill) structures, F4, B4
		713 - 715 interbed of cross-bedded, massive sandstone, medium-coarse grained, has gradational contact with the siltstone
721	739	Approximately 2 - 4 inches thick layer of highly carbonaceous mudstone at 721
721	739	Siltstone, dark grey, massive, occassional irregularly spread thin (1.0 - 2.0 mm.) lamellae of coarser fractions.
763	771	Sandstone to siltstone, interlamellae massive gradational contact with underlying coarse grained sandstone.
771	794	Sandstone, coarse grained, massive, exhibit faint parallel laminations
794	828	Sandstone, coarse grained, numerous coal lenses (1 - 2 mm. thick) generally parallel with the bedding.
828	854	Sandstone, coarse grained, massive
		From 826 - 833 coal lenses // with bedding approximately every 3 - 4 inches.

Core Size

Hole No. 642

2507—N D N.

Diamond Drill Geological Log

Objective:

Sampled:

Logged By: S. Siska Date: May 24, 1977

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

40 Scale

Color Plot & Dips | Core Classes & Aver.

From	To	Discard: Reason:
854	858	Sandstone, coarse grained, massive, rip up clasts and numerous thin (1.0 - 2.0) coal lenses and lamellea, faintly laminated
858	875	Sandstone, medium - coarse grained, massive, no laminations at all
875	902	Sandstone, medium - coarse grained, massive, faintly laminated
902		Sharp contact, but the deposit retains its massiveness
902	947	Siltstone, massive, dark grey, gradually fining down, no Precisely delineate contact
947	966	Mudstone, dark grey, continuously fining down, massive
966	971.5	COAL, R7 (Sample was highly dissintegrated,) mainly Clarain and Vitrain
971.5	977	Mudstone, highly carbonaceous, massive) gradational contact
977	980	Siltstone, medium grey, massive)
980	997	Sandstone, medium - coarse grained, faintly laminated, massive, sharp contact with overlying siltstone.
	997	END OF DDH 642
		May 24/77

Core Size

Hole No. 642 Page 6 of 6

2507—N.D.N.

Diamond Drill Geological Log

Cominco

K- FORDING 71(3)A

320

Objective:		Sampled:			
Logged By: S. Siska	Date: May 26, 1977	Composites:			
Block:	Sect.:	Place: TURNBULL MTN.	App. Bear:	App.: Dip.:	Length: 982'

From	To	Discard: Reason:
0	23	TRICONE
23	36	COAL, (Seam 7), weathered and dissintegrated, mainly Clarain
35	46	Mudstone, carbonaceous, highly weathered, approximately 45' - 45.5' COAL
46	47	COAL, weathered and dissintegraded
47	71	Siltstone, mudstone, thinly interlaminated (1.0 - 2.0 mm thick layers of each fraction), weathered, and therefore dissintegrated, but unweathered massive
71	94	COAL, (Seam 5), mainly with infrequent layers (2.0 - 3.0 mm thick) of Vitrain
94	137	Mudstone, highly carbonaceous, fractured but otherwise massive, exhibits coarsening down throughout the total thickness.
		at 97' approximately 7 in. COAL
		at 98.5' approximately 3 in. COAL
		at 99.5' approximately 4 in. COAL
		at 102' approximately 5 in. COAL
		at 107' approximately 5 in. COAL
		at 108' - 110' COAL
137	149	Siltstone, very gradational contact with overlying mudstone, massive, medium grey
149	151	Sandstone, very fine grained, parallel and cross-laminated with overlying siltstone, massive
151	162	Siltstone, massive, medium grey, extremely gradational contact with underlying sandstone.
162	184	Sandstone, fine - medium grained, medium grey, massive, no laminations except for the internal 171-174, which has x-laminations
184	194	Sandstone, fine - medium grained, parallel, cross and wavy thin laminations common, well indurated and massive
194	211	Sandstone, coarse grained, parallel laminations, frequently (approximately every 1.5 ft.). Coal layers exist, thickness between 2.0 3.0 mm. Sharp contact with overlying fine - medium grained sandstone.

Core Size

Hole No. 643

Page 1 of 5

40 Scale

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG INTERSECTIONS

18-34.5 COAL 16.5' SEAM 7

71-94' COAL 23' SEAM-5

108-110' COAL 2'

2507—N.D.N.

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: C. Siska Date: May 28/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard:	Reason:
211	221	Sandstone, fine-medium grained, thinly parallel laminated, massive, well indurated, sharp contact with the overlying coarse grained sandstone at 211'	
221	234	Sandstone, medium-coarse grained, massive, no laminations, very well indurated, gradational contact between 220' - 222' with overlying laminated sandstone.	
234	249	Sandstone, fine grained, thin wavy laminations and microslump structures throughout the entire interval, less massive and contains numerous thin (0.5-1.0 mm) veins of calcite and quartz. Very sharp contact with overlying non-laminated sandstone.	
249	299	Siltstone, massive, medium grey, some thin parallel laminations of fine grained sandstone exist, gradational contact with sandstone. Mudstone, massive, carbonaceous, very gradational contact with overlying siltstone, contains COAL at 283.5' - 285', COAL at 286' 3 in. thick layer, COAL at 295', 5 in. thick layer	
299	330	COAL, mainly Clarain and Fusain (Seam 4)	
330	332	Mudstone, carbonaceous, massive	
332	335.5	COAL - mainly Clarain and Fusain (Seam 4)	
335.5	339	Mudstone, medium grey, massive, gradually changing into siltstone	
339	350	Siltstone, occassionaly very thinly x-laminated, medium grey, massive	
350	364	Sandstone, fine grained, very thinly laminated (X-laminations, parallel laminations and wavy laminations) massive but frequently (every, approximately 6 inches) core is disrupted along beddings	
364	374	Sandstone, coarse grained, thinly parallel laminated, massive, but approximately every 10" disrupted along a thin (0.5 mm) Coaly lamellea parallel to the laminations.	
374	387	Sandstone, medium grained, massive, no laminations, but frequent healed joints parallel to the core exists.	

Core Size

Hole No. 643

40 Scale

Color Plot & Dips	Ore Classes & Aver.

0

RAD. LOG INTERSECTIONS

302.5 - 321.5'	COAL 19'
326.5 - 328.5'	COAL 2'
SEAM 4	

2567—N O.N.

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: S. Siska Date: May 28/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
387	397	Sandstone, medium - coarse, with frequent rip up clasts and healed joints parallel to the core axis.
397	402	CORE MISSING (tube came off overshot)
402	408	COAL, mainly Clarain and Fusain, coal is highly disintegrated, no visible structure
408	410	Siltstone, medium grey with numerous calcite wire veins
410	413	COAL, mainly Clarain and Fusain, disintegrated, no structure
413	422.5	Mudstone, carbonaceous, massive, no carbonaceous interlamellea
422.5	423.5	COAL
423.5	429	Mudstone, massive, no coaly interbeds
429	430	COAL
430	432	Mudstone, carbonaceous, massive coaly interbeds
432	453.5	COAL, mainly Clarain and Durain
453.5	456	Mudstone, with numerous coaly interbeds.
456	457	COAL
457	472	Siltstone, mudstone interbeds, with numerous thin COAL lamellea; 462 - 463 COAL
472	475	Sandstone, fine grained, medium grey, thinly laminated, massive
475	485	Mudstone, highly carbonaceous, Coal interlamellae approximately every 3 - 4 inches.
485	503	COAL, mainly Clarain and Fusain (78-7)
	503	Very sharp contact with underlying mudstone
503	508	Mudstone, black, massive, no carbonaceous interbeds
508	512	Very fine sandstone, thinly laminated, massive, fining gradationally upward into siltstone.
512	517	Mudstone, carbonaceous, gradually changing into the COAL at 517

Core Size

Hole No. 643

Page 3 of 5

40 Scale

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG INTERSECTIONS

395.5 - 406' COAL - 10.5'

409.5 - 413.5' COAL 4'

432.5 - 453.5' COAL 21'

484.5 - 502.5' COAL 18'

2507—N.D.N.

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: S. Siska Date: May 30/77

Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:

From	To	Discard: Reason:
517	546	COAL, mainly Clarain and Fusain, occassional thin Vitrain bands (7R-7)
546	549	Sandstone, very fine grained, medium grey, massive non-laminated
549	552	COAL, mainly Clarain and Fusain
552	601	Mudstone, fine siltstone interbeds, each approximately 2 ft. thick, with numerous coal inter-lamellea, approximately every 1 ft. massive, occassional wavy laminations in the siltstone
601	603	Siltstone, massive, sharp contact with the overlying Mudstone
603	618	Sandstone, fine grained, thinly parallel laminated, massive, gradational contact with Siltstone
618	634	Siltstone, medium dark grey, massive, gradational contact with both underlying and overlying sandstone
634	653	Sandstone, fine - medium grained, thinly parallel laminated, massive
653	666	Sandstone, coarse grained, thinly parallel laminated, massive
666	693	Sandstone, coarse grained, massive, no laminations
693	703	Sandstone, coarse grained, with numerous rip up clasts of diameter 0.5-1.0 in. these contain mainly silt size particles, the interval is massive.
703	713	Sandstone, coarse grained, thinly faintly laminated, massive
713	715	Sandstone, coarse grained, with numerous rip up clasts, diameter approximately 0.5 - 3.0 cm.
715	736	Sandstone, coarse grained, massive, not laminated, numerous thin veins of no uniform orientations
736	743	Sandstone, coarse grained with silt size rip up clasts, partially incorporated in the sandstone matrix and leaving the same orientations as the sandstone beddings, massive, no laminations
743	780	Sandstone, coarse grained, massive From 751 - 760 thin and numerous , approximately 2 mm thick lamellea of COAL
780	834	COAL (7R-4) with siltstone - mudstone interbeds at 813' 1 ft. 822' 1 ft. 830' 1 ft. 833' 1 ft.

Core Size

Hole No. 643

Page 4 of 5

40 Scale

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG. INTERSECTIONS

516.5 - 544.5' COAL 28'

548 - 551' COAL 3'

SEAM R5

778 - 806' COAL with 2' Shale parting at 796'

28 (26)'

822.5 - 828.6 COAL 6'

SEAM R4

Diamond Drill Geological Log

Cominco

Objective: | Sampled:

Logged By: S. Siska | Date: June 3/77 | Composites:

Block: | Sect.: | Place: | App. Bear: | App.: Dip.: | Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

RAD. LOG. INTERSECTIONS

From	To	Discard: Reason:
834	840	Siltstone, dark grey, massive but disrupted by numerous B-4)gradational contact
840	846	Sandstone, fine grained, medium grey, massive
846	921	Sandstone, coarse grained, faintly thinly laminated, massive, no laminations
		907 - 914 highly carbonaceous section, numerous B-4 (COAL) every 3 - 4 inches.
921	927	COAL, mainly Clarain and Fusain
927	936	Sandstone, medium grained, with numerous thin coaly interbeds (approximately 1-2 mm. thick every 4-5 inches)
936	942	COAL, mainly Clarain and Fusain
942	982	Sandstone, coarse grained, massive, salt and pepper texture, faintly laminated in places
	982	END OF DDH 643
		JUNE 3/77

921.5 - 925 COAL 3.5'
SEAM R2

935 - 941.5' COAL 6.5'
SEAM R1

Core Size

Hole No. 643 Page 5 of 5

2507—N.D.N.

K. FERDINK 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/SEAM BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
0					TRICONE						
5											
10											
11											
		J1	F	5	1						
		J1	F,B	20	1						
		BA	B	55	1				10/48	5/48	
		J1	F,B	15	1						
		B1	W	90	1						
15	15										
		B1	B	55	1						
		J1	B	20	1				28/60	5/60	
		B1	B	90	1						
		B1	B	70	1						
20	20	J4	W	20	1						
		J1	F,B	15	1				4/60	2/60	
25		B1	B	90	1						

LOGGED BY: K. Heck

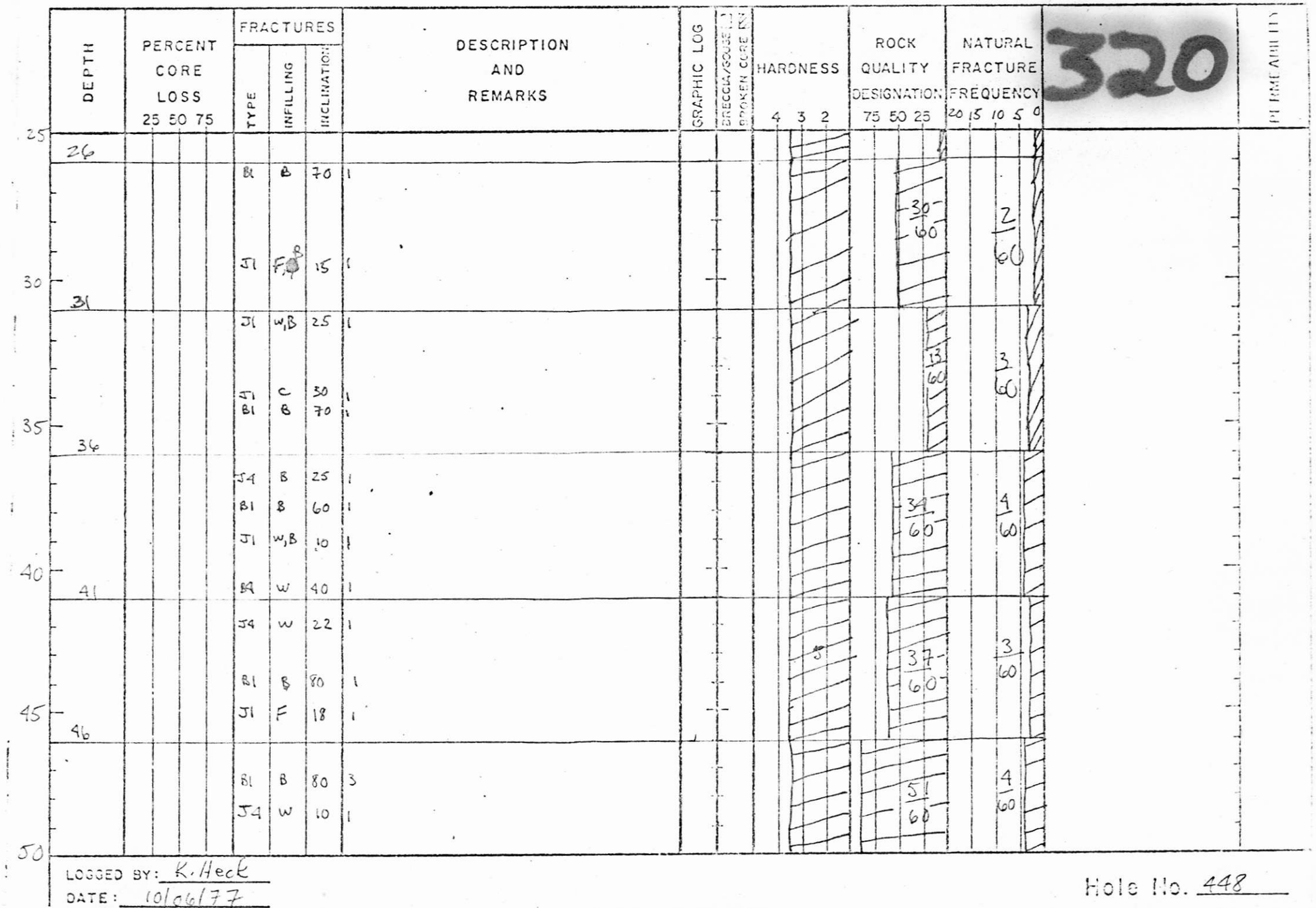
DATE: 10/06/77

Golder Associates

Hole No. 448

SHEET ___ OF ___

K-FORDING 77(3)A



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DATE: 10/26/77

Hole No. 448
SHEET ____ OF ____

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
50											
51											
		B1	B	70	1				36/60	3/60	
		J4	W	0	1						
55		J1	B	30	1						
56											
		J1	F	35	1				39/60	5/60	
		J4	C	0	1						
		B1	B	90	1						
60		B4	W	85	1						
61		B4	W	65	1						
		J4	F,W	20	1				44/60	5/60	
		J4	W	10	2						
		J1	W	15	1						
65		B1	W	55	1						
66											
		B1	B	80	1				46/48	1/48	
70	70										
		J1	F	15	1				44/60	3/60	
		B1	F,B	80	1						
75	75	J1	C	15	1						

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DATE: 10/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BREAKAGE/DISSOLUTION/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
75											
75		J4	F,W	5	1						
		J1	B	10	1						
		B1	B	65	1						
		B4	W	60	1				43/60	4/60	
80											
80		J4	B	30	1				48/60	1/60	
85											
85		B1	B	60	1						
		B1	B	60	1				60/60	2/60	
90											
90		J1	B	15	1						
		B1	B	70	1						
		J1	F	30	1				24/60	3/60	
					Coal begins at 93.5'						
95	100% recovery										
95											
	100% recovery	J1		40	1				21/60	2/60	
		J1		45	1						
100											

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Hole No. 448

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSEL BROKEN CORE ETC	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
100											
100	100% recovery	J1		50	1				5/60	1/60	
105											
105	100% recovery	J1		35	1				15/42	1/42	
108.5											
110	100% recovery	J1		36	1				24/60	1/60	
113.5					Coal ends at 113'						
115		J1	F	40	1				6/60	1/60	
118.5											
120		J1	B	5	1				12/54	5/54	
		J4	B	10	2						
		J1	M,W	14	1						
123		J1	W	15	1						
125		J4	W	10	1				28/60	3/60	

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DATE: 10/06/77

Golder Associates

Hole No. 448

SHEET ___ OF ___

K-FORDINE 71(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUND / BROKEN CORE PC	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
125		J1	C	30	1						
		D4	W	90	1						
128											
130									24/60	3/60	
		J1	B	0	1						
		J1	B	40	1						
133		J1	C	10	1						
135		B1	B	75	1				52/60	2/60	
		J1	C	20	1						
138											
140		BA	W	70	1				54/60	2/60	
		B1	B	80	1						
143											
145		B1	B	90	1					3/60	
		J1	C	15	1						
		J4	W	70	1						
148											
150		J1	C	30	1				41/60	3/60	
		J1	C	0	1						

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DATE: 10/06/77

Golder Associates

Hole No. 448

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / SEAM / BROKEN ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
150											
153		B1	W	90	1						
155		J1	C	15	1				45/60	3/60	
		J4	C	28	1						
158		B1	B	75	1						
		B1	W	65	1						
		J1	C	5	1						
160		B1	W	80	1				56/60	4/60	
163		J4	W	15	1						
		J1	B	25	1						
165		B1	B	85	1				19/60	4/60	
		J1	B	20	1						
168		J1	B	0	1						
		J1	B	20	1						
170									33/60	2/60	
173		B1	B	80	1						
		J1	B	40	1				28/60	3/60	
175		J1	C	25	1						

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DATE: 13/06/77

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Hole No. 448

SHEET ___ OF ___

K. Fording 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOLUBLE/BROKEN CORE ETC.	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
175											
178		J4	W	15	1						
180		J1	W,B	40	1				27/60	3/60	
		B1	B	70	1						
183		J1	C	10	1						
185		J1	W	20	1				23/60	2/60	
		J1	C	30	1						
188											
190		J1	B	25	1				39/60	5/60	
		J1	B	10	1						
		B1	B	85	1						
		J1	C	5	1						
193		B1	B	90	1						
195		J4	W	5	1				37/60	2/60	
		B1	B	90	1						
198											
200		B1	B	80	1				50/60	3/60	
		J4	W	10	1						

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DATE: 13/06/77

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Hole No. 448
SHEET ___ OF ___

K. FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SHEARED/BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
200		BI	B	85	1							
203												
		JI	W	5	1					3/60		
205		BI	B	70	1				31/60			
		JI	C	40	1							
208												
		BI	B	80	1							
210		BI	B	80	1				50/60	3/60		
		BI	B	80	1							
214												
215		BI	W	90	2							
		JI	W	5	1				37/60	4/60		
		JI	W	10	1							
219												
220		JI	B	15	1							
		BI	B	80	1				27/60	4/60		
		JI	B	20	1							
		JI	W	5	1							
224												
225												

LOGGED BY: K. Heck
DATE: 13/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K. FORDING 7/3/A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSEL	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
225		Bl	B	90	1							
		Bl	W	75	1							
		Jl	C	25	1					35/72	5/72	
230		Bl	B	65	1							
		Jl	W	20	1							
		Jl	W	20	1							
		Bl	B	80	1					44/60	3/60	
235		Bl	B	90	1							
		Jl	B	40	1					26/48	2/48	
		Jl	C	40	1							
240		Bl	B	75	2					52/60	4/60	
		Jl	C	30	1							
		Bl	B	80	1							
245		Jl	C	0	1					37/60	4/60	
		Bl	B	70	2							
		Jl	C	40	1							
250												

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DATE: 13/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K-FRADING 77(3)F

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORE LOSS/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
250		JI	C	35	1						
	100% recovery	BI	C	65	(Coal begins at 251'				15/60	2/60	
254											
255	100% recovery	JI		50	1				15/60	2/60	
		JI		20	1						
260	100% recovery	JI		20	1				9/60	1/60	
265	100% recovery								26/60	0/60	
270	100% recovery				Coal ends at 273'				12/60	0/60	
275											

LOGGED BY: K. Heck
DATE: 13/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K-FORDING 77(3)

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORE BROKEN CORE PIECES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
275											
279		J1	C	20	1				44/60	1/60	
280		J4	C	35	1				49/60	2/60	
284		J1	C	15	1						
285		B9	B	75	1				50/60	3/60	
		B1	B	80	1						
289		J1	C	20	1						
290		J1	C	5	1				20/60	2/60	
294		B1	B	90	1						
295		J4	W	10	1				45/60	3/60	
299		B1	B	80	1						
		B1	B	80	1						
300											

LOGGED BY: K. Heck
DATE: 15/06/77
PROJECT No.

Golder Associates

Hole No. 448
SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FRACTURE/BROKEN CORE INT	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
300		J1	B	30	1				27/60	1/60	
					Coal begins at 303						
304	100% recovery										
305					Coal ends at 306				40/72	1/72	
310		B4	B	50	1						
310		B1	B	60	1				54/60	1/60	
315		B4	W	60	2				44/60	2/60	
320	320										
		B1	B	60	1				60/60	2/60	
		J1	C	40	1						
325	325										

320

LOGGED BY: K. Heck
DATE: 15/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K-FORDINK. 77(3)N

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	CREEKA/SQUEEZE/FROZEN CORE (%)	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
325		J1	B	30					57/60	3/60	
		J1	C	20							
330		J4	W	15							
		J1	C	40					49/60	3/60	
		B4	B	90							
335		B1	B	60							
		J4	W	0					53/60	3/60	
		B1	B	80							
340		J1	C	10							
		B1	B	70					60/60	4/60	
		B4	W	50							
		B4	W	60							
345		B1	B	70							
		J1	C	20					45/60	2/60	
		B1	B	70							
350											

LOGGED BY: K. Heck
DATE: 15/06/77

Golder Associates

Hole No. 418
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
350		J1	C	20	1						
355		J1	C	20,0	2				33/60	5/60	
		B1	B	80	1						
		J4	C	16	1						
		B1	B	60	2				22/60	3/60	
360		J4	B	30	1						
		B1	B	60	2				38/60	4/60	
		B1	B	60	1						
365		J1	B	40	1						
		J1	C	40	1				39/60	2/60	
370		J1	C	25	1						
		B4	W	55	1				48/60	2/60	
375		B1	B	60	1						

LOGGED BY: K. Heck
DATE: 15/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/ BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
375		J4	C	10	1				33/60	1/60		
					Coal begins at 378'							
380	100% recovery											
		J1		15	1				28/60	2/60		
	100% recovery											
385		J1		45	1							
		B4	W	80	1				14/60			
	100% recovery	J1		22	1							
		J1		10	1							
390					Coal ends at 391'				30/60	4/60		
	100% recovery											
		B4	W,B	60	1							
		B1	B	80	1							
		B4	W	70	1							
395		J1	B	35	1							
									16/60	1/60		
		J1	B	15	1							
					Coal begins at 399							
400	100% recovery											

LOGGED BY: K. Heck
DATE: 15/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PLEASE ANNOTATE
400											
400	100% recovery	J1		20	1				10/60	1/60	
405					Coal ends at 405'						
405		B1	B	75	1				36/60	3/60	
		J1	C	5	1						
410		B1	B	70	1						
410									51/60	2/60	
415		B1	B	60	1						
415		J1	B	15	1						
420		J1	B	15	1				33/60	2/60	
420		B1	B	60	1						
425		J1	C	5	1				58/60		
425		B1	B	70	1						
		B4	W	0	2						

LOGGED BY: K. Heck

DATE: 15/06/77

Golder Associates

Hole No. 448

SHEET ___ OF ___

K. FORDING 77/3k

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SHEARED/BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
425		B1	W	70	1				60/60	1/60	
430		J1	C	50	1				56/60	4/60	
		J1	C	10	1						
		J4	W	0	2						
435		J1	B	4	1				38/60	2/60	
		B1	B	70	1						
440		B1	B	80	1				28/72	4/72	
		J1	C	20	1						
445		B4	W	90	1						
446		J1	C	10	1						
		J1	B	18	1				33/60	1/60	
450											

LOGGED BY: K. Heck
DATE: 15/06/77
PROJECT NO.

Golder Associates

Hole No. 448
SHEET ___ OF ___

K - FORDING 77(3)b

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSSURE / BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
450												
451												
		B1	B	90	1				53/60	2/60		
455												
456		J1	C	23	1							
		J4	C	18	1							
		B1	B	75	1				45/60	4/60		
		J1	C	10	1							
460												
461		B1	B	70	1							
		J1	C	20	1							
		J1	C	10	1				36/60			
		B1	B	75	1							
465		B1	B	65	1							
466												
		~~J1~~	~~C~~	~~35~~	1							
		~~J1~~	~~C~~	~~0~~	1				53/60	0/60		
		~~J1~~	~~C~~	~~20~~	1							
470												
471												
		J1	C	35	1							
		J1	C	0	1				46/60	3/60		
		J1	C	20	1							
475												

LOGGED BY: K. Heck
DATE: 15/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SHEARED/BROKEN CORE ZONES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
475												
476												
		J1	C	20	1				50/60	2/60		
480		J1	B	25	1							
481												
		B1	B	85	1				18/60	2/60		
485		J1	B	50	1							
486												
		J4	C	25	1				51/60			
490		J1 J4	B W	20 5	1 1							
491												
										0/60		
495												
496												
		B1	B	60	2				42/60	3/60		
500												

LOGGED BY: K. Heck
DATE: 15/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K. Fordink 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
500											
501		J1	B	25	1						
									19/72	0/72	
505											
507											
		B1	B	50	1				46/60	2/60	
510											
512		J1	B	30	1						
		J1	B	0	1						
		B1	B	65	1				50/60	3/60	
515											
517		J1	C	10	1						
		B1	B	80	1				35/48	1/48	
520											
521											
		J4	W	8	1				43/60	1/60	
525					Coal Begins at 524.5						

LOGGED BY: K. Heck
DATE: 15/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K. FORDING 71(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/ROUGE / BROKEN CORE ETC	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	FT FOR ANALYSIS
525											
526	100% recovery										
	100% recovery								19/60	0/60	
530											
531											
	100% recovery	J1		55	1				12/60	2/60	
535		J1		50	1						
536											
	100% recovery	J1		40	1				4/60	1/60	
540											
541											
	100% RECOVERY	J1		20	1				0/60	2/60	
545		J1		10	1						
546											
	100% RECOVERY	J1		35	1				0/36	2/36	
549		J1		20	1						
550											

LOGGED BY: K. Heck
DATE: 15/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K. FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
550												
552	100% RECOVERY	34	B	90	4 END OF CORE				0/36	4/36		
		B4	B	90	2							
		B4	B	85	3				15/60	0/60		
555		B1	B	90	2							
557		J1	B	60	1							
560		34	B	85	2				60/72	2/72		
563												
565		34	B	90	2							
		J4	C	40	1				54/72	8/72		
		34	C	60	3							
569		J4	W	5	2							
570		34	B	90	2				50/60	6/60		
		J4	O	40	1							
		34	B	50	3							
574												
575		J1	B,F	20	3					F&B		

LOGGED BY: S.S.
DATE: June 15 '77
PROJECT No.

Golder Associates

Hole No. 448
SHEET ___ OF ___

K-formline 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUND, BROKEN CORE ETC.	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
575		J4	WB	10	2						
		B4	B	60	2				60/72	7/72	
580											
		B4	B	~90	4				54/60	4/60	
585											
		J4	W	60	1				56/60	2/60	
		J4	C	60	1						
590		B4	B	~80	2				50/60	4/60	
		B4	B	90	2						
595		B4	B	90	1				54/60	5/60	
		B4	W	65	1						
		B4	B	85	3						
600											

LOGGED BY: S.S.

DATE: June 15/77

Golder Associates

Hole No. 448

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORE LOSS BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
600		J4	w/g	0	3				50/60	6/60	
		J1	c	70	1						
		B4	B	90	2						
605		J4	C	40	1				45/60	4/60	
		B4	B	90	3						
610		B4	B	80	2				55/60	3/60	
		J4	D	50	1						
615		J4	W	60	3				55/60	5/60	
		B4	WB	80	2						
620		J4	W	45	1				55/60	6/60	
		B4	WB	75	2						
625		B4	W	~75	3						

LOGGED BY: J.S.

DATE: June 15/77

Golder Associates

Hole No. 44P

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
625		34	W	35	1			60/60	1/60	
630										
		D4	B	80	1			22/60	4/60	
		34	D	70	2					
635		34	B	85	1					
		34	B	90	8					
		J4	45		1			10/60	10/60	
		B4	90		1					
	100% RECOVERY	J1	60		3					
		J1	60		2					
640		J1	80	50	2					
		J4		40	1			30/60	6/60	
	100% RECOVERY	J4		40	2					
		J1		50	1					
645										
		J1		30	1				10/60	
	100% LOSS	J4		20	1			0/24		
		B4		80	2					
		J1		25	1					
650		J4		60	1					

COAL 635 - 660

LOGGED BY: S.S.

DATE: June 15/77

Golder Associates

Hole No. 448

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLINGS	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
652		B4		80	1				0/84	19/82	
		B4		85	2						
		J4		60	1				8/60	9/72	
	50% LOSS	J1		20	1						
		J1		30	1	COAL 635-660					
		J4		60	1						
657		J1		45	2						
		B1		80	3				0/36	9/36	
	100% Recovery	J4		85	3						
660		J1		45	2						
		B4	B	80	2						
		J4	C	80	5	COAL 661.5 - 663.5			24/72	9/72	
		B4	B	75	1						
666		B4	B	85	1	COAL 664 - 666.5					
									30/60	3/60	
		J4	B	80	3						
671						COAL 670 - 671.5					
									30/69	4/60	
		B4	B	90	1						
		J4	C	60	3	COAL 674-676					

LOGGED BY: S.S.

DATE: June 15/77

Golder Associates

Hole No. 448

SHEET ____ OF ____

K. FORDING 77(37A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / SEAM / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5 0	PERMEABILITY
675 676											
		Bl	B	90					33/60	2/60	
680 681		Bl	B	80							
		J9	C	0					46/60	9/60	
		J1	C	10							
		Bl	B	90							
685 686		J1	w/B	40							
		~~J1~~	~~B~~	~~15~~					0/60	0/60	
690 691		~~J1~~	~~B~~	~~0~~							
		J1	B	15					0/60	2/60	
695 696		J1	B	0							
		Bl	B	45					46/60	2/60	
700		Bl	B	70							

LOGGED BY: S.C.

DATE: June 15/77

Golder Associates

Hole No. 448

SHEET ___ OF ___

K - FORDING 77 (3)

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
700												
701		J1	W	10	1							
		J1	W	0	1					32/60	1/60	
		J1	W	0	1							
705		J1	W	15	1							
706		J1	C	45	1							
		J1	C	15	1					30/60	3/60	
710		J1	W	15	1							
711		J1	W	40	1							
		J1	W	30	1					44/60	7/60	
		J1	C	0	2							
715		J1	C	45	1							
716		J1	C	10	2							
		J1	C	5	2							
		J1	C	20	1					15/60	8/60	
		J1	C	20	1							
		J1	C	5	1							
720												
721		J1	C	5	3							
		J1	C	5	2					11/60	3/60	
		J1	C	40	1							
725												

LOGGED BY: K. Heck
DATE: 17/06/77

Golder Associates

Hole No. 448
SHEET ___ OF ___

K-FORDENE 77(3)K

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	CORE BREAKAGE (1) BROKEN CORE (2)	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
725											
726											
		J1	W	45	1						
		J1	W	30	1						
		J1	B	30	1						
730											
731		J4	C	50	2						
		J4	C	10	3						
		J1	W	25	1						
		J4	C	20	2						
735											
736											
		J1	WB	10	1						
		J1	W	20	1						
		J4	C	5	3						
		J1	W	0	1						
740											
741											
		J4	C	5	2						
		B1	B	70	3						
		B	B	70	2						
		J4	C	0	1						
745											
746		J1	C	15	1						
		J4	C	10	2						
		J1	C	20	1						
750											

LOGGED BY: K. Heck

DATE: 17/06/77

Hole No. 448

SHEET ... OF ...

K. FORDING 77(3)h

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS
750		B1	B	40	1	
		J1	C	10	1	
		J1	C	50	1	
754		J1	B	10	1	
755		J1	C	10/20	2	
		J1	C	25	1	
		J1	C	10	2	
760	761					
		J4	C	30	1	
		J1	C	5	1	
765	766					
		J1	C	20	1	
		J1	C	10	1	
		J4	C	0	1	
770	771					
		B1	B	90	1	
		J1	C	30	1	
775						

GRAPHIC LOG | CORE BREAKS (/) BROKEN CORE (X)

HARDNESS 4 3 2

ROCK QUALITY DESIGNATION 75 50 25

NATURAL FRACTURE FREQUENCY 20 5 10 50

0/84 | 5/84 | 24/60 | 2/60 | 19/60 | 3/60 | 51/60 | 3/60

PERMEABILITY

LOGGED BY: K. Heck.

DATE: 17/06/77

Hole No. 448

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	CALCITE/QUARTZ FILLED BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
776												
		B1	B	90	1					42/60	2/60	
780 781		J1	C	30	1							
		J4	W	40	1							
		B1	B	70	1					52/60	3/60	
		B1	B,W	80	1							
785 786												
		J4	W	0	1					47/60	3/60	
		B1	B	70	1							
790 791		B1	B	70	1							
		B1	W,B	80	1					53/60	2/60	
		B1	B	80	1							
795 796												
		J.	C	20	1					55/60	3/60	
800		B1	B	80	1							

LOGGED BY: K. Heck
DATE: 17/06/77

Hole No. 448
SHEET ___ OF ___

K. Fording 77(3)

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SQUEEZE/BROKEN CORE ZN	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
800											
801		J1	W	30	1						
		J4	W	5					56/60	2/60	
805											
806		J4	W	10	1						
		J4	W	20	1				55/60	2/60	
810											
811		J4	W	20	1						
		J4	W	20	2				52/60	1/60	
		B1	B	7.5	1						
815		J4	W	10	1						
816											
		B1	B	80	1				49/60	2/60	
		J1	C	20	1						
820											
821											
		J4	C	5	1				46/60	1/60	
		B1	B	75	2						
		J1	C	10	1						
825											

LOGGED BY: K. Heck

DATE: 17/06/77

Hole No. 448

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SQUEEZED BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
825											
826											
		J1	B	80	2				22/36	2/36	
829											
830					Coal begins at 830.5'						
	100% recovery	J1		30	2				13/60	2/60	
834											
835	100% recovery	J1		30	2.				9/60	2/60	
839											
		J1		40	1						
840	100% recovery								0/60	2/60	
		J1		30	1						
844											
		J1		40	1						
845	100% recovery	J1		30	1				0/60	2/60	
849											
850		J1		40	1						

LOGGED BY: K. Heck
DATE: 17/06/77

Hole No. 448

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
850										
852		31		40				0/60	2/60	
855								0/48	0/48	
858										
860								0/48 0/60	0/60	
863										
865								9/60	0/60	
868										
870								14/60	0/60	
873										
875								60/60	9/60	

LOGGED BY: K. Heck
DATE: 17/06/77

Hole No. 448

K. FORDING 77(3)

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE/CRUSHED ROCK	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
876											
878										0/60	
					End of D.H. 448 at 878 ft.						
880											

LOGGED BY: K. Heck
DATE: 17/06/77

Hole No. 448

SHEET ____ OF ____

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CRUSHED/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5	PERMEABILITY
5					TRICONE						
10		B1	F	80	2						
		B1	F	60,80	2				20/60	6/60	
		B1	C	80	1						
15		B1	C	80	1						
16											
		J3	F	40	1				34/60	5/60	
		J4	F	0	1						
		J1	F,W	40	1						
20		B1	F	80	1						
21		B1	C	80	1						
		J1	W,A	20	1				47/60	3/60	
		J4	W	40	1						
		J4	C	20	1						
25											

LOGGED BY: S. SISKA

DATE: MAY 20/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K-FOLDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA ZONE / BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 100 85 10 5 0	PERMEABILITY
25											
26		J1	W	0	1						
		J1	C	20	1				33/60	4/60	
		J1	W	40	1						
30		J1	W	0	1						
31											
		J1	W	30	1				35/60	3/60	
35		J1	F	10	1						
36		D1	C	0	1						
		B1	B	75	1				24/60	3/60	
		J	W	5	1						
40		B1	B	90	1						
41											
		J1	W	30	2				36/60	7/60	
		J1	C,F	65	2						
45		J1	C	15	2						
		B1	C	90	1						
46											
		J1	F	15	2				24/60	4/60	
50		B1	B	85	1						

LOGGED BY: S.SISKA

DATE: MAY 20/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/JOINT/BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
50											
51		J1	WF	30	1						
		J1	B	80	1				3/60	3/60	
		J1	F	30	1						
55		J1	B	80	1						
56		J1	F	40 20	3				39/60	5/60	
		J1	F	0 40	2						
60											
61		J1	C	15	1						
		B1	W	90	1				12/60	3/60	
		J1	F	0	1						
					Coal begins						
65	100% recovery										
66		J1		45	1				6/60	1/60	
	100% recovery										
70											
71											
	100% recovery	J1	F	0	1				8/60	1/60	
75											

320

LOGGED BY: S. SISKA
DATE: MAY 20/77
PROJECT No.

Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BREC./SOAKET / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
75												
76												
	100 90 recovery	J1	F	0	1				0/72	1/72		
80					End of coal							
		J4	F	10	1							
		J1	F	30	2				41/60	54/60		
85		J4	F	22	1							
	87	B1	C	80	1							
90		J1	C	5	1				20/60	2/60		
	92	B1	B	85	1							
95		J1	F	10	1				9/60	2/60		
	97	J1	F	30	1							
		J4	W/F	0	1				19/48	3/48		
		J4	C	15	1							
100		J1	F	15	1							

LOGGED BY: K. Heck

DATE: 24/05/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
100					
101					
		J4	B,F	35	1
		J4	F	30	2
105					
106					
	100% recovery				Coal starts
					Coal ends
		J1	F,B	30	1
110		J4	W,F	5	4
111					
		J4	W,F	35	2
		J4	W,F	75	1
115					
116					
		J4	C	30	1
		J4	F	50	1
		J4	F	0	1
120					
121					
		J4	F	0	1
		J1	B	40	1
		J4	C	35	1
		J1	F	35	1
125		J1	B,F	0	1

GRAPHIC LOG | BRECCIATED / BROKEN CORE | HARDNESS 4 3 2 | ROCK QUALITY DESIGNATION 75 50 25 | NATURAL FRACTURE FREQUENCY 20 15 10 5 0 | PERMEABILITY

26/60 | 3/60 | 10/60 | 5/60 | 30/60 | 3/60 | 30/60 | 3/60 | 22/60 | 5/60

LOGGED BY: K. Heck
DATE: 24/05/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
125											
126											
		J4	C	0	1				15/60	2/60	
130		J1	F	0	1						
131											
		J1	F	45	1				17/60	2/60	
135		J1	B,F	45	1						
136											
		J1	W,F	10	1				50/60	4/60	
		B1	W	50	1						
140		J4	F,W	25	2						
141											
		J1	B,F	25	1				28/30	2/60	
145		J1	B,F	0	1						
146											
		J1	F	5	1				34/60	3/60	
150		J4	W	0	1						

LOGGED BY: K. Heck
DATE: 24/05/77
PROJECT No.

Golder Associates

Hole No. 445
SHEET ___ OF ___

K - FORDING 77/3/A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE RUN	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
150 151		J1	C	10	1							
		J1	C	30	1							
		B1	B	65	2							
		J4	C	0	1							
		J4	W	2.5	2					30/60	8/60	
		J4	W,B	0	1							
155 156		J4	W	5	1							
		J1	W,F	10	1							
		J4	W,F	10	1							
		J4	W	50	2					40/60	7/60	
160 161		J4	W,F	10	3							
		J1	W,F	15	1							
		J4	W,F	10	2					27/60	7/60	
		J4	F	10	1							
		J4	W,F	15	2							
165 166		J1	F	0	1							
		J1	C	20	1					52/60	3/60	
		J4	W	10	1							
170 171		J4	F	0	1							
		J1	W,F	0	1					36/60	3/60	
175		B1	W	80	1							

LOGGED BY: K. Heck.

DATE: 24/05/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOAPSTONE/BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
175		J1	C	0	1						
176											
		J4	W	0	1				44/60	3/60	
180		J1	C	15	1						
181		J1	F	20	1						
		J1		50	1						
		J1		10	1				30/60	4/60	
185		J2		10	2						
186											
		J4	W	0	1						
		J1	C	5	1				27/60	5/60	
		J1		15	1						
190		J1	C	15/45	2						
191											
	100 90 recovery	J1	F	20	1	Coal starts			21/60	2/60	
195		J1		30	1						
196											
	100 90 recovery	J1		45	1				0/48	1/48	
200											

LOGGED BY: K. Heck
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Golder Associates

Hole No. 445
SHEET ___ OF ___

K - FORDING 77 (3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
200											
200	95% recovery	J1		40	1			0/48	1/48		
204											
205	100% recovery	J1		45	1			7/8	2/8		
209		J1		10	1						
210	100% recovery	J1		0	1			17/60	1/60		
214					End of coal						
215		J4	C	5	1			25/60	4/60		
218		J1	W,M	22	1						
220		B1	W	55	1			30/60	4/60		
		B1	W	90	1						
		J1	C	0	1						
223		B1	W	90	2			12/60	3/60		
225											

LOGGED BY: K. Heck
DATE: 25/05/77

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Hole No. 445
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K- Fordings 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SEAM / BROKEN CORE ETC	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
225		J1		50 1	coal starts						
228	100 % recovery										
		J1		25 1					20/60	2/60	
230	100 % recovery	J1		30 1							
	100 % recovery								17/60	1/60	
235		J1		40 1							
238					coal ends						
									42/60	3/60	
240		J1	F	25 1							
243		J4	F	20 2							
		J1	F	10 1					39/60	2/60	
245		J1	F	18 1							
248											
		J1	F	35 1					38/60	3/60	
250		J1	F	0 1/							

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K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSEL BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
250											
253		J1	W,F	5	1						
255		J1	F	45	1				36/60	2/60	
258		J1	W,F	0	1						
260		J1	B	10	1				36/60	3/60	
		J4	C	0	1						
263		J1	F	14	1						
265		J1	C	0	1				48/60	3/60	
268		J1	F	0	1						
		J1	W,F	4	1						
270		J4	C	0	1				51/72	1/72	
274											
275											

LOGGED BY: ~~ZSF~~ K. Heck
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Golder Associates

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SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
279		J1	C	0	1			43/60	1/60	
284		J1	B,F	15	1			17/60	3/60	
		J1	W,F	5	1					
		J1	B	5	1					
289								29/60	9/60	
295		J1	F	25	1			36/72	1/72	
300		B1	W	80	3			40/60	4/60	
		B1	W	90	1					

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Golder Associates

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SHEET ___ OF ___

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPH LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
300		B4	C	80	1						
		B1	W	70	1			26/40	4/66		
		B1	W	90	1						
		BA	W	45	1						
305	305										
		B1	F	60	1			50/72	2/72		
		J4	F	5	1						
310											
	311										
		J1	C	20	1						
		J1	F	30	1			30/60	1/60		
		J4	W	0	1						
		S1	F	40	1						
315											
	316										
		J4	W	36	1			58/72	2/72		
		J4	W	15	1						
320											
	322										
		J1	W	10	1			42/48	2/48		
325											

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K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	RECOVERED SOLID CORE %	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
325											
326		B4	W	90	1						
		J4	W	0	1						
		J4	W,F	12	1				48/60	5/60	
		J4	W,F	12	2						
330		J1	W,F	10	1						
331											
		J4	F	10	1				55/60	1/60	
335											
336											
		B1	W	65	1						
		J4	W,F	5	2				48/60	4/60	
340											
341		J1	W	5	1						
		J4	W	50	1				42-/48-	2/48	
345	345	J1	F	0	1						
		J1	F	20	1				14/60	3/60	
		J1	F	5	1						
350	350	J1	F	10	1						

LOGGED BY: K. Heck.
DATE: 26/05/77
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Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5 0	PERMEABILITY
350		J9	F	5	1					
		J1		45	1 — Coal starts —			30/36	2/36	
353	100% recovery									
	100 90 recovery	J1		45	1			0/60	2/60	
358		J1		30	1					
	100 90 recovery	J1		0	1			9/36	2/36	
361		J1		30	1					
		J1		40	1			9/60	1/60	
364								10/60	0/60	
371					End of coal					
		B1	W	60	1			1/60	1/60	

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SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	CORE/HOLE DIAMETER	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
375 376											
		J4	C	0	1				40/60	2/60	
380 381		J4	C	5	1						
		J1	B	10	1				15/60	8/60	
		J4	F	30	1						
385 386		J1	F	15	1						
		B1	W	65	1				27/60	3/60	
		J1	C	40	1						
390 391		J1	W	8	1						
		J1	W	35	1				55/60	4/60	
		J4	C	5	2						
395 396		J1	W	10	1						
		J1	C	20	1				45/60	2/60	
400		J4	C	12	1						

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SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	CASING SHOE FROM SURFACE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
401											
		J1	C	20	1						
		J1	C	12	1				32/60	5/60	
		B1	F	90	1						
		J4	B	14	1						
405		J1	W	0	1						
406											
		J4	C	80	2						
		J4	W,F	25	1				50/60	6/60	
		J4	B	10	1						
410		J4	W	12	2						
411											
		J4	C	0	1					1/60	
415											
416											
		J4	W	0	1				32/60	2/60	
		J4	W	10	1						
420											
421											
		J4	W,F	0	2				40/60		
425											

LOGGED BY: K. Hecks

DATE: 24/05/77

Golder Associates

Hole No. 495

SHEET ___ OF ___

K- FRDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/CRUSHED CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
425 426											
		J1	C	30	1				44/60	1/60	
430 431											
									60/60	0/60	
435 436											
									57/72	0/72	
440 442											
		J1	C	15	1				16/18	3/18	
		J4	W	0	1						
445 446		J1	B	0	1						
		B4	B	55	1				39/60		
		J1	W/F	5	1						
450		J1	C	14	1						

LOGGED BY: K. Heck
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K- FOR DING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5 0	PERMEABILITY
451										
		B1	B	60	1			39/48	2/48	
455		J1	C	15	1					
		J4	W	0	2			50/60	4/60	
		J1	C	5	1					
460		J1	C	25	1			47/60	2/60	
		J1	C	10	1					
465		J1	C	10	1			39/60	3/60	
		J1	C	5	1					
		J4	W	0	1					
		B1	W	60	1					
470		J1	W	35	1			38/60	2/60	
475		J4	W	10	1					

LOGGED BY: R. Heck
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K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
475										
		J4	3	0	2			45/72	4/72	
		J1	C	5	1					
480		J1	B	0	1					
	481									
		J4	3	8	1			54/60	3/60	
		J4	C	5	1					
485		J4	3	0	1					
	486									
		J1	C	10	1			53/60	2/60	
		J4	3	5	1					
490	491									
		J4	3	5	1			30/60	4/60	
		J1	C	8	1					
		J4	3	5	1					
495	496	J1	C	40	1					
		J1	C	50	1			38/60	2/60	
		J1	F	20	1					
500										

LOGGED BY: K. Heck

DATE: 27/05/77

Hole No. 445

K - Fordinga 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	CORE LOSS / BROKEN CORE (CLASTICS / ROCKS)	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
501												
		J1	C	10	1					48/60	3/60	
		J1	C	15	1							
505		B1	B	85	1							
506												
		B1	B	70	1					41/60	1/60	
510												
511												
		J1	C	30	1					40/60	2/60	
		J1	B	45	1							
515												
516						Coal starts at 516'						
	100 90 recovery	J1		50	1					4/60	2/60	
		J1		50	1							
520												
521												
	100 90 recovery	J1		45	1					6/60		
		J1		55	1							
525												

LOGGED BY: K. Heck
DATE: 27/05/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K - FORDING 1763A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE ETC	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
526											
	100% recovery	J1		50	1				10/60	2/60	
531		J1		12	1						
	100% recovery	J1		46	1				18/60	1/60	
536											
	100% recovery				Coal ends at 537						
		B1	B	80	1				29/60	2/60	
541		J1	C	0	1						
		J1	B	60	1				16/60	2/60	
546		J1	B	40	1						
		B1	W	70	1				35/60	1/60	

LOGGED BY: K. Hecks

DATE: 27/05/77

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Golder Associates

Hole No. 445

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K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / SEAM / BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
551											
		J1	C	30	1				42/60	3/60	
		J4	C	35	1						
555		J1	C	10	1						
556											
		J1	W	0	1				39/60	3/60	
		J1	W	35	1						
560											
561		J1	W	25	1						
		J1	W	5	1				49/60	5/60	
		J4	C	12	2						
565		J4	C	10	1						
566		J1	C	10	1						
		J4	C	50	1				34/60	3/60	
		J1	C	10	1						
570		J1	C	20	1						
571											
									58/96	4/96	
		J1	C	25	1						
575											

LOGGED BY: K. Heck
DATE: 27/05/77
PROJECT No.

Golder Associates

Hole No. 445
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE ETC BROKEN CORE ETC	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
575		J1	C	5	1						
		J1	C	5	1						
579		J1	C	8	1						
580	95% recovery	J1		15	coal starts at 579' 1				0/60	2/60	
584		J1		20	'Coal ends at 584'						
585		J1	B	0	1				46/72	1/72	
590		J1	C	10	2				58/60	2/60	
595		J1	C	0	1				30/60	3/60	
		J9	C	18	1						
600		J9	C	0	1						

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DATE: 30/05/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SEAM/CLAY	BROKEN CORE ISH	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
600		J4	C	15	1							
		J1	C	10	1					32/60	4/60	
		J1	C	10	1							
605		J1	C	5	1							
		J1	C	0	1					42/60	3/60	
		J1	C	0	1							
610		J4	W	0	1							
		J4	C	0	1					55/60	3/60	
		J1	C	0	1							
		J1	C	5	1							
615		J1	C	10	1					41/60	3/60	
		J1	B	25	1							
620		J4	W	5	1							
		J4	B	10	1					44/60	1/60	
625												

LOGGED BY: K. Heck

DATE: 30/05/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K - FORCOING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	ERRATIC/SHEARED/BROKEN CORE ZONES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
625	100% recovery				coal starts at 624						
		B1	W	75	coal ends at 626 1				17/60	1/60	
630											
	100% recovery				coal starts at 631.5				28/60	3/60	
		B1	W	85	coal ends at 632.5						
635		J1	W	0	1						
		J4	W	0	2				39/60	4/60	
		J1	W	10	1						
		J1	C	22	1						
640		J1	C	5	1				47/60	6/60	
		J1	W	15	1						
		J1	C	10	1						
		J4	C	25	2						
645		J1	C	0	1						
		J4	C	8	3				50/60	7/60	
		J1	C	40	1						
		J4	C	0,35	2						
650		J1	C	30	1						

LOGGED BY: K. Heck

DATE: 30/05/77

PROJECT No.

Golder Associates

Hole No. 445

SHEET ____ OF ____

K-FORDING 72(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SEAM/BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
650		J1	C	15	1						
		J4	C	20	1						
		J1	C	35	1				55/72	4/72	
655 656		J1	C	10	1						
		J1	W	10	1				54/60	6/60	
		B4	W	90,75,45	3						
660 661		B4	W	45,30	2						
									50/60	1/60	
665 666		J4	C	5	1						
		J4	C	10	2				39/60	4/60	
		J4	C	35	1						
670 671		J1	C	15	1						
		J1	B	20	1				39/60	2/60	
675		J1	C	0	1						

LOGGED BY: K. Heck
DATE: 3d/05/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
675											
676											
		J4	C	0	2						
		J1	C	15	1				44/60	4/60	
680		J1	C	20	1						
681											
									52/60	1/60	
685		J1	C	25	1						
686											
		J1	C	10	1				19/36	1/36	
689											
690		B4	B	70	1						
		B4	B	55	1						
		J4	C	20	1				42/84	6/84	
		B1	W	75	1						
		J1	C	34	1						
695		J4	C	22	1						
696											
		J4	C	5	1						
		J4	C	70	1				48/60	4/60	
700		J4	C	18	1						

LOGGED BY: K. Heck
DATE: 30/05/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
700										
701		J1	C	10	1					
		J1	C	0,20	2			55/60	2/60	
705										
706										
		B1	B	70	3			47/60	3/60	
710										
711										
		J1	C	5	1			45/60	3/60	
		J1	C	20	1					
715										
716										
		J1	W	30	1			34/60	2/60	
		B1	B	80	1					
720										
721										
		J4	W	40	1			36/60	2/60	
		J1	W	10	1					
725										

LOGGED BY: K. Heck

DATE: 31/05/77

Golder Associates.

Hole No. 445

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA, ROBBLE, BROKEN CORE, ETC.	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
725 726											
		J4	C	15	1				39/60	6/60	
		J4	W	20	4						
730 731		B1	B	80	1						
									40/60	2/60	
735 736		B1	W,B	70	2						
		J1	W	5	1				33/60	1/60	
740 741											
									51/60	1/60	
745 746											
		J1	C	5	1				40/60	2/60	
		B1	B	75	1						
750											

LOGGED BY: K. Heck
DATE: 31/05/77

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Hole No. 445
SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLINGS	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BROKEN CORE / CORE RQD	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
750											
751											
		B1	B	75	1				42/60	1/60	
755											
756											
		J1	B	30	1						
		B1	B	65	1				31/60	5/60	
		J1	C	10	1						
760		J4	C	5	1						
761		J1	C	10	1						
		J1	C	15	1						
		J4	CW	0	1				45/60	4/60	
		J1	C	8	1						
		B1	B	65	1						
765											
766											
		B1	B	85	1				41/60	3/60	
		B1	B	90	1						
770		J1	C	12	1						
771											
		J4	W	7	1				58/60	3/60	
775		B1	B	90	1						

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Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COBBLES/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
775											
776		J4	W	30	1						
		J4	W	10	1				50/60	3/60	
		B1	B	90	1						
780 781											
		J4	W	15	1				50/60	2/60	
		J1	C	15	1						
785 786											
		B1	W	90	1				16/60	3/60	
		B1	W	85	2						
					Coal starts at 789.5'						
790 791	100% recovery										
	100% recovery	J1		45	1				4/48	2/48	
		J4		20	1						
795											
	100% recovery	J1		40	1				0/120	1/120	
800											

LOGGED BY: K. Heck
DATE: 31/05/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE/BROKEN CORE ZONES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
800											
805	100% recovery								0/120	1/120	
805	100% recovery	J1		45	1				0/60	1/60	
810											
810	100% recovery				Coal ends at 812'				21/60	1/60	
815		B1	W	45	1						
815		J4	B	5	1				31/60	4/60	
		B4	W	60	2						
820		J1	B	5	1						
820		J1	C	30	1				32/60	6/60	
		B1	W	90	1						
		J1	B	20	1						
		J1	C	30	1						
825	825	B1	W	90	15 2						

LOGGED BY: K. Heck
DATE: 31/05/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	ELEVATION
825										
		B1	3	65	1			36/72	2/72	
830		J1	3	0	1					
831										
	10% core missing	B1	B	90	2			50/60	3/60	
835		B1	3	75	1					
836										
840										
		B1	3	75	1			43/96	2/96	
		J1	C	0	1					
849										
845										
		J4	W	12	3			47/60	6/60	
		B1	W,B	60	1					
		B1	B	50	1					
849		J1	C	5	1					
850		J1	B	25	1					

LOGGED BY: K. Heck
DATE: 1/06/77

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Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
850		J1	B	25	1				27/60	4/60	
		J1	C	10	1						
854		J1	C	0	1						
855		J1	B	45	1				15/60	4/60	
		J1	B,M	20	1						
859		B1	B	80	2						
860		J1	B	30	1				30/60	4/60	
		J4	C	0	1						
864		B1	B	90	2						
865		B1	B	90	1				29/60	5/60	
		B1	B	90	2						
		J4	w,B	40	1						
869		B1	B	80	1						
870					Coal starts at 870'						
	100 90 recovery								15/60	2/60	
874		J1		45	2						
875											

320

LOGGED BY: K. Heck
DATE: 1/06/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COBBLE/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
875											
879	100% recovery	J1		38	1				0/60	1/60	
880	100% recovery								0/60	0/60	
884											
885	100% recovery	J1		45	2				10/60	2/60	
889											
890	100% recovery				Coal ends at 892				13/60	3/60	
894		J1	B	10	1						
		B1	B	90	1						
		J4	W	5	1						
895		B1	B	80	1				38/60	2/60	
899		J1	B	50	1						
900		J1	W	15	1						

LOGGED BY: K. Heck
DATE: 1/06/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SHEARED/BROKEN CORE ZONES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
900												
904	10% core missing									33/60	1/60	
905	20% core missing	J4	C	0	1					43/60	1/60	
909						↕ 1 ft. coal 909-910'						
910		J4	C	10	1					35/60		
		B1	B	90	1							
914		B1	W	70/85 60	3							
915		J4	W	0	1					43/60	4/60	
		B1	B	80	2							
919		J1	B	30	1							
920										60/60	0/60	
924												
925		J4	W	5	1							

LOGGED BY: K. Heck
DATE: 11/06/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FROING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SHEARED/BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
925		B1	B	70	1				46/60	4/60	
929		B1	B	65	2						
930		B1	B	80	2				35/60	3/60	
934		B1	B	70	1						
935		B4	W	90	1				26/36	3/36	
		J1	C	15	1						
937		B1	B	60	1						
					Coal begins at 937						
		B4	B	75	1 —— Coal ends at 939				53/84	3/84	
940		B1	B	80	1						
949		J1	B	40	1						
945		B4	B	90	1				38/60	4/60	
		B1	B	65	1						
949		B1	B	70	2						
950											

LOGGED BY: K. Heck

DATE: 1/06/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5 0	PERMEABILITY
950		J1	C	0	1				45/60	1/60	
954											
955		J4	W	10	1				44/60	4/60	
		J1	C	40	1						
		B1	B	90	1						
959		J1	C	35	1						
960									47/60	2/60	
		B1	B	85	1						
964		J1	B	50	1						
965		B1	B	75	1				55/60	2/60	
		B1	B	65	1						
969											
970		J4	C	0	1				50/72	3/72	
		B4	C	75	1						
975		B4	C	75	1						
976											

LOGGED BY: K. Heck
DATE: 2/06/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K - FORDING 77/370

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORE (%) SHOWN CORE (%)	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	FRACTURE ABILITY
975		J4	C	0	1						
		B1	B	70	1				57/60	3/60	
		BA	C	70	1						
980	986										
		B1	B	65	1						
		J4	W	5	2				56	7	
		J4	W	15	2				72	72	
985		J4	W	0	2						
	986										
		B4	W	90	1						
		J4	W	15	1				52/60	2/60	
990	991										
		J1	W	58	1						
		J1	W	0	1				36/60	9/60	
		J1	W	48	1						
995		J1	W	20	1						
	996										
		B1	W	35	1						
		B1	B	60	1				49/60	5/60	
		J4		10	2						
1000											

LOGGED BY: K. Heck

DATE: 2/06/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FRACTURE/BEDDING/JOINT BROKEN CORE ETC.	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY ≥3 1.5 1.0 .5 <.5	PERMEABILITY
1000											
1001		J4	W	0	1						
		B1	B	90	1					2/60	
1005		B1	B	80	1						
1006											
		J1	W	30	1				58/60	5/60	
		J4	W	10	2						
		J1	W	5	1						
1010											
1011		B1	C	80	1						
		B1	B	90	1				58/60	2/60	
1015		B1	B	90	1						
1016											
		J1	C	0	1				39/60	2/60	
1020											
1021		B1	B	80	1						
		J4	W	10	1				46/60	4/60	
		B1	B	70	1						
		J1	C	20	1						
1025		J1	W	10	1						

LOGGED BY: K. Heck
DATE: 06/16/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ZONES / BROKEN CORE ZONES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
1025											
1026		J1	C	10	1						
		B1	B	60	1				38-60	5/60	
		J1	C	20	1						
		J1	C	10	1						
1030											
1031		J1	C	15	1						
		J1	C	25	1				42-60	4/60	
		J1	C	12	1						
1035											
1036		B1	B	90	2						
		B1	B	80	1				54-60	3/60	
		J4	W	0	1						
		J1	m,W	.5	1						
1040											
1041											
		J1	m,W	15	1				58-60	2/60	
		J4	W	10	1						
1045											
1046											
		B1	B	80	1				48-60	1/60	
1050											

LOGGED BY: K. Heck

DATE: 06/06/77

PROJECT No.

Golder Associates

Hole No. 445

SHEET ___ OF ___

K- FOR DIVE 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BREAKAGE / BROKEN CORE PIECES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1050 1051											
1055 1056		B1	B	85	1				60/60	1/60	
1060 1061		B1	B	86	1				55/60	2/60	
		B1	B	85	1						
1065 1066		J4	C	10	1				60/60	1/60	
1070 1071		B1	B	70	1				50/60	3/60	
		J4	C	0	1						
		B1	WB	90	1						
1075		J1	C	15	1				57/60	2/60	
		B1	W	90	1						

LOGGED BY: K. Heck

DATE: 06/16/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BROKEN CORE PIECES/0.3m	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1077											
1076											
		B1	B	90	1				60/60	2/60	
		B1	B	80	1						
1080											
1081											
		J4	W	0	1				48	4/60	
		B1	B	60	1						
		B1	B	70	1						
1085		J4	W	0	1						
1086											
		J3	W	5	1						
		B1	B	60	1				53/60	3/60	
1090		B1	B	80	1						
1091											
		J1	C	5	1						
		J4	W	0	2				60/60	5/60	
		B1	B	70	1						
1095											
1096		J4	W	10	1						
		J1	W,B	40	1				48/60	4/60	
		B1	B	90	2						
1100		B1	B	75	1						

LOGGED BY: K. Heck

DATE: 06/06/22

Golder Associates

Hole No. 445

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SQUEEZE BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
1100											
1101											
		B1	B	70	1				39/60	3/60	
		B1	B	70	1						
1105		B1	B	80	1						
1106											
		B1	B	90	1				19/60	2/60	
					Coal begins at 1108'						
1110	100% recovery	J4		40	1						
1111											
	100% recovery	J1		30	1				0/60	2/60	
1115		J1		45	1						
1116											
	100% recovery	J1		40	1				25/60	3/60	
		J1		25	1						
1120		J1		70	1						
1121											
	100% recovery	J1		40	1				21/60	2/60	
1125		J1		50	1						

LOGGED BY: K. Heck

DATE: 06/16/77

Golder Associates

Hole No. 445

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE/CS BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1125											
1126											
	100 90 recovery	J1		45	1				29/60	2/60	
1130		B1		80	1						
1131											
	100 90 recovery	J1		40	1				9/60	1/60	
1135											
1136											
	100 90 recovery								5/60	0/60	
1140											
1141											
	100 90 recovery				coal ends at 1143'				33/60	2/60	
		B1	B	60	1						
1145		B1	B	60	1						
									39/60	1/60	
		B1	B	90	1						
1150											

LOGGED BY: K. Heck
DATE: 01/06/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SEAM / BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1151											
		B1	B	90	1				52/60	1/60	
1156											
		B1	B	80	1				18/60	2/60	
1160		B1	B	90	1						
1161											
		JA	W	20	1						
		J9	C	22	1						
		J1	C	14	1				56/60	5/60	
		J9	W	5	1						
1165											
1166		B1	C	80	1						
		J1	C	10	1				50/60	2/60	
1170											
1171		J1	C	10	1	End of D.H. 445					

LOGGED BY: K. Heck
DATE: 06/06/77

Golder Associates

Hole No. 445
SHEET ___ OF ___

K-FORDINE 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOLUBLE/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
0					0-13FT TRICONE						
5											
10											
12											
15		90	B	B1	2						
		90	B	B4	3						
		90	B	B1	2						
17		90	B	B4	3						
20					17-36' CORE IS HIGHLY BROKEN UP NORMAL PARAMETERS ARE IMPOSSIBLE TO MEASURE HOWEVER NUMEROUS B1 & B4 ~90°-75° COAL INFILLING AND J4 & J1 >45° WITH Fe STAINS ARE NOTICEABLE HARDNESS 3						
25											

LOGGED BY: S.S.

DATE: JUNE 6/77

Hole No. 449

SHEET OF

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/ROUBBLE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
25											
					17-36 Broken up core						
30											
35											
		J4	C	5	1				22/24	2/24	
38		B4	B	90	1						
40									43/48	2/48	
		B4	B	85	1						
42		B4	B	90	1						
45									60/60	2/60	
47		B4	B	60	2						
		B4	B	60	1				45/60	3/60	
50											

LOGGED BY: S.S.
DATE: JUNE 7/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K-FOREDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSSEL/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
50		J1	F	50	1						
		B4	B	90	1				45/60	9/60	
52											
		B1	B	60	1				58/60	13/60	
55											
57		B4	B	75	2						
		B4	B	65	2				50/60	13/60	
60											
		B4	B	60	3						
62											
		J4	W	10	2				60/60	6/60	
		B4	B	85	1						
		J4	W	10	1						
65		B4	B	60	2						
67											
		J4	C	0	1				60/60	2/60	
70		B4	B	70	1						
72											
		B4	D	65	1				43/60	3/60	
75											

LOGGED BY: S.S.
DATE: June 7/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K-FORDING 77(3A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIATED/SHEARED/BROKEN CORE ZONES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 30 15 10 5 0	PERMEABILITY
75						75-78.5 COAL						
77										43/60	3/60	
		JY	C	60	1							
		JY	C	60	1					37/60	3/60	
80		BI	B	90	1							
82												
		JY	E	40	1					46/60	4/60	
85		BI	B	60	2							
		JY	C	25	1							
87												
		BY	B	70	2					55/60	3/60	
90		JY	W	35	1							
92												
										52/60	1/60	
95												
97		BY	B	90	1							
										53/60	4/60	
		JY	C	15	2							
100												

LOGGED BY: S.S.

DATE: JUNE 7/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
100												
102		B4	B	70	2					53/60	4/60	
105		B4	B	70	1					57/60	1/60	
107												
		J1	FW	15	2					52/60	4/60	
110												
112		B4	B	90	2							
		B4	W	85	1					54/60	4/60	
		B4	F	70	1							
115												
117		B4	B	70	2							
										49/60	4/60	
120		B4	C	50	1							
		J4	F	35	1							
122		B4	W	60	2							
		B4	B	80	1					48/60	6/60	
		B4	B	70	1							
125		B4	B	70	1							

LOGGED BY: S.S.

DATE: June 7/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SQUEEZE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
125		J1	P	15	2				40/60	6/60	
127		B4	B	90	1						
130		J4	C	10	2				60/60	2/60	
132											
135		J4	F	30	3				50/60	4/60	
		J4	C	60	1						
137		B4	B	90	1				10/60	6/60	
		J4	F	20	2						
140		B4	B	90	3						
		COAL									
142		J1	F	10	2				47/60	5/60	
145		J1	F	15	2						
147		J1	P	10	1				52/60	2/60	
150											

LOGGED BY: S.L.

DATE: June 7/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
150											
152		B4	D	80	2				52/60	2/60	
		J1	C	10	1						
		B4	B10	90	3				52/60	5/60	
155		J4	F	20	1						
157											
		J4	C	10	1				56/60	3/60	
160		B4	B	65	2						
162											
		J4	C	20	3						
		J4	C	20	1				32/60	8/60	
165		34	C	90	3						
		J1	F	20	1						
167											
		B4	C	90	3				20/60	6/60	
170		B4	C	90	2						
172		B4	B	90	1						
		J4	F	?	3				0/36	12/36	
		J1	F	?	4						
		B4	F	90	3						
175	175	B1	Pe	90	2						

LOGGED BY: S.S.

DATE: June 7/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
175		J1	WF	30	3.
		B4	WF	70	1
179		T1	F	20	2
180		J1	F	0	2
182					180–183 COAL (intermixed broken up)
185		J1	B	90	1
		B4	B	90	1
190		B4	B	65	1
192		B4	B	65	2.
		B4	B	85	2
195		J1	M	40	1
199		B4	B	90	2
		B1	B	90	3
	50% LOSS		N/A		197–203 COAL
200					

GRAPHIC LOG | BRECCIA/ROUGH & BROKEN CORE ZONE | HARDNESS 4 3 2 | ROCK QUALITY DESIGNATION 75 50 25 | NATURAL FRACTURE FREQUENCY 30 15 10 5 | PERMEABILITY

LOGGED BY: S.S.
DATE: June 7/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SEAM/ BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
200											
202	38% LOSS				197-203 COAL				NA	NA	
		34	S	90	1				33/60	2/60	
205		34	C	20	1						
207											
		34	B	90	2				38/60	1/60	
210											
212		34	F	10	1				23/60	1/60	
215		34	W	0	1						
217											
220	100% RECOVERY	N/A			216-224 COAL (numerous 34 @ 35°)				N/A	N/A	
222									53/60	1/60	
225											

LOGGED BY: S.S.

DATE: June 8/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FOREDNG 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
225										
227		J4	W	10	1			33/60	1/60	
		B1	B	40	2					
		B4	B	70	1			60	3/60	
230										
232										
		J4	B	90	3			22/60	7/60	
		B4	B	90	2					
235										
237		B4	B	90	2			60/60	1/60	
240		J4	Q	70	1					
242										
		J4	Q	70	1			50/60	4/60	
245										
		J4	W	0	1					
		B4	CN	80	1					
247		B4	B	90	1					
		J1	B	70	1			39/60	4/60	
		J4	W	10	2					
250										

LOGGED BY: S.S.

DATE: June 8/82

Golder Associates

Hole No. 449

SHEET ____ OF ____

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLINGS	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
250		J4	BW	40	1				58/98	4/60	
252											
					CORE IS HIGHLY DESTROYED (probably due to overburden)						
255		B4	B	80	1				10/96	5/96	
		B4	B	80	1						
		J4	W	0	1						
		J1	C	20	2						
260	260										
									54/108	1/102	
265		J1	C	30	1						
	269										
270		B4	B	75	1				55/60	3/60	
		B4	B	80	1						
		B4	B	80	1						
		B4	B	75	1				52/60	1/60	
275											

LOGGED BY: S.S.
DATE: June 8/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
279										50/60	1/60	
280										56/60	6/60	
284		B4	B	65	1							
		J4	C	10	1					60/60		
289		J1	C	30	1						6/60	
		B4	Q	85	1							
		J4	W,Q	15	1							
		B4	Q	85	2							
290		J4	W	15	2					57/60	4/60	
294		B4	B	60	2							
295		B4	D	85	1					60/60	3/60	
		B4	W	75	1							
299		B4	B	85	1							
300												

LOGGED BY: R.S.

DATE: June 8/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COUSE/... BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
300									60/60	0/60	
304											
305		J1	C	10	1				60/60	5/60	
		B4	3	65	1						
		B4	W	~75	3						
309											
310		J4	B	40	1				60/60	21/60	
		J4	B	40	1						
314											
315									0/36	5/36	
		B4	B	80	3						
317		J4	C	10	2						
									30/48	3/48	
		J4	C	45	1						
320		B4	C	85	1						
321		J1	C	10	1				52/60	4/60	
		J4	B	40	1						
		B4	B	70	3						
325											

LOGGED BY: S.S.
DATE: June 9/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	320	PERMEABILITY
325												
326												
		J4	B	75	1				5/60			
		J4	W	0	2				51/60	6/60		
		J1	C	25	1							
		J4	W	25	1							
330												
331		B4	B	80	1							
		B4	B	75	1				57/60	3/60		
		J4	W	30	2							
335												
336												
		B4	B,W	~60	4				60/60	5/60		
340												
341		J4	C	15	1							
		J1	C	15	2				37/72	5/72		
		J4	C	10	2							
345												
347		B4	R,W	~90	1							
		J4	C	40	1				19/60	4/60		
		J4	C	35	1							
350												

· 348 - 369 COAL

LOGGED BY: S.S.
DATE: June 977

Golder Associates

Hole No. 449
SHEET ___ OF ___

K-FORDING 72(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE BROKEN CORE ETC	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 30 15 10 5 0	320	PERMEABILITY
350												
352	99% REC	B4	C	90	2				10/60	4/60		
		B4	C	90	2							
		B4	C	90	5				22/60			
355	100% REC	J4	C	25	1					10/60		
357		B4	C	90	2	COAL 348-369						
		J4	C	40	5							
	100% REC	J4	C	40	4				0/60	12/60		
360		B4	C	80	3							
362												
	100% REC	B4	C	80	3				5/60	5/60		
365		J4	G	40	2							
367												
	100% REC								35/60	2/60		
370		B4	C	85	1							
372		J1	65	C	1				60/60	1/60		
375		B4	C	81	1							

LOGGED BY: S.S.
DATE: June 9/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSSE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY to 1.5 to 5	PERMEABILITY
377									60/60	1/60	
377											
		B4	B	65	1				60/60	4/60	
380		B4	B	65	1						
		B4	B	85	2						
382											
		B4	B	85	1				50/60	2/60	
385		B4	B	60	1						
387											
		B4	B	80	1				60/60	3/60	
390											
392		B4	B		2						
		B4	B	75	2				50/60	2/60	
395											
397									58/60	2/60	
		B4	W	20	2						
400											

LOGGED BY: S.S.

DATE: June 9/77

Golder Associates

Hole No. 449

SHEET ____ OF ____

K - FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SEAM/SHEAR BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
400											
402									58/60	2/60	
		J4	C	0	1						
		J4	B	80	1				60/60	3/60	
405		J4	B	90	1						
407											
									57/60	3/60	
410		J4	B	90	2						
412		J4	C	40	1						
		J4	BW		1				19/60	9/60	
		B1	B		2						
		B1	B	~90	1						
415		B1	B		1						
		J4	BW		2						
417		B4	BW		2						
		J4	B	85	1				49/60	2/60	
420		J4	C	40	1						
422											
									56/60	3/60	
		B4	D	75	1						
425		B4	MB	70	2						

320

LOGGED BY: J.S.
DATE: June 9/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SEAM / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
425											
427									56/60	2/60	
		B1	B	90	2						
		J4	BW	60	1				54/60	4/60	
430											
432		B4	B	90	1						
									50/60		
435										2/60	
		J4	WB	55	1						
437		B4	B	90	1						
									15/60	7/60	
		B4	B	90	2						
440		B1	B	90	3						
		B4	B	70	2						
442											
									48/60	1/60	
		J4	C	75	2						
445		B4	B	80	2						
		J4	C	20	1						
447											
		B4	B	90	1				40/60	2/60	
		J4	W	90	1						
450											

LOGGED BY: S.E.

DATE: June 10/77

PROJECT No.

Golder Associates

Hole No. 649

SHEET ___ OF ___

K-FOREING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA, SOUND, BROKEN, CORE IN	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	IMPERMEABILITY
450											
452									40/60	2/60	
									53/60	2/60	
455		J4	C	20	2						
457									60/60	1/60	
460											
462		B4	C	90	1				60/60	3/60	
465		B4	C	80	1						
		J4	SW	40	2						
467									60/60	0/60	
470											
472									80/84	2/84	
475											

LOGGED BY: S.S.

DATE: June 10/77

PROJECT No.

Golder Associates

Hole No. 449

SHEET ___ OF ___

K- foreing 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
479		JN	C	90	C				80/84	2/84	
484									59/60	1/60	
485									60/60	0/60	
490	10% LOSS		N/A		COAL DESTROYED				N/A	N/A	
494											
495	100% RECOVERY	JN	C	0	C COAL 490-505				12/60	1/60	
499		JN	C	40-50	S						
500											

LOGGED BY: S.S.

DATE: June 10/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / CORE LOSS	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5 0	PERMEABILITY
500	100% RECOVERY		N/A		490-505 COAL 499-504 COAL SAMPLE DESTROYED				N/A	N/A	
504											
505		B4	B	80	2				42/60	21/60	
509		B4	B	75	3						
510		B4	B	80	3				37/60	11/60	
		B4	C	70	1						
		B4	BW	85	2						
514		B4	B	80	2						
515		B4	B	80	2				43/72	7/72	
		B4	BW	75	1						
		J4	W	10	2						
		J4	C	15	1						
		J4	W	0	1						
520	520										
		J4	WQ	15	1				46/60	5/60	
		B4	BQ	90	1						
		B4	B	75	1						
525		J4	C	25	2						

LOGGED BY: S.S.

DATE: June 10/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSED / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
525		JY	W	30	1						
		JY	C	30	1				36/60	7/60	
		BY	W	65	1						
		JY	W	15	2						
530		BY	B	90	2						
		JY	BW	45	2				26/60	7/60	
		BY	W	10	2						
535		BY	BW	80	3						
		JY	C	20	2						
		JY	WD	15	3				35/84	18/60	
		JY	W	10	1						
		BY	B	80	2						
540		BY	B	90	2						
	542	JY	C	0	3						
		BY	B	65	2						
		BY	B	70	2				35/60	11/60	
545		BY	B	70	2						
		BY	B	70	3						
	547	JY	B	55	2						
		BY	B	60	1				40/60	8/60	
		JY	W	10	2						
550		BY	W	80	1						

LOGGED BY: S.S.

DATE: June 0 77

PROJECT No.

Golder Associates

Hole No. 549

SHEET ____ OF ____

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
550		J1	C	0	2
		B4	B	90	1
552		J1	C	10	1
		J4	E	15	1
		J1	C	10	2
555		B4	B	90	1
		J4	C	15	2
		B4	B	70	2
557		J4	WB	20	2
		B4	B	90	1
		J1	C	5	1
560		B4	W	90	2
562		J4	W	10	1
		J4	C	20	1
		B4	B	75	1
565		B4	B	80	2
567					
		B4	B	80	1
		B4	B	80	3
570		B4	B	80	3
572					
	100% RECOV	B4	B	80	2
575					574-582 TOAL

GRAPHIC LOG | BRECCIA/SOLUTION/BROKEN CORE ZONE | HARDNESS 4 3 2 | ROCK QUALITY DESIGNATION 75 50 25 | NATURAL FRACTURE FREQUENCY 20 15 10 5 0 | PERMEABILITY

ROCK QUALITY DESIGNATION: 40/60, 8/60, 42/60, 10/60, 53/60, 5/60, 45/60, 4/60, 49/60, 7/60, 38/60, 7/60

LOGGED BY: J.S.

DATE: June 10 77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SHEARED/BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 2 to 15 to 30	PERMEABILITY
575	100% Recovery	JY	C	40	3				30/60		
577		BY	C	70	2						
		BY	C	80	2					8/60	
	100% RECOVERY	BY	C	80	2				22/60		
580		BY	C	90	1	574-582 COAL					
582		JY	C	~50	3						
		JY	B	30	1	11		11		9/60	
		BY	B	80	2				24/60		
585		BY	B	80	3						
587		BY	B	80	3						
		JY	B	30	1				29/60		
		BY	B	70	3					6/60	
590											
592		JY	B	35	2						
		BY	B	75	1						
		JY	W	30	1				54/60	5/60	
595											
597		JY	W	5	3						
		JY	W	10	3				52/60	4/60	
600											

LOGGED BY: C.S.

DATE: June 10/77

Hole No. 449

Golder Associates

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
600		B4	B	80	1				52/60	4/60	
602											
		B4	B	80	2				50/60	5/60	
605		B4	B	75	2						
		J4	W	10	1						
607											
		J1	C	30	1				58/60	2/60	
610		J4	W	0	1						
612											
		B4	B	80	4				25/60	7/60	
615											
		B4	B	80	3						
617											
		B4	B	75	1				52/60	1/60	
620											
622											
		B4	C	90	1				50/60	2/60	
		J4	C	0	1						
625											

LOGGED BY: S.S.

DATE: June 15/77

Golder Associates

Hole No. 449

SHEET ____ OF: ____

K-FORDING 77(37)

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SHEARED BROKEN CORE ZONE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (30 15 10 5 0)	PERMEABILITY
625									SD/60	2/60	
627											
									40/60	2/60	
630		B4	A	90	1						
632		ST	BW	60	1						
		B4	C	20	1				33/60	3/60	
635											
	100% RECOVERY	B4	C		1						
637		B4	C		1						
640	10% LOSS		N/A						N/A	N/A	
642					COAL 635-654						
					COAL SAMPLE IS HIGHLY DISINTEGRATED						
645	60% LOSS		N/A						N/A	N/A	
647											
	100% RECOVERY		N/A						N/A	N/A	
650											

LOGGED BY: S.S.

DATE: June 15/77

PROJECT No.

Golder Associates

Hole No. 449

SHEET ___ OF ___

K- FOLDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
650											
652	100% RECOV		N/A		CORE 635-654				N/A	N/A	
		BY	B	2					0/60	4/60	
650		BY	B	3							
		BY	B	3							
657		BY	BW	3							
660		BY	W	80	1				52/60	1/60	
662											
665		JY	C	25	2				40/60	3/60	
667		JY	C	0	1						
670									57/60	1/60	
672		BY	C	80	1						
									60/60	3/60	
675											

LOGGED BY: S.S.
DATE: June 15/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 30 15 10 5 0	PERMEABILITY
675												
677		J4	W	PS	1					60/60	3/60	
		J4	W	25	2							
		J4	W	0	4					57/60	10/60	
680		J4	W	0	4							
		J1	C	0	2							
682		J										
										60/60	3/60	
685		J4	Q	10	1							
		J4	Q	0	2							
687												
		B4	B	65	2					40/60	1/60	
		B4	B	90	2							
690		J4	B	90	2							
		B4	B	65	2							
692		J4	W	0	1							
		J4	W	0	1					40/60	11/60	
		B4	B		2							
		B4	B	60-	3							
695		B4	B	90°	2							
697		B4	B		3							
										58/60	7/60	
		J4	W	0	1							
		B4	B	70	1							
700												

LOGGED BY: S.S.

DATE: June 15/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FOLDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
700		J4	W	0	2				58/60	7/60	
702		J1	W	0	3						
		B4	B	~90	2				60/60	6/60	
705		J4	W	0	1						
		J4	W	0	1						
707		B4	B	~90	2						
									60/60	4/60	
710		B4	B		3						
712		J4	C		1				54/60	1/60	
715		J4	W	5	1						
717									45/60	3/60	
720		J1	C	20	1						
722		B4	B	90	2				39/60	6/60	
		B4	B	90	3						
725		B4	C	90	1						

LOGGED BY: S.S.

DATE: June 15/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FOLDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
725											
727		B4	B	82	2				30/60	6/60	
730		B4	B	80	2				58/60	4/60	
732		J4	WB	35	1						
		J4	B	75	1						
		B4	B	80	1				58/60	4/60	
735		J4	W	0	1						
737		J1	W	10	2						
		B4	B	80	2				56/60	5/60	
740		B4	B	80	3						
742											
		B4	B	80	2				59/60	9/60	
745		B4	B	80	3						
		B4	W	70	1						
		J4	W	0	1						
747		B4	B	90	2						
									50/60	7/60	
750		J1	Q	10	2						

LOGGED BY: L.S.

DATE: June 15/77

Golder Associates

Hole No. 449

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIATED/SHEARED/BROKEN CORE ZONES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
750		J4	Q	10	3				50/60	7/60	
752		B4	BW	75	2						
		J1	C	25	2				43/60	5/60	
755		J1	C	0	1						
		B4	B	90	1						
757		B4	B	75	1						
		J1	C	25	2				50/60	6/60	
760		J4	R,W	0	3						
762		B4	BW	80	1						
									24/60	10/60	
765		J4	W	0	1						
767		J4	BW	22	4						
		B4	B	~90	5						
									48/60	2/60	
770		B4	B	80	1						
772		J4	C	0	1						
	100% RECOVERY	N/A			↓ 772 – 777 COAL coal sample highly disintegrated				N/A	N/A	
775											

LOGGED BY: S.S.

DATE: June 15/77

PROJECT No.

Golder Associates

Hole No. 449

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	CRECCIA/SOLUBLE	BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 45 to 90 0 to 45	PERMEABILITY
775	100% RECOVERY	N/A			772-775 COAL ↓ 777 END OF DDH 449 June 15/77					N/A	N/A	
780												
785												
790												
795												
800												

LOGGED BY: S.S.
DATE: June 15/77

Golder Associates

Hole No. 449
SHEET ___ OF ___

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	320	PERMEABILITY
5					TRICONE							
10	10	B1	C	60	3				11/60	9/60		
		B1	C	60	1							
		H	A	30	1							
15	15/15	B1	C	60	5							
		B1	C	30	3				14/60	10/60		
		B1	F	65	3							
		B1	F	30	1							
	20	B1	C	60	2							
		B1	C	15	2							
20		B1	C	70	2				10/60	3/60		
		B1	C	70	2							
25	25	B1	A	70	6							

LOGGED BY: K. Hoch & S. Sinclair

DATE: 25/06/94

PROJECT No. _____

Golder Associates

Hole No. 161

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▩	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 0.5 10 5	PERMEABILITY
25		Bl	C	90°	3				30/60	7/60	
		Bl	C	45°	1						
		J1	C	35°	1						
30	30/35	Bl	C	70°	2				17/60	8/60	
		Bl	C	70°	2						
		J1	C	70°	1						
		Bl	C	70°	2						
		Bl	C	70°	2						
35	35/40	Bl	C	90°	2				13/60	10/60	
		Bl	C	90°	3						
		Bl	C	65°	2						
		J1	C	20°	3						
40	40/45	J1	C	30°	1				38/60	8/60	
		Bl	C	50°	3						
		J1	F	30°	1						
		N	C	5°	5						
45	45	Bl	F	85°	1					4/60	
		Bl	C	90°	1						
		Bl	C	90°	1						
		J1	C	20°	1						
		Bl	C	90°	1						
50	50										

LOGGED BY: K. Hecker & S. Siska

DATE: 05/15/88

PROJECT No.

Golder Associates

Hole No. 761

SHEET ___ OF ___

K - FOLDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
50											
50		Bl		80°	1				8/48	3/48	
		Jl		30°	1						
		Bl		80°	2						
		Jl		30°	1						
54.5		Bl		80°	2						
54.5		Bl		90°	1				24/54	4/59	
55		Jl		10°	1						
		Jl		20°	1						
59		Sh		30°	1						
59											
60		Bl		90°	2				0/60	2/60	
		Jl		5°	1						
64											
64											
65		Jl		40°	2				29/58	4/60	
		Bl	B	90	2						
69		Bl	B	60°	1						
69		Bl	B	65°	1						
69		Bl	B	65°	1						
70		Jl	Q	20°	2				44/60	5/60	
		Bl	B	65°	1						
		Sh		10°	2						
		Bl	B	65°	1						
74		Bl	B	65°	1						
74		Bl	B	70°	1						
75											

LOGGED BY: K. Heck + S. Siska

DATE: 06/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K- FORDING 72(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
78		B1	B	70°	1
		B1	B	70°	1
		B1	B	70°	1
79		B1	B	70°	1
79		B1	B	65°	2
80		B1	B	65°	1
		B1	B	65°	3
		J4	W	0	1
84		B1	B	65°	3
84		B1	B	70°	1
85		B1	B	70°	1
		B1	B	70°	1
89					
89		B1	B	65°	1
90		J4	W	00	1
92		B1	B	65°	1
92					
94		B1	B	60°	1
94		B1	B,W	60°	1
95		B1	B	60°	1
		B1	B	60°	1
		J4	B	30°	1
99		B1	B	60°	1
99					
100					

GRAPHIC LOG: BRECCIA/GOUGE ▨ BROKEN CORE ▧

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25): 48/60; 48/60; 51/60; 32/36; 10/24; 40/60

NATURAL FRACTURE FREQUENCY (20 15 10 5 0): 5/60; 9/60; 3/60; 1/24; 4/60

PERMEABILITY

LOGGED BY: K. Heck & S. Siska

DATE: 06/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS
100		B1	B	90°	1
		B1	B	60°	2
		B1	B	60°	2
104		B1	B	60°	2
104					
105		B1	B	60°	1
		B1	B	60°	2
		B1	B	90°	1
108		B1	B	60°	1
108		B1	B,W	70°	2
110		B1	B,W	70°	1
		J4	B	40°	1
		B1		70°	1
113					
113		B1	B	70°	1
		J1	C	0	1
115		J1	C	20°	1
		B1	B,W	70°	1
118		B1	B,W	70°	1
118					
120		B1	B	70	1
		J4 B1	E	10° 90°	1 1
		B1	C	90°	1
124					
124		B1	B	90°	1
125					

GRAPHIC LOG; BRECCIA/GOUGE ☐ BROKEN CORE ▨

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25)

13/60	
5/60	
32/60	
20/60	
43/72	

NATURAL FRACTURE FREQUENCY (20 15 10 5 0)

7/60	
5/60	
4/60	
3/60	
3/72	

PERMEABILITY

LOGGED BY: K. Heck & S. Siska

DATE: 09/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
125		J1	W,B	40°	1							
		B1	B	90°	1					30/60	2/60	
129		J4	W	20°	1							
129		B1	B	70°	1							
130											2/60	
		B1	B	70°	1					20/60		
		J4	B	40°	1							
134												
134												
135		B1	B	90°	1							
		J4	B,W	40°	1					15/60	2/60	
		B1	C	70°	1							
		J1	C	30°	1							
139												
139												
140		B1	B	90	1							
		B1	B	90	1					34/72	2/72	
		J1	C	40	1							
		J1	C	40	1							
145												
145												
		J1	B	40°	1					19/60	3/60	
		B1	B	80°	2							
		B1	B	90°	1							
150												

LOGGED BY: K.Heck & S.Siska

DATE: 09/05/77

PROJECT No. _____

Golder Associates

Hole No. ~~5~~ 461

SHEET ____ OF ____

K-FORDING 72(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
150											
150		B1	C	70°	1				35/60	2/60	
		B1	C	90°	1						
155	155										
155		B1	C	75°	1				29/60	2/60	
		J1	C	30°	1						
		B1	C	90°	1						
160	160										
160		J1	C	35°	1				23/60	0/60	
		J1	C	35°	1						
165	165										
165		B1	C	70°	1				23/60	4/60	
		B1	C	90°	2						
170		B1	B	90°	1						
	171										
	171										
	8% 10ft	B1	B,A	90°	1				21/60	1/60	
		J1	C	30°	1						
175	175										

LOGGED BY: K. Heck & S. Siska

DATE: 09/05/77

PROJECT No. _____

Golder Associates

Hole No. 76f

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
175											
178		J4	B	50°	1				27/36	1/36	
		B1	B	70°	1						
180		B1	A	70°	1				48/72	2/72	
184		B1	A	70°	1						
	184	B1	B	40°	2				47/60	3/60	
185		J4	B	90°	1						
189		B1	B	70°	1						
	189	J1	Q	10°	1				47/60	3/60	
190		J1	B	30°	1						
		B1	B	70°	1						
		B1	B	70°	2						
194		J4		40°	1						
	194								24/60	2/60	
195		B1	C	90°	1						
		J1	A,W	0°	1						
199		B1	B	90°	1						
200											

LOGGED BY: K. Heck & S. Siska

DATE: 09/05/77

PROJECT No. _____

Golder Associates

Hole No. 46C

SHEET ___ OF ___

K-FORDING 72(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
203		B1	B	90°	1						
		J4	W	10°	1				32/48	2/60	
203		B1	Q	90°	1						
		J1	SW	20°	1						
205		B1	B		1				40/72	2/72	
209		B1	B		1						
209		J1	W	20°	1				40/60	2/60	
210		B1	B	90°	2						
214											
214		J4	W	20°	1				33/60	0/60	
215		J4	C	0°	1						
219											
219											
220		J4	W	0°	1					2/60	
		B1	B	90°	2						
224		J1	C	10°	1						
224											
225											

LOGGED BY: K. Heck + S. Siska
DATE: 09/05/77
PROJECT No.

Golder Associates

Hole No. 461
SHEET ___ OF ___

K - FORDING 72(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
225		Bl	B	60°	3				29/60	8/60	
		Bl	B	60°	2						
229		Bl	B	75°	3						
229											
230		JA		30°	4				30/60	0/60	
		JA		60°	1						
234											
234											
235		JI	C	40°	1				27/60	0/60	
239		JI	C	40°	1						
239											
240		JA	C	20°	1				24/60	3/60	
		Bl	B	80°	1						
		JA	C	50°	1						
		Bl	B	70°	1						
244		Bl	B	90°	1						
244											
245		Bl	B	60°	2				17/60	3/60	
		JA		30°	1						
249		Bl	B	80°	1						
249											
250											

LOGGED BY: K. Heck & S. Sisk

DATE: 10/05/77

PROJECT No.

Golder Associates

Hole No. 461

SHEET ___ OF ___

K- FORDEWG- 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
250		B1		80°	1						
		J4	W,F	30°	2				49/72	1/72	
		J4	W	15°	2						
	255										
255	255										
		B1	B	70°	1				48/60	1/60	
		J4	W	10°	1						
	260	J4	W	0-30°	3						
260	260										
		B1	B	70°	1				29/72	2/72	
		J4	W,B	20°	1						
		B1	B	70°	1						
265	266										
	266	J4	W	10°	1				50/60	2/60	
		B1	B	90°	2						
		J4	W	20°	1						
		B4	W		1						
		B1	B	60°	1						
270	271										
	271	J4	W	60°	4				42/60	1/60	
		J4	C	30°	1						
		B1	B	70°	1						
		J4	W	0°	1						
275		J4	W	30°	1						

LOGGED BY: K. Heck & S. Siska
DATE: 10/05/77
PROJECT No. _____

Golder Associates

Hole No. 461
SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
275											
276											
276		B1	B	60°	1				34/60	3/60	
		B1	B	90°	2						
280		J1	A	20°	1						
281											
281		B1	B	90°	1				32/60	2/60	
		J1	C	20°	1						
		J1	B,F	30°	1						
285		B1	B	90°	1						
286											
286		B1	B	90°	2				43/60	3/60	
		B1	B	90°	1						
290		J4	W	30°	1						
291											
291		J4	W	15°	1				49/60	3/60	
		J4	W	20°	1						
295		B1	A	90°	2						
296											
296		J1	W	20°	1				32/60	3/60	
		B1	B	90°	3						
300		J4	W	10°	2						

LOGGED BY: K. Heck & S. Siska

DATE: 10/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K - FORDING 72(3)A

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	320	PERMEABILITY
300												
301												
301		J4	W	20°	1				24/60	1/60		
		B1	B	90°	1							
		J1		70°	1							
305												
306		J1		20°	1							
306									24/60	1/60		
		B1		80°	1							
310		J1		20°	1							
311		J4		10°	1							
311									22/60	0/60		
		J1		20°	1							
315												
316												
316									20/60	0/60		
		J1		40°	1							
320		J4		30°	R2							
321												
321									32/60	0/60		
		J4		30°	1							
325												

LOGGED BY: K. Heck + S. Siska
DATE: 10/05/77
PROJECT No. _____

Golder Associates

Hole No. 461
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (30 15 10 5 0)	PERMEABILITY
325												
326		J4		30°	2							
326		B1		90°	1					61/60	2/60	
		B1		90°	1							
330												
331												
331		B1		90°	2							
		B1	B	80°	1					30/60	1/60	
		B1	B	80°	1							
335												
336												
336												
		J1	W	10°	1					42/60		
		B1	B	80°	1							
340												
341		B1	C	80°	1							
										45/60	1/60	
345		B1 / J4	B / C	90 / 5	1 / 1							
346												
										36/60	2/60	
		B1	B	85	1							
		J1	B	10	1							
		B1	B	75	1							
350		J1	B	30	1							

LOGGED BY: K. Heck & S. Siska

DATE: 10/05/77

PROJECT No. _____

Golder Associates

Hole No. 16F

SHEET ____ OF ____

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
350		J4	C	20							
351		J1	B,W	5	2				25/60	3/60	
		B1	B	80	1						
355		J1	B	5	2						
		B1	B	65	1						
356		J1	W,B	0	1				22/60	0/60	
		J1	W	10	1						
		J1	B	10,20	2						
360		J4	W	5	1						
		J1	F,B,	5	1						
361		B1	B	70	2				30/60	4/60	
		J4	W	15,0	3						
		J1	B	20	1						
		B1	B	80	1						
365		J1,J4	W,W	10,0	2						
		B1	B	80	1						
366		B1	B	90	1				23/60	4/60	
		J1	B,W	0	1						
370		J1	W	15	1						
		B1	C	75							
		J4	W	5	1						
371		J1	BW	0	1				39/60	2/60	
		B1	B	90	1						
		J4	W	65	1						
375		J4	C	20	1						

375.5'

LOGGED BY: K. Heck + S. Siska

DATE: MAY 12/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	320	PERMEABILITY
375		J4	W	0	2				21/60	2/60		
		B1	W	55	1							
		J1	W	10	1							
		B1	B	55	2							
380	380	B1	B	60	1				40/60	2/60		
		B4	W	60	1							
		J1	C	5	1							
385	385	J1	WB	10	1				23/72	0/72		
		J4	W	5	1							
390		J1	W	5	1							
	391	J4	BW	15	3				31/60	1/60		
		J1	B	0	1							
395		B1	B	80	1							
	396	B1	B	90	1				9/60	2/60		
		J4	W	0	1							
400		B1	C	70	1							

LOGGED BY: K. Heck + S. Siska

DATE: MAY 12/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (30 25 10 5 0)	PERMEABILITY
400													
401													
		B1	W	90	1						28 / 60	1 / 60	
		J1	C	0	1								
405													
406		B1	B	75	1						76 / 60	1 / 60	
		J1	WC	10	1								
410		J4	WM Q	0	1								
411		J4	W	5	1						24 / 60	2 / 60	
		J1	C	85	1								
415		B4	W	90	1								
416													
		B1	W	70	1						78 / 78	2 / 78	
		J1	W	0	1								
420		J1	B	20	1								
		B4	W	90	1								
		J1	WB	20	1								
422.5		J1	C	25	1						47 / 48	1 / 48	
		J4	W	5	1								
		B1	B	90	1								
425													

LOGGED BY: K. Heck + S. SISKA

DATE: MAY 12/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ____ OF ____

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▩	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
425											
426		B1	B	90					50/60	2/60	
		B1	B	90							
430		J1	WB	15							
431		J4	B	10					40/60	3/60	
		B1	B	75							
		J4	W	50							
435		B1	B	90							
436		J1	B	25					23/60	2/60	
		B1	B	80							
		B1	W	75							
440	441										
		J1	BW	20					29/60	1/60	
445		J1	B	12							
	446	B4	W	85							
		J1	W	25					18/60	0/60	
450		J1	B	5							
		J4	W	25							

LOGGED BY: S.SSKA + K.HECK

DATE: MAY 13/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ____ OF ____

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY	PERMEABILITY
450											
451											
	10% LOST	J1	C	0	1				40%		
455	455.5										
	100% LOST CORE										
457	47%	J1	C	30					0	0	
459											
460		J1	C	15	1				8/24	1/24	
		B1	C	90	1						
461											
	60%								N/A		
463											
		J1	C	30	1				4/48	0	
465	14% LOST										
		J1	C	30	1	END OF CORE SEATT 468'				1	
467				3							
		B4	W	70	3						
		J4	W	35	1				19/48	2/48	
470											
		B1	B	85	1						
471											
		B1	B	65	1				43/60	2/60	
473		B1	B	70	1						

LOGGED BY: S. SISKA + K. HECK

DATE: MAY 13/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 30 15 1 5	PERMEABILITY
475											
476											
		B1	B	80					52/60	2/60	
480		B1	B	55							
481		J1	C	0					52/60	0	
485											
486	55% LOST								N/A		
490											
491									49/60	1/60	
		J1	C	15	1						
495		J4	W	20	1						
		B1	B	80	1						
		B1	B	90	2				30/60		
500		J4	B	0	1						

LOGGED BY: S. SISKA + K. HECK

DATE: MAY 13 / 77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
500											
501		B1	B	75	1				75/60	7/60	
505		B1	B	80	3						
506		B1	B	40	1				2/60	2/60	
		B1	B	90	1						
		J1	D	0	1						
510		J1	B	85	2						
511		J1	B	40	1				31/60	1/60	
		B1	B	80	1						
515		J1	D	40	1						
516		B1	B	90	1				50/60	2/60	
		B1	C	60	1						
520		B4		74	1						
521		J4	C	30°	1				40/60	4/60	
		J4	C	30°	1						
525											

LOGGED BY: S.SISKA + K. HECK

DATE: MAY 13/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ____ OF ____

K - FORDING 77/3/A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
525		B1	B	80°	1						
526		J4	W	60°	2						
		J4	C	70	1				56/60	9/60	
530											
531											
		B1	B	30	1				41/60	3/60	
		J4	W	30	1						
535		B4	C	90°	1						
		B1	B	90	2						
536											
		J1	C	30	1				25/60	0/60	
540											
541											
		J4	C	30	1				55/60	0/60	
545		J1	B	30	1						
		J4	W	0°	1						
546											
		J1	W	20	1				49/60	1/60	
		B1	C	90	1						
550		J4	W,C	0,5	2						

LOGGED BY: K. Heck + S. Siska

DATE: 13/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☐	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
550											
587		JA	W	0	1						
		JA	C	20	1				56/60	1/60	
		B1	B	80	1						
555											
556		J4	W	5	1						
		J4	C	0	1				48/60	0/60	
560		B4	B	70	1						
561											
		B4	W	80	2				47/60	2/60	
565		B1	B	70	2						
566											
		B1	B	70/80	2				45/60	2/60	
570											
571		B4	C	70	1						
		B1	B	90	2				50/60	2/60	
575											

LOGGED BY: K Heck & S. Siska

DATE: 13/05/77

PROJECT No.

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
575											
576		Bl	C	80	1				38/60	3/60	
		Bl	B	80	2						
580											
581		coal begins									
	100% recovery of coal	Bl		90°	1				35/60	2/60	
		J1		30	1						
585		Bl		90	1						
586	100% recovery of coal	J1		20	1				27/60	9/60	
		B4	W	80	1						
		J1		60	1						
590		J1		40	1						
591	50% of coal lost	J4		40	1				10/60	2/60	
		B4		90	1						
		Bl	W	90	1						
595		Bl	B	90	1						
		J1		30	1						
596	100% recovery of coal	J1		40	1				18/60	1/60	
		J4		30	1						
		Bl		85	1						
600											

LOGGED BY: K. Heck & S. Siska

DATE: 13/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K - FORDING 77(3)9

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
600		P1		40°	2						
601		B1	B	80	2				29/60	2/60	
		J4	W	40	1						
		J4	W	40	1						
605		B1	B	90	1						
606		J4	W	0	2				47/60	0/60	
610											
611		B1	B	90	1				48/60	1/60	
		J4	W	0	1						
615		B4	C	90	1						
616									46/60	0/60	
620		B4	C	70	1						
621		J4	C	30	1				47/60	1/60	
625		B1	B	90	1						
		B4	W	90	1						

LOGGED BY: K. Heck + S. Siska

DATE: 14/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ____ OF ____

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
625											
626		BA	C	90°	1				39/60	0/60	
630											
631									34/36	0/36 0/60	
634											
635		J9	C	80	1				58/60	1/60	
		B1	B	80	1						
639											
640		B1	B	80	1				54/60	1/60	
		J1	C	30	1						
		J9	C	5	1						
644											
645									60/60	0/60	
649											
650											

LOGGED BY: K. Heck + S. Sisko

DATE: 18 Oct 77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 7763/A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (≥95 10 5 0)	PERMEABILITY
650		B1	B	85	1				30/60	1/60	
		B4	B	85	1						
654											
655		B1	B	90	2				35/60	2/60	
		J4	C	20	1						
659									50/60	0/60	
660											
664									46/60	0/60	
665		B4	B	80	1						
669		B4	B	90	1				37/60	0/60	
670											
674											
675											

LOGGED BY: K. Heck & S. Siska

DATE: 14/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K- FORDING 7763A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
675		CJ BJ	C SW	0 80	1 1				46/60	0/60		
679		JJ	C	0	1				46/60	0/60		
684		JI JJ	C C	0 30	1 1				43/60	0/60		
689		JI JI	C W	25 20	1 1				54/60	0/60		
694		JI	C	40°	2				49/60	0/60		
699												

LOGGED BY: K. Heck & S. Siska

DATE: 14/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ____ OF ____

K - folding 77/3/A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
700		Bl	B	80	1				42/60	1/60	
705	704 100% recovery of coal	J1		30	1				29/60	0/60	
		J1		40	1						
710	709 39% lost coal	J1		30	1				0/72	0/72	
715	715 100% recovery of coal	J1		40	1				15/60	0/60	
720	720 100% recovery of coal	J4		60	2				14/60	0/60	
725	725										

LOGGED BY: K. Heck + S. Siska

DATE: 14/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 10 5 0)	PERMEABILITY
725	100% recovery	B1	C	80	1 End of seam				59/60		
		B4	C	80	2						
730	730	J1		30	1				36/60	0/60	
	100% recovery										
735	735 100% recovery								8/60	1/60	
	End of	J4	Coal C	40	1						
		B1	B	80	1						
740	740	B4	B	70°	2				7/60	0/60	
		J4	W	70	1						
745	745	J4	C	10	1				42/60	1/60	
		B1	B	90°	1						
750	750										

LOGGED BY: K. Heck & S. Siska

DATE: 14/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K - FOLDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
750											
		J1	W	10°	1				43/60	0/60	
		J4	W	10	2						
755	755										
		B1	B	80	1				35/60	1/60	
		J4	W	5	1						
760	761	J4	C	10	1				39/60	2/60	
		B1	B	90	2						
765	765										
		B1	B	80	1				36/60	1/60	
		J1	B	70	1						
770	770										
		J4	MB	15	1				50/60	1/60	
		B1	W,B	80	1						
	775	J4	W	0	1						
775											

LOGGED BY: K. Heck + S. Sista

DATE: 14/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K - FORDING 7(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS
775		BI	B	70	1
		J4	W	0	1
		BI	B	90	1
780		J4		30	1
		J4	W	30	2
785		J4	C	40	1
		J4	C	20	4
		J1	C	20	1
790		J4	C	20	1
		J4	C	20	1
		J4	C	10	1
795		BI	W	70	1
		BA	W	90	1
		J4	W	50	1
800					

GRAPHIC LOG | BRECCIA/GOUGE | BROKEN CORE | HARDNESS 4 3 2 | ROCK QUALITY DESIGNATION 75 50 25 | NATURAL FRACTURE FREQUENCY 20 15 10 5 0 | PERMEABILITY

ROCK QUALITY DESIGNATION: 33/60; 39/30; 42/60; 44/60; 45/60

NATURAL FRACTURE FREQUENCY: 0/60; 0/60; 0/60; 1/60

LOGGED BY: K. Heck & S. Siska
DATE: 4/25/77
PROJECT No.

Golder Associates

Hole No. 461
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
800		J1	C	20	1					53/60	0/60	
		J4	C	50	1							
		J1	C	10	1							
805		J1	C	20	1					42/60	0/60	
		J1	C	20	1							
810		J1	B	10	2					27/60	1/60	
		J4	W	20	2							
		B1	B	20	1							
815		J4	C	40	1					32/60	0/60	
		J4	C	70	1							
		J4	C	40	1							
820	20% of coal lost				coal starts at 821					0/60	0/60	
825												

LOGGED BY: K. Heck & S. Siska

DATE: 14/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FROEWG 7763a

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
825	100% recovery	J1		40	
		J1		30	
		J4		15	
		J4		20	
830	100% recovery	J1		30	
		J1		30	
		B1		80	
		J4		10	
		J1		20	
835	100% recovery	J1		40	
		B1		80	
840		J1		30	
		J4		60	coal ends
		J4		10	
845		B1	B	90	
		B4	W	90	
		J4	C	40	
850					

GRAPHIC LOG: BRECCIA/GOUGE ☐ BROKEN CORE ☒

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

NATURAL FRACTURE FREQUENCY: 20 15 10 5 0

PERMEABILITY

	RQD	NFF
825–830	21/60	0/60
830–835	12/60	1/60
835–840	0/60	1/60
840–845	14/60	0/60
845–850	0/60	1/60

LOGGED BY: K. Heck & S. Siska

DATE: 14/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-formation 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
850		J4	3	0	1				24/60	0/60	
		B4	3	30	1						
855		J4	3	60	4						
855		B4	B	80	1				21/60	1/60	
		B1	B	80	1						
		J1	B	30	1						
860	860	J4	C	30	1				40/54	0/54	
		J4	3	30	4						
865	864.5	J4	C	0	1				55/60	0/60	
870	869.5	J4	C	5	1				47/60	0/60	
		J4	3	30	3						
		J4	C	50	1						
		J4	3	0	2						
875	874.5'										

LOGGED BY: K. Heck & S. Siska

DATE: 14/05/77

PROJECT No.

Golder Associates

Hole No. 461

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
875		J4	W	0							
		J4	C	5							
		J4	W	10							
		J4	W	0					34/60	9/60	
		J4	C	25							
880	879.5'	B4	C	80							
		J4	W	5							
		J4	W	0					33/60	8/60	
		J4	W	5							
		J4	C	15							
885	884.5										
	Coal				100% recovery				35/60	3/60	
		B4	C	90							
890		J4	C	20							
	890	J1	C	20							
		J4	C	30						3/60	
		J4	B	0							
895	895								30/60	2/60	
		B1	B	90							
900	900										

LOGGED BY: K. Heck + S. Siska

DATE: 15/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ____ OF ____

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
900		J4	C	5	2
		B1	B	90	2
		J4	B	80	2
905		J4	C	50	1
		B1	B	90	1
910		J4	C	10	1
		B1	B	90	1
915		J4	W	0	1
920		J4	W	5	1
		J4	C	5	1
925					

GRAPHIC LOG — BRECCIA/GOUGE ☐ BROKEN CORE ▨

HARDNESS 4 3 2

ROCK QUALITY DESIGNATION 75 50 25

27/60 — 40/60 — 23/60 — 54/60 — 50/60

NATURAL FRACTURE FREQUENCY 20 15 10 5 0

6/60 — 2/60 — 1/60 — 3/60

PERMEABILITY

LOGGED BY: K. Heck + S. Sicka

DATE: 15/05/77

PROJECT No. _____

Golder Associates

Hole No. 46f

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
925	925								48/60	1/60	
930	930	B4	B	80	1						
935		J4	W	10	2				55/72	3/72	
		B4	C	0	1						
940	936								58/60	0/60	
	941	J4	W	15	1				57/60	2/60	
945		B1	B	20	1						
950	946								53/60	0/60	

LOGGED BY: K. Heck & S. Siska

DATE: 15/05/77

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 295 10 5	PERMEABILITY
950											
951									47/60	0/60	
955											
956		J4	W	10	2				44/60	3/60	
		J1	W	20	1						
960											
961		J4	W	20	2				55/60	3/60	
		J1	C	30	1						
965											
966									41/60	3/60	
		J4	C	30	2						
970		J4	C	30	1						
971		J4	C	20	1				40/60	5/60	
		J4	C	25	2						
975											

LOGGED BY: K. Heck & S. Siska

DATE: 15/05/87

PROJECT No. _____

Golder Associates

Hole No. 461

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SQUASH / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
975											
976		SI	C	10	2						
		J1	C	20	1				39/48	2/60	
980	980	J1	C	30	1						
		J1	C	26	1				54/60	1/60	
985	985										
		J1	W	12	1				42/60	4/60	
		J1	C	19	1						
990	990	J1	C	19,0	2						
		J1	C	10	1				29/60	3/60	
		J4	C	37	1						
995	995	J1	C	30	1						
		J1	C	10	1				29/60	5/60	
		J4	B	30	1						
		J4	C	10	1						
		J1	C	30	1						
1000	1000	J1	C	30	1						

LOGGED BY: K. Heck

DATE: 17/05/77

PROJECT No.

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1000		JN	C	35	1							
		JI	C	10	1					20/60	4/60	
1005		JI	C	30	2							
		JI	C	30	1							
		JN	C	10	1							
		JI	C	25	1					38/60	6/60	
		JI	C	8	1							
1010		JI	C	10	1							
		JI	C	0	1							
		JN	C	30	1							
		JN	C	0	1					37/60	3/60	
1015		JI	C	15	1							
		J	C	0	1							
		JI	C	10	1					34/60	2/60	
1020												
1025										19/60	2/60	
		JN	C	5	1							
1025		JI	C	20	1							

LOGGED BY: K. Heck
DATE: 17/05/77
PROJECT No. _____

Golder Associates

Hole No. _____
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1025		JI	C	15	1					29/60	3/60	
		JI	C	0	1							
		JI	C	5	1							
1030										52/60	1/60	
		JI	C	30	1							
1035										33/60	1/60	
		JI	C	5	1							
1040										37/60	4/60	
		JI	C	10	1							
		JI	C	18	1							
		JS	C	0	1							
		JI	C	22	1							
1048										34/60	0/60	
1050												

LOGGED BY: K. Heck

DATE: 17/05/77

PROJECT No.

Golder Associates

Hole No. 461

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1050					Coal begins						
	100% recovery	JI		20	1				0/60	2/60	
1055		JI		25	1						
1055		JI		40	1				11/60	3/60	
	100% recovery	JI		60	2						
1060											
	100% recovery	JI		30	1				0/60	2/60	
1065		JI		45	1						
1065	100% recovery	JI		30	1				10/60	1/60	
1070											
	100% recovery								0/60	0/60	
1075											

LOGGED BY: K. Heck
DATE: 17/05/77
PROJECT No.

Golder Associates

Hole No. 461
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1075		J4		40	1							
	100% recovery	J1		40	1					0/102	0/102	
1080												
1083.5												
1085	100% recovery											
1088.5		J1		35	1							
		J1		45	1							
1090		J1		40	1	End of coal				0/60	2/60	
1093.5												
1095		J1	B	40	1					26/60	2/60	
		J1	B	40	1							
1098.5												
1100		J1	C	25	1							

LOGGED BY: R. Heck
DATE: 17/05/77
PROJECT No.:

Golder Associates

Hole No. 461
SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1104		JI	C	10	1					55/60	2/60	
1105		JI	W	10	1					57/60	3/60	
		J4	C	20	1							
1109		JI	W	10	1							
1110		J4	C	5	1					46/60	3/60	
		JI	C	15	1							
1114		JI	C	0	1							
1115		J4	C	10	2					39/60	4/60	
		JI	W	15	1							
1119		JI	C	0	1							
1120					END OF BOH							

320

LOGGED BY: _____
DATE: _____
PROJECT No. _____

Golder Associates

Hole No. 461
SHEET ___ OF ___

IK-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	320	PERMEABILITY
0					TRICONE							
5												
10												
11		B1	C	65°	2							
		J1	F	20°	1							
		B1	C	65°	2							
15		B1	C	65°	3							
16												
18												
20												
21												
22		B1	C	70°	1							

LOGGED BY: [illegible]

DATE: 31/10/77

PROJECT No. 1

Golder Associates

Hole No. 6-11

SHEET ___ OF ___

K- FOUNDING 22(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY	PERMEABILITY
26		JI	C	20°	1						
		BI	C	60°	2						
		JI	C	10°	1						
		BI	C		2						
		JI	C	10°	2						
31		BI	C	65°	1						
31		BI	W	60°	1				35/60	4/60	
		JI	F	20°	2						
35		BI	C	60°	2						
36		BI	C	60°	1						
		BI	F	65°	1						
		JI	F, A	30°	1				27/60	5/60	
		BI	F	65°	1						
		BI	F	65°	1						
		JI	F, A	30°	1						
40		BI	F	65°	1						
41		BI	F	65°	1						
41		BI	F, B	60°	1						
		BI	F, B	60°	1				12/60	4/60	
		BI	F, B	60°	2						
45											
46											
46		BI	B	60°	1						
		BI	B	60°	1				42/60	5/60	
		BI	B	60°	1						
		BI	B	60°	1						
50											

LOGGED BY: K. Heck & S. Sinha

DATE: 21/03/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
50											
51		Bl	B	65°	1						
		Bl	B	65°	2				26/60	1/60	
		Bl	B	65°	1						
		JI		40°	1						
		J4		40°	1						
		Bl	B	65°	4						
55		J4	F	20°	1						
56											
56		JI	FA	30°	1						
		Bl	B	60°	3						
		J4		30°	1				44/60	5/60	
		Bl	B	60°	1						
		JI	F	30°	1						
60		Bl	B	60°	1						
61											
61		Bl	B	60°	2						
		Bl	B	60°	2				40/60	8/60	
		Bl	B	62°	2						
65		Bl	B	62°	2						
66											
66		Bl	Q	40°	1						
		J1	C	20°	1						
		Bl	B	40°	1				48/72	5/72	
		Bl	B	40°	1						
70		Bl	B	40°	1						
72											
72		Bl	B	40°	1						
		Bl	B	70°	1						
		Bl	B	70°	1				44/60	5/60	
75		Bl	B	70°	1						

LOGGED BY: K. Heck & S. Siska

DATE: 06/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K-FORDING 77(34

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS
75		B1	B	70°	1
77		B1	B	50°	2
		B1	B	70°	1
77		B1	B	60°	1
		J1	B	10°	1
		B1	B	60°	1
		B1	B	10°	1
80		B1	B	60°	2
		B1	B	30°	1
82		B1	B	60°	2
82		J1	B	30	1
		B1	B,F	70°	2
		B1	B,F	70°	2
85		B1	B,F	70°	2
		J4		10	1
87					
87		B1	B	90	1
		B1	B,F	90	2
		B1	B	40	1
90		B1	B	90	2
		J1	C	20	1
92					
92					
95					
97		B1	B	60°	1
		J1	B	0	1
97		B1	B	60°	1
		J1	A,F	5°	1
100		B1	B,F	70°	1

GRAPHIC LOG | BRECCIA/GOUGE | BROKEN CORE | HARDNESS (4 3 2) | ROCK QUALITY DESIGNATION (75 50 25)

	ROCK QUALITY DESIGNATION	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)
75		
77	40/60	6/60
80		
82		
82	36/60	5/60
85		
87		
87	42/60	6/60
90		
92		
92	60/60	1/60
95		
97		
97	51/60	3/20
100		

320

PERMEABILITY

↓ B1 recorded only to 600'

LOGGED BY: K. Heck & S. Siska
DATE: 06/05/77
PROJECT No.

Golder Associates

Hole No. 641
SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
100		B1	C	80°	1							
102												
102		B1	B	60°	1							
		J4	B	10°	1				52/60	3/60		
105		B1	B	80°	1							
		J1	B	30°	1							
107		B1	B	65°	1							
107												
		B1	B	90°	B							
		J4	B	60°	1				36/60	9/10		
110		B1	B	30°	1							
		B1	B	60°	2							
		B1	B	30°	1							
112		B1	B	90°	1							
112												
		B1	B	90°	1							
		B1	B	30°	2							
		J4	B	80°	3				40/60	1/60		
115		B1	B	60°	1							
		B1	B	60°	1							
		J4	B	60°	1							
117												
		B1	B	90°	1							
		B1	B	90°	1							
		J4	B	30°	1				38/60	3/60		
120		J4	C	25	1							
		B1	B	90°	1							
		J1	A	90°	1							
122		J4	C	90°	1							
122												
									48/60			
125												

LOGGED BY: R. Heck + S. Siska

DATE: 06/05/77

PROJECT No.

Golder Associates

Hole No. 641

SHEET ___ OF ___

K - BORING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
125		B1	A		1						2/60	
127		B1	A,B		1							
127		B1	B	40	1							
		J1	A	30	1						3/60	
		B1	B	50	1							
130		J4	F	10	1					46/60		
		B1	B	60	1							
132												
132		B1	A,B		2					35/31	3/60	
		J4			1							
135		B1	A		1							
135												
		J1	F	10°	1					18/24	0/24	
137												
137		J4	E,W	10°	4					42/60	1/60	
140												
142		B1	F	60°	1							
142		J1	F	10°	1					31/60	3/60	
		B1	F	70°	1							
		J4	F	20°	1							
145		B4	F	80°	2							
147												
147										60/60	1/60	
		B1	C	65	1							
150												

LOGGED BY: K. Heckd S. Siska

DATE: 06/05/77

PROJECT No.

Golder Associates

Hole No. 641

SHEET ___ OF ___

K. FORDING 77(31A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
150											
152											
152		J4	F	10°	1						
		B4	C	60°	1				56/60	1/60	
		J1	W,F	30°	1						
155		J4	F	5°	1						
157											
157		J4	C	30°	1						
		B1	B	60°	1						
		J1	F	20°	1				46/60	2/60	
		B1	B	70°	1						
160											
162		J4	F,B	20°	1						
162		J1	F,A	0°	1						
		B1	B	90°	2						
		B1	B	70°	3				33/60	6/60	
165		B1	B,A	80°	1						
		J1	C	30°	1						
167		J4	C	20°	1						
167											
		B1	B	70°	2						
		B1	B	70°	1				50/60	4/60	
170		B4	B	70°	1						
		J4	B,F	10°	1						
172		J4	B	0°	1						
172											
		B1	B	70°	1						
		B1	B	65°	1				22/60	3/60	
175											

LOGGED BY: K. Heck + S. Siska

DATE: 09/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
175		Bl	C	70°	1						
		J4	M,W	30°	1						
177											
177		Bl	B	70°	1				45/60	2/60	
		J1	F	40°	1						
		J1	W	20°	1						
180		Bl	B	75°	1						
		J4	W	10°	1						
182											
182		J1	C	30°	3				40/60	3/60	
		Bl	B	70°	1						
185		Bl	C	90°	2						
		J4	B,M	0°	1						
187											
187		Bl	B	70°	1				33/60	5/60	
		Bl	B	70°	3						
		J4		30°	1						
190		J1	C	60°	1						
		Bl	B,M	60°	1						
192											
192		Bl	B	70°	1				42/60	1/60	
195		J4		20°	1						
197											
197		J1	B,W	20°	1				29/60	1/60	
		Bl	B	70°	1						
		J1	B,W	70°	1						
200											

LOGGED BY: K. Heck & S. Siska

DATE: 10/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
200											
202											
202									40/60	Ø/60	
205		J4		20°	1						
207											
207		J4	C	0°	1						
		B1	W,B	60°	1				37/60	1/60	
210		J4	B,W	30°	2						
		J4	W	30°	1						
212		J4	B	50°	1						
212											
		J1	B	30°	1				48/60		
		B1	B	80°	1						
215		J1	C	0°	1						
		J4		30°	1						
217											
217											
		B1	B	50°	2				50/60	2/60	
220											
222											
222											
		J1	W	30°	1				56/66	3/60	
225		B1	B	70°	2						

LOGGED BY: K. Heck + S. Siska

DATE: 10/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K- FARDING 77(3)A

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	320	PERMEABILITY
225		JI	C	0°	1							
		BI	C	70°	1							
227												
227		JI	C	40°	1				56/60	0/60		
		JI	C	50°	1							
230												
232												
232		JI	W	20°	1				54/60	2/60		
		JI	W	20°	1							
235		BI	C	90°	2							
237												
237		[illegible]	B		4				56/60	1/60		
		[illegible]	B		2							
240		BI	C	60°	1							
242												
242		JI	W	20°	1				44/48	0/48		
		JI	C	20°	1							
		JI	W	90°	2							
245												
246		JI	C	30°	1							
246		JI	W	30°	1				42/60	2/60		
		BI	W	60°	1							
		JI	W	30°	1							
250		BI	C	60°	1							

LOGGED BY: K. Heck + S. Siska

DATE: 10/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
250											
251											
251		J4	C	30°	2				44/48	0/48	
255											
255		J4	C	10°	1						
		J4	C	30°	1				57/60	0/60	
		J1	C	30°	1						
260		J4	C	30°	2						
260		B1	B	80°	1						
		J1	C	20°	1				41/60	3/60	
		J1	C	20°	1						
		B1	B	80°	1						
		J1	C	20°	1						
		J1	C	20°	1						
265		B1	C	70°	1						
265		B1	B	70°	1						
									69/72	2/72	
		J1	C	20°	1						
		B1	B	70°	1						
270											
271											
271		B1	C	80°	1						
		J1	C	30°	1				34/48	1/48	
		J4	C	10°	2						
275	275										

LOGGED BY: K. Heck + S. Siska

DATE: 11/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
275											
275		J4	C	30°	2				48/60	1/60	
		J4	C,W	30°	2						
		J4	C,W	40°	1						
		J4	C,W,M	30°	1						
280		B1	B	80°	1						
280	280	B1	C	300/90°	1/2				39/60	3/60	
		J1	C	30°	2						
		B1	C	80°	1						
285	285										
	288	J4	C	30°	1				47/66	0/66	
		J4	C	30°	2						
290	290.5	J4	C	40/20°	2						
	290.5	J4	C	60°	1				25/144	0/144	
		J4	C,W,M B1	40/60°	2						
295		J4	C	100°	1						
		J1	C	30°	2						
300											

LOGGED BY: K. Heck + S. Siska

DATE: 11/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
300											
302.5		J4		30°	1						
302.5		J4	B	40°	1						
		J4		40°	2				17/66	2/66	
305		B1	B	70°	1						
		B4	W	60°	1						
308		B1	C	60°	1						
		J1	B	60°	1						
308											
	5% coal lost	B1	B	60°	2				7/48	1/48	
310		J1	B	30°	1						
312		J4	B	30°	1						
312		B1	B	80°	1						
	5% coal lost	J4	B	20°	3				22/60	3/60	
315		B1	B	40°	1						
317											
317											
		J4	B	60°	2				23/60	1/60	
320		J4	B	30°,50°	2						
		B1	B	90°	1						
322											
322											
		J1	B	30°	1				5/60	2/60	
325		B1	B	80°	1						

LOGGED BY: K. Heck + S. Siska

DATE: 11/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
325		J4	B	100°	2						
		B1	B	80°	1						
327											
327											
	5% coal lost	B1	B	80°	1				12/60	N/60	
330		B1	B	80°	1						
		B4	W	75°	1						
332		B4	W	80°	1						
332											
		J4	B	10°	1				32/60	1/60	
		B1	B	90°	1						
335		B4	W	90°	2						
		J4	B	50°	1						
337		J1	B	50°	2						
337											
		J1	B	60°	2						
		J4	W	70°	1				14/60	1/60	
		B4	B	90°	1						
340		J4	W	10°	3						
		J1	B	70°	2						
342		B1	B	90°	1						
342											
		J4	B	60°	5						
		B1	B	80°	1				32/60	3/60	
345		B4	B	80°	1						
		B1	B	80°	1						
		J4	W	40°	1						
347		B1	W	30°	1						
347											
		J4	W	0°	2				56/60	1/60	
350		B1	B	70°	1						

LOGGED BY: K. Heck & S. Siska

DATE: 11/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ____ OF ____

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
350												
352		J4	C	30°	4							
352		B1	W/B	70°	2				25/60	4/60		
355		B1	B	90/70°	2							
357		J4	W	30°	1							
357		J4	C	30°	2				20/60	0/60		
360		J1	C	50°	1							
362												
362									34/60	1/60		
365		J4	C	30°	2							
367		J4	C	30°	2							
		B1	C	90°	1							
367		B1	C	90°	1				15/60	1/60		
370		J4		30°	2							
372		J4		0°	1							
372									12/60	1/60		
375												

LOGGED BY: K. Heck & S. Siska

DATE: 11/05/77

PROJECT No. _____

Golder Associates

Hole No. 64

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
375		J1		60°	3						
		J1		30°	1						
		J1		30°	1						
377		B1		80°	1						
377	3% lost	B1		90°	1				15/60	2/60	
380		J4		50°	2						
382		B1		60°	1						
		J1		60°	1						
382		J4		40°	1				19/60	4/60	
		B1		80°	1						
385		J1		50°	2						
387		B1		55°	3						
387	END OF COAL	J1		60°	1				21/60	2/60	
		B1		90°	1						
		J4	W	40°	2						
390		J4	W	30°	1						
		B1	B	90°	1						
392		J4	W	0°	1						
392											
		B1	B	90°	1				22/60	2/60	
		B1	B	90°	1						
395		J1	W,B	30°	2						
397		B4	B	80°	1						
397		J4	W	20°	2				24/60	4/60	
		B1	B	80°	1						
400											

LOGGED BY: K. Heck & S. Siska

DATE: 11/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K. FORDING 77(3)A

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	320	PERMEABILITY
400												
402		B1	B	90°	3							
402		J4	C	60°	1				10/60	2/60		
		J4	C	80°	1							
405		B1	B	90°	1							
407		B1	C	80°	1							
407		J4	B	30°	1				35/60	2/60		
		J1	B	40°	1							
410		B1	B	80°	1							
		J4	B	20°	1							
412		B1	B	80°	1							
412		B1	B	90°	1				31/60	2/60		
415		B1	B	80°	1							
417												
417												
		J1	W,B	40°	1				49/60			
420		J1	B	60°	1							
		J1	B	30°	1							
		J4	W	30°	1							
		B1	W,B	90°	1							
424												
424		J1	W,B	30°	3							
425												

LOGGED BY: K. Heck & S. Siska

DATE: 12/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K. FORDING 77/3/A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
425		J4	C	20°	2						
									50/84	0/84	
		J4	W	10°	1						
430		J4	C W	100	1						
431		J1		10°	1						
431		J1	C	25°	1						
		J1	C	25°	1				44/60	1/60	
435		J4	W F	10°	2						
436		B1	C	80°	1						
		J4	W	0-10°	1						
436		J4	W	10°	1						
		J1	W	30°	1				50/60		
		B1	B W	90°	1						
		J1	B W	22°	1						
440		J1	W	5°	1						
441											
441	~30% of coal is missing										
									40/240		
445											
450											

LOGGED BY: K. Heck & S. Siska

DATE: 12/05/77

PROJECT No. _____

Golder Associates

Hole No. 64

SHEET ___ OF ___

K. Fordine 71(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
450											
	~30% coal is missing										
455											
460											
461											
461									50/60	1/60	
465		B1	B	80°	1						
466											
466									33/60	4/60	
470		B1	B	90°	4						
471											
471	70% of core missing								67/72	0/72	
475											

LOGGED BY: K. Heck + S. Siska

DATE: 12/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K. FORDING 72(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
475												
477		J4	C	20°	2							
477		B1	B	90°	1					53/60	1/60	
		J4	W	30°	1							
480												
482												
482										29/60	6/60	
485		B1	B	90°	3							
487		B1	B	90°	3							
		J4	C	10°	3							
487		B1	W,B	80°/70°	2					37/60	3/60	
		J4	W	0°	1							
490		J4	C	10°	1							
492		B1	B	85°	1							
492										33/60		
		B1	B	80°	1							
495		B1	B	80°	2							
		J1	C	5°	2							
497		J4	W	30°	1							
497		J4	W	0°	1					32/60	1/60	
		J1	C	40°	1							
		B1	C	90°	1							
500		J4	W,B	40°	2							

LOGGED BY: K. Heck & S. Siska

DATE: 12/05/77

PROJECT No. _____

Golder Associates

Hole No. 64

SHEET ___ OF ___

K. FORDING 77(3)

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
500											
502		J3 J4	C C	30° 00	1 2						
502		B1	B	80°	2				40/60	2/60	
		B4	W	80°	1						
505		J4	W	0°	2						
		J4	W	30°	3						
507											
507		B1	B	80°	1				34/60	2/60	
		J1	W	30°	1						
510		B1	B	90°	1						
512											
512		J4	W	10°	1				34/60	0/60	
515		J4	C	0°	1						
		J4	C	0°	1						
517											
517		J4	W	30°	1				32/60	6/60	
		J1	B	30°	1						
520		J4	W	70°	2						
		B4	B	90°	1						
522											
522	3 70 coal lost	B1	B	60°	1				25/60	4/60	
525		B1	B	60°	1						

LOGGED BY: K. Heck + S. Siska

DATE: 12/05/77

PROJECT No. _____

Golder Associates

Hole No. 64

SHEET ___ OF ___

K-Fording 77/3/a

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS
525					
527		B1	B	40°/80°	2
527					
		J4	B	40°	2
		J1	B	30°	2
530		B1	B	90°	1
532					
532					
		J4	B	40°	3
535		B1	B	80°	1
537					
537	5% coal lost				
		B4	B	80°	1
540					
		J4	B	80°	1
542					
542					
		B4	B	70°	2
		B4	B	40°	1
545		B4	B	60°	1
547					
547					
		J1	C	0°	2
		J1	B,W	80°	1
550					

GRAPHIC LOG: BRECCIA/GOUGE ☐ BROKEN CORE ▨

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25): 19/60; 15/60; 18/60; 34/60; 38/90

NATURAL FRACTURE FREQUENCY (20 15 10 5 0): 1/60; 1/60; 4/60; 0/90

320

PERMEABILITY

LOGGED BY: K. Heck & S. Siska

DATE: 12/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▩	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
550		J1	B,W	60°	1				18/54	2/54	
		J4	C	60°	1						
554'6"											
555		B4	W	30	1						
		J4	W	60	1				43/66	4/66	
		J1	WB	0	1						
		J1	WB	30	1						
560											
560		J4	W	30	3						
		J4	W	10 30	2				46/60		
		J1	WB	5	1						
		B4	W	70	2						
		B4	W	70	1						
565	565										
565		J1	C	20	1						
		J1	W	0	1				34/60	3/60	
		J1	C	15	1						
570	570										
570	60%	J1	BW	0 20	2				35/180	6/180	
		B4	W	50	1						
		J1	BW	20	1						
575											

LOGGED BY: K. Heck & S. Siska

DATE: 12/05/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
575		J1	WB	0	2						
	60%								35/180	6/180	
580											
585		J1	AWB	0	1				5/40	3/48	
		J1	WB	0	2						
589											
		B4	C	40	1				10/36	2/36	
590		J1	BW	25	1						
592											
		B4	C	90	1				33/60	7/60	
		J1	C	30	1						
595		B4	C	40	1						
		B4	C	40	1						
597		B4	C	50	3						
		J4	W	5	1				18/60	10/60	
		J4	W	5	1						
600		J4	W	15	1						

LOGGED BY: SIRCA & HECK

DATE: MAY 15/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5 0)	PERMEABILITY
600		J4	W	15	1				60/60	60/60	
		J4	W	15	1						
		J4	W	15	1						
602		J4	W	80	H						
		J4	C	30	1						
		J1	WB	10	2						
		J4	C	45	2						
		J4	C	10	2						
605										21/120	
		J1	WB	30	1				94/120		
		J4	W	0	4						
		J4	W	20	2						
		J1	WBW	30	5						
610		J1	W	10	1						
612		J4	W	20	1						
		J4	W	20	1						
		B1	W	90	1						
615									40/120	5/120	
		B1	WB	50	2						
		B1	B	50	1						
620											
622											
									45/60		
625											

LOGGED BY: SISKA & HECK

DATE: MAY 15/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K. FORDING 77(3)

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 10 20 30	PERMEABILITY
627											
627								C			
		J1	C	10	1				55/60	3/60	
630											
632		J4	W	25	1						
		J1	B	50	1						
		J4	W	15	2				34/60	6/60	
		J1	C	10	1						
		J2	C	5	1						
635		J4	C	5	1						
637											
		J2	WB	20	1				55/60	2/60	
640											
642		J1	B	15	1						
		B4	B	35	1				19/60	3/60	
		J1	B	25	1						
645		J1	B	10	1	CORE ↓ (R7)					
647											
									9/60		
		J1		5	1						
650											

LOGGED BY: SISKA + HECK

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K - FORDING 7763A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
650		J1		0 10	2						
652											
		J1		00	2				21/60	3/60	
655											
		J1		0	1						
657											
		J1		90	2				11/60	3/60	
660											
662		J1		10	1				5/28		
		J1		0	1					1/60	
665											
666											
		J1	B	0	1 (mudstone interbed)				1/66	1/66	
		B4	B	80	2 (						
670											
671.5		J1		25	1						
	20%								18/60	2/60	
675		J1		15	2						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY	PERMEABILITY
675											
676.5	10%								18/60	3/60	
680	25%										
681.5											
685	100% recovery of coal	J1		40°	2				13/48	2/48	
685.5											
689	100% recovery of coal	J2 J1		40° 0	2 2				13/14	4/49	
690	100% recovery of coal	B1		90	1				0/36	1/30	
692											
695		B1	C	90	1	End of coal			35/60	1/60	
697											
Tot		B1	SW	70	3				55/60	4/60	

LOGGED BY: K. Heck
DATE: 16/05/77
PROJECT No.

Golder Associates

Hole No. 641
SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
700		B1	C	80	1						
702											
		J4	C	12	1						
		J4	C	45	3						
705		B1	C	60	1				54/60	6/60	
		J1	C	10	1						
707											
		J4	C	90	2						
		J4	C	22	1						
		J1	B	60	1						
		J1	B	4	1				32/60	7/60	
710		J4	C	15	1						
		B1	B	75	1						
712											
		J1	C	12	1						
		B1	C	40	1						
		J4	C	20	1				56/60	4/60	
715											
		J1	C	28	1						
717											
		B4	C	65	1						
		J4	C	0	1						
720		J4	C	90	2				38/60	6/60	
		J4	C	28	1						
		J4	C	22	1						
722		B4	C	80	1						
		J4	C	30	1						
									69/60	2/60	
725		J1	C	29	1						

LOGGED BY: K. Heck
DATE: 16/05/77
PROJECT No.

Golder Associates

Hole No. 641
SHEET ___ OF ___

K - FOLDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
725											
730		J1	C	30	1				49/60	1/60	
732											
735		J1	C	12	2				55/60	4/60	
		B1	W	45	1						
737		B1	W	65	1						
740		B1	W	70	1				60/60	3/60	
742		B1	B	50	2						
745		J1	C	23	1				56/60		
		J4	W	25	2						
747		B1	B	90	1						
750									49/60	0/60	

LOGGED BY: K. Heck

DATE: 16/05/77

PROJECT No.

Golder Associates

Hole No. 641

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS
750					
752					
		BA	W,B	52	2
		JA	C	0	2
755					
		JI	W	17	1
757		J4	C	10	1
		I4	W	29	1
		BA	W	65	1
760		JI	W	15	1
		J4	W	0	1
762					
		JI	C	5	1
		J4	C	0	1
765					
767					
		B4	W	78	1
770		J4	W	20	1
772					
		BI	W	85	1
		JI	W,B	30	2
775					

GRAPHIC LOG — BRECCIA/GOUGE ☐ BROKEN CORE ▨

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25)

56/60	6/60
52/60	4/60
46/60	2/60
52/60	2/60
44/60	5/60

NATURAL FRACTURE FREQUENCY (20 15 10 5 0)

PERMEABILITY

LOGGED BY: K. Heck
DATE: 16/05/77
PROJECT No.

Golder Associates

Hole No. 641
SHEET ___ OF ___

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
775												
777	100% recovery	Bl JA	W C	50 5	1' coal							
		J1 J4 J4 J1 Bl	W/B C W W W	25 20 12 21 70					48/60	6/60		
780												
782					Start of coal							
	100% recovery of coal								9/60	1/60		
785		J1		0								
787					End of coal							
		J4	W	0					45/60	4/60		
790		J1 J1	B,W B,W	30 95	2 1							
792												
		J4 J1	C B	37 18					21/60	3/60		
795												
797		JA	W	80								
		J1 J4	B,W W	5 0	1 2				31/60	3/60		
800												

LOGGED BY: R. Heck
DATE: 16/05/77
PROJECT No.:

Golder Associates

Hole No. 691
SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (30 15 10 5 0)	PERMEABILITY
800											
802											
		J4	3	36	2				60/60	4/60	
		B1	3	90	1						
805		J1	U	90	1						
807											
									57/60	2/60	
810											
812		J4	U	11	1						
		J1	W,B	27	1						
		J1	U	15	1						
		B4	3	72	1						
		J4	U	15	1				55/60	6/60	
815		B1	3	63	1						
817		J1	3	16	2						
		J4	3	14	1						
									54/60	3/60	
		J1	U	18	1						
820		J1	3	20	1						
822											
		J4	U	25	1						
		J1	U	35	1						
		J1	333	29	1				51/60	9/60	
		J4		12	B2						
825		B1		50	1						

LOGGED BY: K. Neck
DATE: 16/05/77
PROJECT No:

Golder Associates

Hole No. 641
SHEET ___ OF ___

K - fording 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
825		Bl	C	50	1							
		Bl	C	50	1							
827		Bl	C	58	1							
		Bl	W	53	1							
		Jl	C	36	1				51/60	1/60		
830		Jl	C	14	1							
832		Jl	W	38	1							
		Jl	W	18	2							
		J4	W	12	1				56/60	5/60		
835		Bl	W	80	1							
837		J4	C	17	1							
		J4	W	10	1				55/60	3/60		
840		J4	W	30	1							
842		J4	W	0	1							
		J4	C	15	1				56/60	2/20		
845		Jl	BW	20	1							
847												
									55/60	2/60		
850												

LOGGED BY: K. Heck
DATE: 16/05/77
PROJECT No. _____

Golder Associates

Hole No. 641
SHEET ___ OF ___

K - FORDING - 7763A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
850		J4	W	43	1						
852		J1	C	5	1						
		B4	W	40	1				45/60	4/60	
		B4	W	40	1						
855		B4	W	40	1						
857		J1	C	0	1						
		J1	C	5	1						
		J4	W	40	4				60/60	17/60	
		B1	B	30	1						
		B4	C	70	6						
860		J4	C,W	30	4						
		J1	B	35	1						
862		J4	C	30	2						
				70							
		J1	BW	40	2				27/60	9/60	
865											
		J4	C	40	3						
867		J4	W	40	2						
				30							
		J4	W	30	3						
									14/60	10/60	
870											
		J4	W	40	2						
		J1	C	30	1						
872		J4	W	40	2						
		J4	W	30	3						
				70							
		J4	C	25	2				46/60	10/60	
		J1	W	20	2						
875		J1	B	30	1						

LOGGED BY: S. SISKA

DATE: MAY 16/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ____ OF ____

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
875		J4	W	40	2				40/60		
877		J1	BW	30	1				46/60	3/60	
880		J1	BW	40	1						
		J4	W	10	1						
882		J4	C	20	3				55/60	9/60	
		J1	BW	20	2						
		J4	W	60	3						
		J4	C	10	3						
885		J4	C		4						
		J1	BW	20	2						
887		J4	C	20	1						
		J4	C	20	3				47/60	12/60	
		J4	W	50	3						
		J4	W	0	2						
890		J4	W	30	3						
892		J1	BW	20	1						
		B4	W	60	2				52/60	6/60	
		B4	WB	60	1						
895		J4	W	5	2						
897		J4	W	25	1						
		D1	B	40	2				45/60	13/60	
		J4	W	40	2						
		B1	B	40	1						
900		J4	W	70	5						

LOGGED BY: S. SISKA
DATE: MAY 16/77
PROJECT No.

Golder Associates

Hole No. 641
SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
900		B1	B	30	1				45/60	13/60	
		J4	W	70	2						
902											
		B1	WB		2						
		B1	WB		3				0/64	9/60	
905		J4	W	80-90	4						
907											
		B1	B	40	2				56/60	5/60	
		B4	W	40	1						
910		J4	W	40	2						
912											
		B1	C	40	1				49/60	8/60	
		J4	C	20	1						
915		J4	W	30-40	5						
		B1	B	50	1						
917											
		J4	W	50	3				20/60	9/60	
920											
		B1	B	50	1						
		J4	W	30-70	5						
922											
		J4	C	20	3				54/60	9/60	
		J4	C	15	2						
925		B1	C	80	1						
		J4	W	80	2						

LOGGED BY: S. SISKA
DATE: MAY 16/77
PROJECT No.:

Golder Associates

Hole No. 641
SHEET ___ OF ___

K- FORDING 77/3a

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5 0	PERMEABILITY
925		B1	UD	80	1					87/60	9/60	
927												
		J4	W	40	2					76/60	4/60	
		1										
930		B1	B	80	2							
932												
		[illegible]			2							
		J1	B	10	1					40/60	9/60	
		B1	B	85	1							
935												
		J4	W	20	2							
		J4	W	30	4							
937		J4	W	40	1							
		J4	C	30	1					39/60	10/60	
		B1	B	80	1							
940												
		J4	C	20-30	4							
		B1	BW	60	1							
942		J4	C,W	20-40	3							
		J4	C	60	2					34/60	10/60	
		J4	B,W	50	1							
945		B1	B	75	1							
		J4	W	0	1							
		J4	W	60	3							
947		B1	B	80	2							
		B4	B	80	1					25/60	4/60	
950		B1	B	80	1							

LOGGED BY: S. SISKA

DATE: APR 6/77

PROJECT No.: _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K- foreDINE 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
950		J4	C	30	1				50/60	4/60	
		B4	B	80	1						
952											
		J4	W	40	2				45/60	1/60	
958		J4	C	50	1						
		J4	C	30	1						
		B4	B	80	1						
857											
		J4	B,C	80	2				50/60	4/60	
960											
		J4	C	30	2						
962											
		J4	C,W	40	2				90/120	11/120	
965	10%	B4	B	80	2						
		J4	C	60	1						
		J4	C	30	2						
		J1	WB	40	1						
970		J4	C	20	3						
972											
									50/60		
977											

LOGGED BY: S. SISKA

DATE: MAY 16/77

PROJECT No.

Golder Associates

Hole No. 641

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (20 15 10 5)	PERMEABILITY
975		J4	C	160	2					55/60		
		J4	W	20	1							
977		J4	C	40	3							
		B1	B	100	2							
		B4	B	100	2					55/60		
		J4	C	50	1						6/60	
980		J4	C	50	1							
982												
										43/60		
		J1	C	140	2						9/60	
985		J4	C	140	7							
987												
		J1	C	140	1							
		J4	C	140	3							
		J1	C	140	3					43/60	10/60	
990		B1	B	75	1							
992		J1	C	150	2							
		J4	C	150	2							
		J1	C	150	3					45/60	10/60	
		J4	C	160	2							
995												
		J4	C	160	3							
997		J1	WC	160	2							
										37/60	6/60	
		J4	C	160	4							
1000												

LOGGED BY: S. SISKA
DATE: MAY 16/77
PROJECT No.:

Golder Associates

Hole No. 64

SHEET ___ OF ___

K-formation 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 30 15 10 5 0	320	PERMEABILITY
1000		B1	B	75	2				37/60	8/60		
		B4	B	80	2							
1002												
		T4	C	150	2							
		B1	B	90	4 COALY SECTION				25/60	10/60		
1005												
		B4	B	80	3							
1007		B1	B	80	1							
1010										2/60		
1012												
1015										1/60		
1017												
1020										1/60		
		T4	C	15	1							
1022												
1025												

LOGGED BY: D SICKLE

DATE: MAY 16

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K-FORDING 77(3A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
1025											
1027		J1	C	25						1/60	
1030										0/60	
1032											
1035		J4	C	70	3				54/60	3/60	
1037											
1040		J4	B	65	1				56/60	2/60	
1042		J1	C	15	1						
1045		J4	C	7	3				60/60	4/60	
		J4	C	10	1						
1047											
		J1	B	15	1				56/60	2/60	
1050											

LOGGED BY: S. SISKA & K. HECK

DATE: MAY 17/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
1050											
1052		BP	C	80	1				56/60	7/60	
1055									48/60	7/60	
		JY	W	20	2						
		JY	C	0	4						
1057		JY	B	0	1						
1060									58/60	1/60	
1062		JY	W	5	1						
		JY	W	0	2				45/60	6/60	
		J1	B	45	1						
1065		J1	B	37	1						
		JY	W	0	1						
1067		BP	W	45	1						
		JY	W	15	1				40/60	5/60	
			C	0	2						
1070		JY	W	35	3						
1072											
		JY	W	70 20	2				52/60	8/60	
		JY	W	10	3						
1075		JY	C	15,30	2						

320

LOGGED BY: S. SISKA & K. HECH

DATE: MAY 17/77

PROJECT No.

Golder Associates

Hole No. 64

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (15 10 5)	PERMEABILITY
1075											
1077									52/60	8/60	
		J2	W	30	2						
		J4	W	30	1				47/60	9/60	
		J4	W	70	1						
1080		J1	B	25	2						
		J4	W	0	2						
		J4	W	27	1						
1082											
		J4	W	30	2				52/60	5/60	
1085											
		J4	W	85	2						
1087		J1	B	5	1						
		J4/J1	C	0/5	2				91/120	7/120	
	10%	J4	C	30	1						
1090											
		J1	W	30	1						
		J4	W	50	2						
		J1	WB	25	1						
1095											
1097									54/60		
1100											

LOGGED BY: S.SISKA & K. HECK

DATE: MAY 17/77

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ____ OF ____

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
1100											
1102		J4	WB	50	1				57/60		
		J4	WB	25	1				17/60	4/60	
1105		J1	W	21	1						
		J4	C	25	1						
1107		J2	WB	10	1						
		J4	C	40	3				17/60	9/60	
		J4	W	30	2						
1110		J4	W	10	1						
		J1	BW	20	1						
1112		J4	W	20/35	2						
					↓ COAL SEAM STARTS						
		J1	C	45	1				5/60	N/A	
1115											
1117											
		J1	C	10	1				9/60	N/A	
1120											
1122											
										N/A	
1125					↓ COAL SEAM ENDS						

POSSIBLE FAULT ZONE

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K-FORDING 7(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (>45 45-30 30-15 15-5 <5)	PERMEABILITY
1125		J1	C	45	1				16/60	5/24	
1127		J1	K	0	1						
		G1	D	70	0						
		J1	W	0	1				55/60	6/60	
		J1	W	10	1						
1130		J	W	5	1						
		J1	W	0	1						
		J4	C	40	1						
1132		J1	C	45	1						
		J1	C	45	1				51/60	6/60	
		J4	C	65	1						
1135		J1	C	85	1						
		J4	C	05	1						
		J1	W	5	1						
1137											
		J4	C	30	1				27/60	4/60	
		J1	C	30	1						
		J1	C	25	1						
		J	C	0	1						
1142					1142 END OF DDH # 641 (HIGHLY FRACTURED ZONE)						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 641

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
0					TRICONE						
5											
10		J4	F	30	2						
		J1	F	30	1				32/60	6/60	
		J4	F,A	30	1						
		J1	F	30	1						
15	16	B4	C	90	1						
		J1	F	30	1						
		J1	F	30	1				51/60	6/60	
		J4	F		2						
		J1	F,A	30	1						
20		B1	A	30	1						
	21	J4	C	40	1						
		J4	C	30	2						
		J1	F	30	1						
		J4	F	90	1						
		J8	F,A	30	2				38/60	7/60	
		J4	C	0	1						
25		J4	C	5	1						

LOGGED BY: S. SIEKA
DATE: MAY 17/77
PROJECT No. _____

Golder Associates

Hole No. 642
SHEET 1 OF _____

K - FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
25											
26											
	35%	J1	F	40	2				18/60	9/60	
		J1	F	85	3						
		B1	F,B	80	2						
30		J1	F	50	4						
31											
	5%	B1	A,F	80	1				40/72	3/72	
		B1	F	90	1						
35											
37		J4	W	20	1						
		B1	B	80	1				44/60	5/60	
		B1	F	75	2						
		J1	F	25	1						
40		B1	B	85	1						
42											
		B1	B	80	3				20/60	9/60	
		J1	F	5	1						
		B1	F	80	1						
45		J1	F	5	1						
		B4	B	75	2						
47		B1	F	75	1						
		B1	F	90	1				30/60	4/60	
		F1	C	35	1						
		F1	F	20	1						
50		J4	F	40	1						

320

LOGGED BY: S. SISKA

DATE: MAY 17/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET 2 OF

K- FOLDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▩	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
50												
52												
		B1	FB	90	1							
55									50/60	2/60		
57		B1	A	75	1							
		J1	FB	60	1							
		J4	W/F	50	2				32/60	6/60		
60		B1	C	90	1							
		J1	F@	10	1							
62		J1	W	35	1							
		J4	F	15	3							
		J1	F	10	1				30/60	5/60		
65												
67		B1	F	70	1							
		J4	W	15	1							
		B1	F	60	1							
		J4	C	10	1							
		J4	V	20	1				43/60	6/60		
		J4	V	40	1							
70												
		J4	F,W	60	2							
72		J1	F	60	3							
		J1	F	60	1				25/60	10/60		
		B1	F	95	1							
75												

LOGGED BY: S.SISKA
DATE: MAY 17/77
PROJECT No. _____

Golder Associates

Hole No. 642
SHEET 3 OF _____

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
75		J1	R	60	1				25/60	4/60	
		J4	W	N15	5						
77		J4	A	60	2						
		J4	F	0-10	4						
		B1	FW	70	1				24/60	9/60	
80											
		B1	F	85	1						
82		F1	F	15	2						
		J4	C	0	1				48/60	21/60	
85											
87		J1	C	5	1						
		J1	F	20	1				52/60	2/60	
		B1	F	70	1						
90											
92											
		J1	C,A	15	4				92/120	7/120	
95		J1	F	20 40	2						
100		B1	C	90	1						

320

LOGGED BY: S. SISKA

DATE: MAY 17/77

PROJECT No. _____

Golder Associates

Hole No. 642

SHEET 4 OF _____

K. FORDING 77/3A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
100												
102												
		B1	C	15	1					57/60	2/60	
		B1	B	75	1							
105												
107												
	5%									55/60	1/60	
110												
112		B1	B	75	1							
		J4	W	30	1					53/60	3/60	
		B1	B	80	1							
115												
117		B1	B	80	1							
		J1	C	0	2					39/60	6/48	
		J4	W	30	2							
120												
		J1	C	0	2							
122												
		J1	W	0	1					54/60	4/60	
		J1	W	0	1							
125		J1	W	15	2							

LOGGED BY: S. SISKA

DATE:

PROJECT No.

Golder Associates

Hole No. 642

SHEET 5 OF

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (30 15 10 5 0)	PERMEABILITY
125										54/60	4/60	
127		J4	W	30,20	2							
		J4	C,W	50	2					51/60	5/60	
130												
132		J4	W	20	1							
		J1	F,A	60,10	2					79/60	7/60	
		J4	W	10,30	2							
135		J4	F	40	2							
		B1	C	65	1							
137												
		J1	F	30						5/60	4/60	
		J1	F	35	2							
140												
		J4	W	30	1							
142												
										54/60	4/60	
145												
		B4	B	80	2							
147		B1	B	80	1							
		B1	B	80	1					46/60		
		B4	O	80	2							
150		J1	B	30	2							

LOGGED BY: J. SISKA

DATE:

PROJECT No.

Golder Associates

Hole No. 642

SHEET 6 OF

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5	PERMEABILITY
150												
152												
	100% Rec.	J1	X	30	1 ↑ COAL SEAM					24/60	6/60	
155		J1	X	60	1							
157												
	40% Rec.	B1	B	70	1					18/48	3/48	
160					Mudstone interbed							
		B1	B	80	1							
		J1	C	80	2					22/60	3/60	
165												
166		B1	C	75	1							
	1											
		J1	C	30/60	2					30/60	7/60	
170												
171												
		B1	C	75	2					32/60	6/60	
		J1	C	30	1							
		J1	C	60	1							
175		D1	C	80	2							

LOGGED BY: S. SICHA
DATE: MAY 18/77
PROJECT No.

Golder Associates

Hole No. 642
SHEET 7 OF

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
175												
176										37/60		
		B1	C	80	1							
		B4	C	50	2							
	12% missing									29/72	5/72	
		B4	C	80	1							
180		J2	C	30	1							
182												
		B1	C	90	1							
		J1	C	80	1					28/60	4/60	
	100% Recovery											
185		J1	C	30	1							
		J1	C	60	1							
187												
		B1	C	90	2							
	100% Rec.									25/60	4/60	
190		J1	C	30	1 & COAL SEAM ENDS							
		G1	C	90	4							
										38/60	6/60	
		B1	B	85	2							
195		J1	W	40	1							
		J4	W	40	2							
197		B1	C	80	1							
		J4	W	30	1					21/60	6/60	
		J4	W	45	1							
		B1	B	75	1							
200		J1	B	25	1							

LOGGED BY: S. SISKA

DATE: MAY 16/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET 2 OF

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▧	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5	PERMEABILITY
200		B1	B	75	1				21/60	6/60	
		J4	C	40	1						
202											
		J4	W	90	1				26/60		
		B1	B	90	2						
		J1	W	60	1					7/60	
		J1	W,B	0	1						
205		B1	B	90	1						
		J4	W	30	1						
207											
		J4	B	0	1				38/60	4/60	
210		J4	C	35	1						
		B1	W	65	1						
		J1	C	20	1						
212											
		J4	W	0	3				32/60	3/60	
		J1	W	30	1						
		J1	W	12	1						
215		J4	C	10	2						
217											
		J1	B	0	1				38/60		
		J4	B	0	1						
220											
222		B1	W,B	90	1						
	100% recovery	J1		45	1 Coal begins at 222'				18/60	2/60	
225											

LOGGED BY: K. Heck

DATE: 18/05/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET 8 OF

K. FOLDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
225												
227		J1		40	1							
	100% recovery								40/60	0/60		
230												
232												
	100% recovery	J1		10	1				20/60	3/60		
235		J1		45	1							
237												
	90% recovery	J1		50	1				18/60	2/60		
240		J1		45	1							
242												
	100% recovery								29/60	0/60		
245												
247												
	95% recovery								27/60	2/60		
250												

LOGGED BY: K. Heck
DATE: 18/05/77
PROJECT No.

Hole No. 642

K-formerly 77/30

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▨ BROKEN CORE ▩	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 2 5 10 50	PERMEABILITY
250											
252		J4		15	2						
	10% 20 recovery	J1		60	2				23/60	3/60	
255											
257		J4		0	1						
		J1	B	45	1				32/60	2/60	
260					End of coal						
262		B1	B	90	1						
		J1	B	40	2				38/60	3/60	
265		B1	B	90	1						
267											
		J1	C	30	1				44/60	3/60	
270		J1	C	25	1						
		B1	B	90	1						
272											
		B1	W	90	1				23/60	4/60	
275		J4	B	20	1						
		B1	B	90	1						
		J1	B	40	1						

LOGGED BY: K. Heck
DATE: 18/05/77
PROJECT No.:

Golder Associates

Hole No. 642
SHEET 11 OF

K. FORDING 77/3/0

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
275					coal begins at 275						
277	100% recovery				coal ends						
		J4	C	60	1						
		B1	W	90	1				35/60	4/60	
280		J1	B	40	1						
		J1	W,B	30	1						
282											
		J1	C	45	1				38/60	2/60	
285											
287		J1	W	40	1						
									33/60	2/60	
290		J1	W	0	1						
292		J4	W	15	1						
		J1	W	20	1				48/60	4/60	
295		B1	W	60	1						
		J1	W	30	1						
297		B1	W	90	1						
									58/60	2/60	
		J4	W	0	1						
300											

LOGGED BY: K. Heck
DATE: 18/05/77
PROJECT No.

Golder Associates

Hole No. 642

K - FORDING 7763

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY (30 15 10 5 0)	PERMEABILITY
300											
302		J4	W	0	1						
		J4	W	0	2						
		B1	W	45	1				43/60	4/60	
305											
307		B1	W	90	1						
		J4	W	0	1				23/60	2/60	
		J1	C	10	1						
310											
312											
		B1	C	60	7				1/60	19/60	
		J4	W	40	4	SHEARED ZONE					
		B1	C	60	6						
315		J4	W	45	1						
		B1	C	60	1						
317											
		Impossible to define FRACTURES, but mainly B1, sheared							0/60	>20/60	
320											
322											
	5% Loss	J1	C	60	1				37/60	7/60	
		B1	C/B	60	3						
		B1	C	90	1						
		J1	W	30	1						
325		J1	W	25	1						

LOGGED BY: K. Heck
DATE: 18/05/77
PROJECT No.:

Golder Associates

Hole No. 642
SHEET 13 OF

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▯ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 40 30 20 5	320	PERMEABILITY
325												
327	5% LOST								37/60	7/60		
		J1	C	30	1							
		J4	C	90	1							
		B1	B	90	2				32/60	5/60		
330		J1	C	0	1							
332		J4	C	30	1							
		J1	C	25	1				34/60	2/60		
335												
337		B1	C	90	1							
		B1	C	90	2							
		J1	C	35	1				34/60			
		B1	B	90	2					9/60		
		B1	C	80	1							
340		J1	C	5	1							
342		J1	C	0	2							
		B1	A	90	1							
		J4	C	60	2							
		B1	B	90	2				21/60	7/60		
345												
347		B1	B	90	2							
		B1	B	90	1							
		J1	B	35	1				22/60	2/60		
		B1	B	90	3							
350												

LOGGED BY: S. SISKA
DATE: MAY 19/77
PROJECT No. _____

Golder Associates

Hole No. 642
SHEET 16 OF _____

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
350		J1	B	90	1					22/60	1/60	
		J1	W	30	1							
		J1	W	0	1					27/60	5/60	
		B1	B	90	1							
355		J1	W	10	1							
		B1	B	90	1							
357		B1	B	90	1							
		J1	C	15	1					32/60	5/60	
		J4	W	10	2							
360		J4	C	15	1							
362		B1	B	90	1							
	40% Lost	J1	WB	40	1					19/36	4/36	
		J4	W	0	2							
365												
367		B4	W	90	1							
	65% Lost				Probably highly sheared zone Fractures (mainly F1) filled with W					0/17	N/A	
370												
371					371'-376' COAL							
	40% Lost	J1	C	40	1					15/36	2/36	
375												

320

LOGGED BY: S. SISLA
DATE: MAY 19/77
PROJECT No.

Golder Associates

Hole No. 642
SHEET 15 OF

K - FORDING 7(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CRUSHED/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
375		J1	B	30	1						
326											
	15% LOST	J4	W	10-50	5				20/60	21/60	
		J1	B	40	1						
		J1	B	50	2						
		J4	W	40	5						
		J4	W	40	2						
380		B1	B	60	2						
381											
		B1	B	70	2						
		J4	W	60	2				44/60		
		B1	B	48	1						
		B1	B	55	1					15/60	
		J4	W	0-20	3						
		J4	W	20	1						
385		B1	B	45	2						
		J4	W	20	1						
386		B1	B	45	2						
		B1	B	40	2				10/60		
	5% LOST	J4	W	30-70	4					11/60	
		B4	W	65	2						
		B1	B	60	2						
390		J4	W	0	1						
391											
		J1	B	10	1						
		J1	B	30	2				29/60		
		B1	B	60	3					4/60	
		B4	W	80	2						
		J1	WB	20	1						
395		B4	W	50	2						
396											
		J4	W	30	2				40/60	6/60	
		J4	W	0	1						
		B4	W	80	2						
400											

LOGGED BY: S. SISKA

DATE: MAY 19/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET 16 OF

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
400												
401		B4	W	80	1							
		B1	W	70	1							
		B4	W	90	2					32/60	8/60	
		B4	W	55	2							
		B1	W	80	1							
405		J1	C	25	1							
406		B1	W	90	1							
		B4	W	5	2					50/60	9/60	
		B1	W	90	3							
		B4	W	0	2							
		B1	W	70	1							
410		B4	W	85	1							
411		B1	W	90	2							
		J1	C	25	1							
		B4	W	60	1					25/60	14/60	
		J1	B	35	1							
		B4	W	50	3							
		B4	W	60	2							
415		B1	W	70	2							
416												
		J1	B	35	1							
		J1	W	30	1					48/60	4/60	
		J4	W	5	1							
		J4	W	0	1							
420												
421												
		J1	C	25	1							
		B4	W	65	1					57/60	3/60	
		B4	W	70	1							
425												

LOGGED BY: K. Heck
DATE: 19/05/77
PROJECT No.

Golder Associates

Hole No. 642
SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
425											
426											
		J1	B	30	1						
		J4	W	0	1				46/60		
430											
431											
		J1	W	35	1						
		J4	W	25	1				46/60	3/60	
435											
436		J1	C	42	1						
		J1	B	35	1						
		J1	BW	33	1				35/60	4/60	
		J1	B	0	1						
440		J1	B,W	60	1						
441											
		J1	W	0	1						
		J1	W,O	5	2				49/60	6/60	
		J4	W	35	2						
445		J1	W,O	25	1						
446											
		J1	W	20	1				52/60	6/60	
450		J4	W	20	1						

LOGGED BY: K. Heck
DATE: 19/05/77
PROJECT No.

Golder Associates

Hole No. 642
SHEET ___ OF ___

K-fording 77(3)A

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY	PERMEABILITY
455											
457		J4	W	10	2				52/60	6/60	
		J4	W	20	2						
		J4	W	20	2				47/60	5/60	
455		J1	C	50	1						
456											
460									55/60	1/60	
461		J1	BW	25	1						
									52/60	2/60	
465											
466		B1	WB	70	2						
									29/72	6/72	
		J1	B	35	1						
		B1	B	60	1						
470		J1	B	40,50	2						
		J1	B	30	2						
472											
		J4	W	40	2				55/60	4/60	
475											

LOGGED BY: S.S.

DATE: MAY 30/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ☐ BROKEN CORE ☒	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 10 15 10 5 0	PERMEABILITY
475		JY	C	20	1				55/60		
477		J1	B	40	1						
480		J1	C	45	1				52/60	6/60	
		JY	W	30	3						
482		J1	C	50,40	2						
		J1	C	35	1				33/60	6/60	
		JY	W	0	1						
		J1	C	40	2						
485		J1	B	35	1						
487		J1	B	30	1						
		J1	B	30	1				47/60	6/60	
		J1	B	30	2						
490											
492		J1	B	40	3						
		J1	B	30	2				40/60	7/60	
		J1	B	40,30	3						
495											
497		J1	B	50	2						
	40% Loss	B1	B	80	2				16/60	3/60	
		B1	B	70	1						
500					↓ COAL SEAM						
505											

LOGGED BY: S.S.

DATE: May 20/77

Golder Associates

Hole No. 642

SHEET ____ OF ____

K. FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS (499)	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
500												
502	40%									10/60		
505	52% Loss	N/A								0/60	N/A	
507												
510	100% Recovery	J1	C	60	2 C 6					9/93	2/36	
513	100% Recovery	J1	C	60	2 4 L					0/360	5/36	
		J1	C	60	3							
515	12% Loss	J1	C	60	3					0/48	3/48	
517		J1	C									
		J1	C	60	1							
520	100% Recov.	J1	C	20	2					15/60	4/60	
522		J1	C	45	1							
	100% Recov.	B1	C	75	2	522'-527' Siltstone conglomerate				14/60	9/60	
525		J4	W	30	1	(to 533')						
		B1	C	70	2							

320

LOGGED BY: S.S.

DATE: MAY 20 1977

Golder Associates

Hole No. 642

SHEET OF

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE ☐ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5 0	320	PERMEABILITY
527		B1	C,B	80	3							
532		B1	C	55	3				0/60	9/60		
		B1	C	50	2							
		B1	C	2	4							
		J1	C	20	1 ▽ 533 bottom of COAL SEAM				45/60	1/60		
537												
		B1	B	80	1				50/60	2/60		
542		B1	B	80	1							
		J1	C	5	1				52/60	3/60		
		B1	B	70	1							
547		B1	B	55	1							
	20% LOSS	B1	WB	60	1				29/60	4/60		
		B1	C	40	1							
550		B1	C	80	1							

LOGGED BY: S.S

DATE: MAY 20/77

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	320	PERMEABILITY
552	20% Loss	B1	CW	70	1							
557									58 / W	0 / 60		
560		B4	B W	60	1				60 / 60	1 / 60		
562												
565		J4	W	10	1				60 / 60	6 / 60		
		J4	C	30	2							
		J4	C	30	1							
567		J4	C	20	1							
572		J4	C	10	1				60 / 60	1 / 60		
575									60 / 60	3 / 60		

LOGGED BY: S.S.

DATE: MAY 20/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET ___ OF ___

K. FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▯ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
575		B1	B	60	1				60/60	3/60	
		J1	C	35	1						
577		J4	C	20	1						
		B1	BW	50	2				47/60	7/60	
580		J4	W	60	3						
		B1	B	25	2						
582											
		J4	W	65	2				54/60	6/60	
585		J1	C	35	1						
		J1	WC	30-60	3						
587											
		B1	B	60	2				50/60	7/60	
		B1	B	60	1						
		J4	W	65	2						
590		J1	W	35	1						
		J4	C	60	1						
		J4	C	50	1						
592											
		J4	C	5	1				55/60	4/60	
		B1	B	60	2						
595											
		J4	C	30	1						
597											
									54/60	3/60	
600											

LOGGED BY: S. Sinha

DATE: May 23/77

Golder Associates

Hole No. 642

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
602		B1	D	80	1					54/60	3/60	
		J1	BW	20	2							
		J1	BW	20	2					45/60	9/60	
		J1	BW	10	2							
605		J1	C	0	1							
607		J4	C	30	4							
		J1	W	30	2							
		J4	W	20-30	4					20/60	14/60	
610		J1	WB	40,60	2							
612		B1	B	~70	6							
		B1	BW	50	2							
		B1	BW	40	1					39/60	4/60	
615		J4	C	5	1							
617												
		J1	WB	??	2							
		J1	WB	40	2					35/60	7/60	
		J1	WB	30	1							
620												
622		B1	B	80	2							
						622'-626' COAL Disintegrated				N/A	2/60	
625												

LOGGED BY: S.G.

DATE: MAY 23/77

Golder Associates

Hole No. 642

SHEET ___ OF ___

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
625												
627		J1	BW	60	2				N/A	2/60		
		J4	W	10	3							
		B1	B,W	55	3 B1 are sheared (SLIKS)				24/60	10/60		
630												
632		J1	W	55	4							
		J1	B	30	2							
		B1	BW	~80	5				27/60	15/60		
		A1	BW	80	1							
635		B1	BW	90	1							
		J4	W	0	3							
637		J1	BW	30	3							
		J4	W	30	3				55/60	5/60		
		B1	BW	75	1							
640		J4	W	30	1							
642												
		B1	B,W	58	15				26/60	26/60		
		J1	WB	20	3							
645		J4	WB	30	5							
647		J4	W	70	2							
									24/60	N/A		
650												

LOGGED BY: S.S.

DATE: MAY 23/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▯ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
650											
652					647-655 core contains numerous hair-like cracks filled with calcite, orientation is random, no J1 or J4 but ~12 B1				26/60	N/A	
655		B1	B	65	3				52/60	3/60	
657											
		B1	B	65	2						
		J4	W	30-60	5				46/60	9/60	
660											
662		J4	C	30	2						
		J1	C	10	1						
		B1	B	65	1				10/60	4/60	
665					carbonaceous mudstone (disintegrated)						
		J4	W	75	1						
667		J1	C	75	1						
									34/60	1/60	
670											
672		J1	WB	60	1						
									55/60	2/60	
675		J4	C	25	1						

320

LOGGED BY: S.S.
DATE: MAY 23/77

Golder Associates

Hole No. 642
SHEET ___ OF ___

K-FORDENG 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
675													
677		J4	C	0	1					55/60	2/60		
		B1	BW	35	1								
680		B1	Bw	50	1					54/60	2/60		
682													
		J4	W	60	2								
685		B1	B	75	1					41/60	6/60		
		J1	W	10	1								
687		J1	W	30	2								
		J4	C,W	55	2								
		B1	B	85	2					43/60	5/60		
690													
692		J4	W	10	1								
		J4	W	0	2								
		J4	W	50	1					42/60	3/60		
695													
697													
		B1	WB	60	1					58/60	3/60		
700													

LOGGED BY: S.S.

DATE: MAY 23/77

Golder Associates

Hole No. 642

SHEET ___ OF ___

K. FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
700		B1	W	85	1				58/60	3/60		
		B	C	65	1							
705		B1	WB	75	1				56/60	2/60		
		B1	C	80	2							
	707											
		J1	QB	80	2				57/60	1/60		
710		J4	W	60	2							
	712	B	B	70	1							
		J1	C	0	1				55/60	3/60		
715		J4	W	0	2							
	717											
		B1	B	80	1				55/60	5/60		
		J1	C	10	1							
		J4	C	60	1							
720		B1	B	75	1							
		J1	C	20	1							
		J4	W	30	2				45/60	4/60		
		B1	B	90	1							
725												

LOGGED BY: S.S.
DATE: MAY 23/77

Golder Associates

Hole No. 642
SHEET OF

K- FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	320	PERMEABILITY
725												
727		J4	C	40	1							
730		J1	B	50	3				44/60	3/60		
732												
735		B1	B	60	2				47/60	3/60		
737		J4	W	20	1							
740		J1	C,W	20,30	2				38/60	7/60		
		J1	W	35	1							
		B1	B	50	3							
		J1	C	10	1							
742												
744		J1	C	80	3	Highly fractured zone			N/A	0/24		
		B1	C	90	2							
		J1	C	20	3							
745		J1	WB	40	1				37/60	7/60		
		J1	B	40	1							
		J1	WB	40	2							
		J1	C	40	1							
		J1	W,C	40	1							
749		J1	C	40	1							
750		J1	CW	40/15	2							

LOGGED BY: S.S.
DATE: MAY 23/77

Golder Associates

Hole No. 642
SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	320	PERMEABILITY
750												
		J1	W	35	1				52/60	6/60		
		J1	W	35	1							
754		J1	C	40	2							
755		J1	B	25	1				55/60	4/60		
		B1	C	80	2							
759		B1	B	80	1							
760		B1	C	85	2				56/60	3/60		
764		B1	C	85	1							
765		J1	C	40	1				50/60	6/60		
		J4	W	40	1							
		B1	B	70	2							
		B1	B	70	1							
769		B1	B	70	1							
770		B1	C	70	1				56/60	4/60		
		B	B	70	2							
774		J1	C	20	1							
775		J4	W	25	1							

LOGGED BY: S.S.

DATE: MAY 23/77

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)D

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▯ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
778												
		B1	B	70	1				58/60	3/60		
779		J1	C	40	1							
780												
		J4	W	25	1				47/60	5/60		
		J4	B	20	2							
		J1	B	10	1							
784		J4	C	0	1							
		J4	B	40	1							
785		B1	B	60	1				46/60	3/60		
		J1	B	60	1							
789												
		J1	C	15	1							
790		B1	B	70	1				46/60	6/60		
		J1	MB	30	1							
794		B1	B	~70	3							
		J4	C	10	1							
795		J4	W	40	1							
		B1	B	85	1				46/66	8/66		
		J1	MB	20	1							
		B1	B	85	1							
		J1	B	40	2							
799.5		B1	B	80	1							
800												

LOGGED BY: S.S.

DATE: MAY 24/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25 %	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
800		B1	B	50	2				42/60	9/66	
		J1	B	30	2						
		J1	B	80	2						
		B1	B	80	3						
805		B1	B	~80	3				50/60	6/60	
		B1	B	80	1						
		B1	B	80	2						
810		B1	B	60	1				60/60	3/60	
		J4	C	20	1						
		B1	B	75	2						
815		J1	C	0	1				60/60	3/60	
		J4	C	0	2						
820		J1	BW	25	2				60/72	9/72	
		B1	B	85	3						
		J1	C	20	1						
		J4	C	20	1						
825		B1	B	60	2						

LOGGED BY: S.S.

DATE: MAY 24/77

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 776/6

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
825											
826		J1	C	30	1				44/60	12/60	
		B1	B	50	2						
		J4	C	20	2						
		J4	C,W	10	2						
830		B1	B	70	4						
831		J1	B	20	1						
		B1	B	60	5				40/60	9/60	
		B4	B	45	2						
835		J1	C	30,60	2						
836											
		B4	B	80	1				53/60	4/60	
		B4	B	80	1						
840		B4	B	70	2						
841.5											
		B4	B	55	3				45/60	6/60	
		J4	C	15	2						
845											
846.5		B4	B	65	1						
		B4	B	80	2				60/60	2/60	
850											

LOGGED BY: S.S.

DATE: MAY 25/77

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE ▯ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
850											
857.5									60/60	2/60	
		B4	B	65	2						
		B4	B	70	2				42/60	6/60	
855		B4	B	80	1						
856.5		B4	B	60	1						
		B4	B	70	1						
		B1	B	70	1				JR/66	4/66	
		B4	B	75	2						
860											
862											
865		J4	C	15	1				60/60	1/60	
867											
870		J4	C	25	1				60/60	1/60	
872											
875									60/60	2/60	

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LOGGED BY: S.S.

DATE: MAY 25/76

PROJECT No.

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
875		B4	B	80					60/60	1/60	
880		B4	B	80	1				60/60	2/60	
882		J4	C	65	1						
885		J4	C	40	2				56/60	5/60	
887		J4	C	40	3						
890		J1	D	20	1				57/60	3/60	
892		D	BW	80	1						
895		B4	BW	80	1				52/60	2/60	
897		B4	B	60	1						
900		B4	B	80	1				57/60	2/60	
		B4	B	70	2						

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LOGGED BY: S.S.

DATE: MAY 25/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE ▯ BROKEN CORE ▨	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
902									57/60	2/60		
905		J4	W	60	1				60/60	2/60		
907		J4	W	70	1							
910		J4	B	70	2				58/60	3/60		
912												
915		B1	70	B	2				57/60	4/60		
917		B4	80	B	2							
920		J1	C	30	1				60/60	1/60		
922												
925		B4	C	75	1				58/60	1/60		

LOGGED BY: S.S.

DATE: MAY 25/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 45 40 5 0	320	PERMEABILITY
925												
927										1/60		
		51	C	10	1				50/60	1/60		
930												
932									60/60	0/60		
935												
937												
		J4	C	0	1				60/60	1/60		
940												
942												
									60/60	2/60		
945												
947		J4	B	60	2							
		J4	B	45	1				60/60	3/60		
950		J4	B	80	2							

LOGGED BY: SS.

DATE: MAY 25/77

PROJECT No.

Golder Associates

Hole No. 642

SHEET ___ OF ___

K - FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
950											
952									60/60		
955									60/60	0/60	
957											
		B4	B	60	1				55/60	4/60	
964		B4	C,B	~80	3						
962											
		J4	W	50	1				41/60	3/60	
		J4	W	20	1						
965		J1	B	40	1						
967											
	10% CORE LOSS				COAL (R4)				8/60	Destroyed core	
970											
972											
		D1	B	60	Gouge 1				47/60	4/60	
		J1	C	20	1						
975											

LOGGED BY: S.S.

DATE: MAR 25/77

Golder Associates

Hole No. 642

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
975		B1	B	80	1							
977		J4	W	30	1					47/60		
		J4	W	20	2					52/60	2/60	
980												
982												
		J4	W	10	1					48/60		
		B1	B	65	1							
985		J4	W	45	2						5/60	
987		J1	W	40	1							
										60/60		
990											1/60	
992		B1	B	80	1							
		J1	W	0	1					35/60	4/60	
		J4	C	20	2							
995												
		J1	WD	45	1							
997					END OF DDH 642 MAY 25/77							

LOGGED BY: S.C.

DATE: MAY 25/77

Golder Associates

Hole No. 642

SHEET ____ OF ____

K. FORDING 77(3)N

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUND/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 10 15 20 5 0	PERMEABILITY
0					TRIASSIC						
5											
10											
15											
20											
23	100% RECOVERY				23'-36' COAL						
25											

LOGGED BY: S. SISKA
DATE: MAY 26/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
25	100% RECOVERY										
27											
30	20% LOSS				23'–36' COAL COAL IS HIGHLY WHEATHER AND DISSINTEGRATED, NO OTHER PARAMETER EXEPT HARDNESS CAN BE RECORDED						
32											
35	100% RECOVERY										
37											
40	20% LOSS				CORE IS FRACTURED N EVERY 1–2 inches						
42											
45	60% RECOVERY						COAL COAL				
47											
50		J1 J1 B1	C C C	35 35 90	2 1 1				25/60	7/60	

LOGGED BY: S. SISKA
DATE: MAY 26/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K. FORDING 77/31A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
50		J4	C	20	1					23/60	2/60	
52		B1	C	90	2							
		B1	C	75	1							
		J4	C	45	1					22/60	2/60	
		J1	C	90	1							
		J1	C	80	2							
55		J4	C	45	1							
		B1	B	90	1							
		J4	C	15	1							
57												
		B1	B	90	2							
		J1	C	40	1					30/60	9/60	
		J4	C	20	1							
60		J4	C	40	1							
		J4	W	20	1							
		B1	C	90	2							
62												
		B1	D	90	2					31/60	7/60	
		J1	W	30	2							
		B1	B	70	1							
65		J1	C	20	1							
		B1	D	70	1							
66												
		J2	D,W	~90	5					10/60	42/10	
		J1	BW	10	1							
		J1	W	30	1							
69.5		B1	D	~90	3							
70		J4	GW	40	2					19/30	6/30	
		B1	B	80	1							
72		J4	C	40	3							
	22%	J1	C	10	1					17/60	3/60	
	45%	J1	C	30	1							
75												

71'-94' COAL

LOGGED BY: S.SISKA

DATE: MAY 26/77

PROJECT No.:

Golder Associates

Hole No. 643

SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
75					
77	24%	J1	Jo	C	1
	100% RECOVERY	J4	C	50	1
		B1	C	77	2
		J4	C	50	3
		J4	C	40	3
80		B1	C	80	2
80.5		B1	C	60	4
	100% RECOVERY	B1	C	65	4
		B1	C	65	2
		J1	C	35	2
		J4	C	20	2
85		J1	C	5	1
85.8					
		B1	C	90	1
		J4	C	30	4
		J1	C	35	2
		B1	C	65	2
90					71'-94' COAL
90.8					
		B1	C	80	3
		J4	C	40	4
		J4	C	30	1
94					
95		B1	C	90	2
		J1	C	40	1
		B1	C	75	2
99					
100		J1	J	0	1

GRAPHIC LOG | BRECCIA/GOUGE | BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

NATURAL FRACTURE FREQUENCY: 20 15 10 5 0

PERMEABILITY

17/60 | 3/60 | 15/82 | 16/42 | 35/65 | 11/65 | 25/60 | 9/60 | 17/38 | 7/7 | 35/60 | 5/60

LOGGED BY: S. SISKA
DATE: MAY 26/77
PROJECT No.:

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUND/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
100		B4	B	90	2				50/72	5/72	
		B4	B	80	2						
105		J4	B,C	30	2				22/60	9/60	
		B4	B	75	3						
		B4	B	75	2						
		J4	B	40	1						
110		B4	B	80	1				16/30	1/30	
113											
115		J4	C	30	1				43/60	8/60	
		J1	B	30	1						
		J1	B	85	1						
118											
120		J4	B	65	1				31/48	5/48	
		J4	B	75	2						
122		B4	B	90	2						
125		B4	B,W	70	2				43/60	4/60	

LOGGED BY: C.S.
DATE: MAY 77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-forging 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COUSE (B) BROKEN CORE (BC)	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
125											
127		B4	B	70	2				43/60	4/60	
		J1	B	30	1				39/60		
		B4	B	~75	4					6/60	
130											
132		B4	B	65	1						
									52/60	3/60	
135		J4	C	50	3.						
137											
									54/60	5/60	
140											
142		B4	C	90	1						
		J4	C	0-30	4						
									60/60	2/60	
145		J1	CW	30	2						
147											
									52/60	5/60	
		J1	C	40	1						
150		J4	C	40	2						

LOGGED BY: [illegible]

DATE: [illegible] 77

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K-FORDING 77(3)N

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUND ROCK BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	320	PERMEABILITY
150												
152		J4	Q,C	40	2				52/60			
		J4	Q,C	0,30	2							
		J1	C	15	1				43/60	5/60		
155		J1	C	35	1							
157		J1	B,W	60	1							
									55/60	2/60		
160		J1	C	40	1							
		J1	B	40	1							
162												
									54/60	4/60		
165		J1	B,C	~30	3							
167		J1	B	20	1							
		J4	W	20	1							
		J1	W	0	1							
		J4	C	90	1				15/60	6/60		
170		J1	C	30	1							
		J4	B	30	2							
172												
									58/60	1/60		
175												

LOGGED BY: S.S.
DATE: DEC 77
PROJECT No.:

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FORDING 77(3)a

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOLUBLE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
175												
177		J1	C	30	1						60	
										50/60		
180		J4	C	20	2						4/60	
		J1	C,F	5,20	2							
182												
										52/60		
185											2/60	
		J1	B	35	1							
187		J1	M	35	1							
										52/60		
190		J4	C	0	1						1/60	
192												
										55/60		
195		J4	C	5	1						6/60	
		D1	BM	65	1							
		J1	F,M,B	0	2							
		J4	C	20	2							
197												
		B1	B	~80	3					33/60	11/60	
		J1	B	~40	2							
		J4	B	10	1							
200		B4	B	80	3							

LOGGED BY: S.S.

DATE: MAY 77

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
200												
202		BY	B	60	2					B3 / 60	11 / 60	
		BY	3	60	1							
		BY	B	60	1							
		BY	3	60	1					38 / 60	6 / 60	
205		BY	B	60	1							
		JY	C	20	1							
207		JY	C	20	1							
		BY	C	65	3							
		BI	B	85	1					47 / 60	9 / 60	
		BY	B	20	3							
210												
		JY	C	25	1							
212		JI	B	40	1							
		JY	C	25	1							
		BY	B	60	2					32 / 60	11 / 60	
215		BY	B	60	3							
		BY	B	65	3							
217		BY	B	65	2							
		BY	B	65	1							
		BY	B	65	2					51 / 60	4 / 60	
220		BY	B	75	1							
222												
										54 / 60	4 / 60	
		JY	C	10	2							
225												

LOGGED BY: S.S.
DATE: MAY 28/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K - FOLDING 7(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/CRUSHED CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
225		J4	C	0	2						
227											
		J4	C	10	2						
		B1	B	80	2						
		J4	C	10	3						
230											
		B4	B	75	2						
232											
		B4	B	80	1						
		J4	C	40	1						
		B1	B	60	1						
235											
		B1	B	65	2						
237		B4	B	65	2						
		B4	B	85	1						
		J1	B	20	2						
		J4	B	20	2						
240											
242		J1	B	30	2						
	20%	J4	C	15	1						
		J1	B	10	1						
245											
		J4	B	40	1						
247		J4	B	35	3						
		B1	B	65	1						
		J1	B	35	1						
250											

LOGGED BY: S SISKA

DATE: MAY 28 1992

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
250											
252		JY	B	30	2				38/60	10/60	
		JY	B	0-20	3						
		BY	B	~75	3				20/60	N/A	
255		J1 B1 J1 B1	B B B B		CORE IS INTENSIVELY BROKEN UP PROBABLE SHEAR ZONE						
257											
		BY	B	90	1				45/60	6/60	
		BY	W	80	1						
260		BY	B	70	2						
		BY	B	75	2						
262											
									55/60	2/60	
265		JY	W	0	2						
267											
		BY	W	90	1				59/60	5/60	
		BY	C	65	2						
270		JY	C	0	2						
272											
		J1	C	5	2				53/60	4/60	
		JY	W	0	1						
275											

LOGGED BY: G. SIKD

DATE: MAY 26/77

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
275		J1	C	5	1
277					
		J1	C	75	2
		J4	W	35	2
280		J1	O	85	1
		B1	BW	85	1
282					
		J4	W	55-75	4
		B1	WB	70	1
285					
		B4	B	75	3
287					
		J1	WB	30	1
		J4	W	35	1
		J4	W	20	1
290		J4	W	85	1
292		B1	B	90	1
		B4	O	75	2
		J1	BW	35	1
		B4	BW	70	2
295					
		J4	W	80	1
		B4	B	85	1
		B1	B	90	1
300					COAL 299

GRAPHIC LOG | BRECCIA/SOUND ROCK | BROKEN CORE ZONE | HARDNESS 4 3 2 | ROCK QUALITY DESIGNATION 75 50 25 | NATURAL FRACTURE FREQUENCY | PERMEABILITY

90% RL

49/60 | 30/60 | 58/60 | 41/60 | 40/60 | 4/60 | 5/60 | 2/60 | 1/60 | 3/60

LOGGED BY: S. SISKA

DATE: MAY 28/77

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
300	100% RECOVERY	J	C	85	3					10/60	3/60	
305	20% LOSS									N/A	N/A	
310	45% LOSS				← THE CORE IS IN MOST PARTS DESTROYED, COAL IS VERY FRIABLE BUT IT APPEARS THAT BY ~55° ARE MOST COMMON							
315	17% LOSS									N/A	N/A	
320	5% LOSS	B1	C	80	1					9/48	2/60	
		B1	C	75	1							
322												
	20% LOSS	B1	C	70	2					0/60	4/60	
325		B1	C	70	1							

LOGGED BY: S.S.

DATE: APR 30 77

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K - FORDING 27 (3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 30 15 10 5 0	PERMEABILITY
325											
327	20% LOSS	J1	C	20	1				0/60		
					COAL				9/60		
330	100% RECOV	J1	J	55	3					9/60	
		J1	B	45	3						
332		B1	D	85	4						
		J1	C	55	1						
		B1	C	85	1				23/60	4/60	
					COAL						
335											
		J4	C	20	2				1		
340		J1	W	30	1				54/60	3/60	
		B4	WO	0.5	2						
342											
		J1	C	75	2						
		B4	C	80	2				58/60		
		J4	W	25	2						
345		J4	W	25	1						
		B1	C	70	1						
347											
									52/60	6/40	
350		B4	W	90	1						

LOGGED BY: S. S.

DATE: DAY 24/27

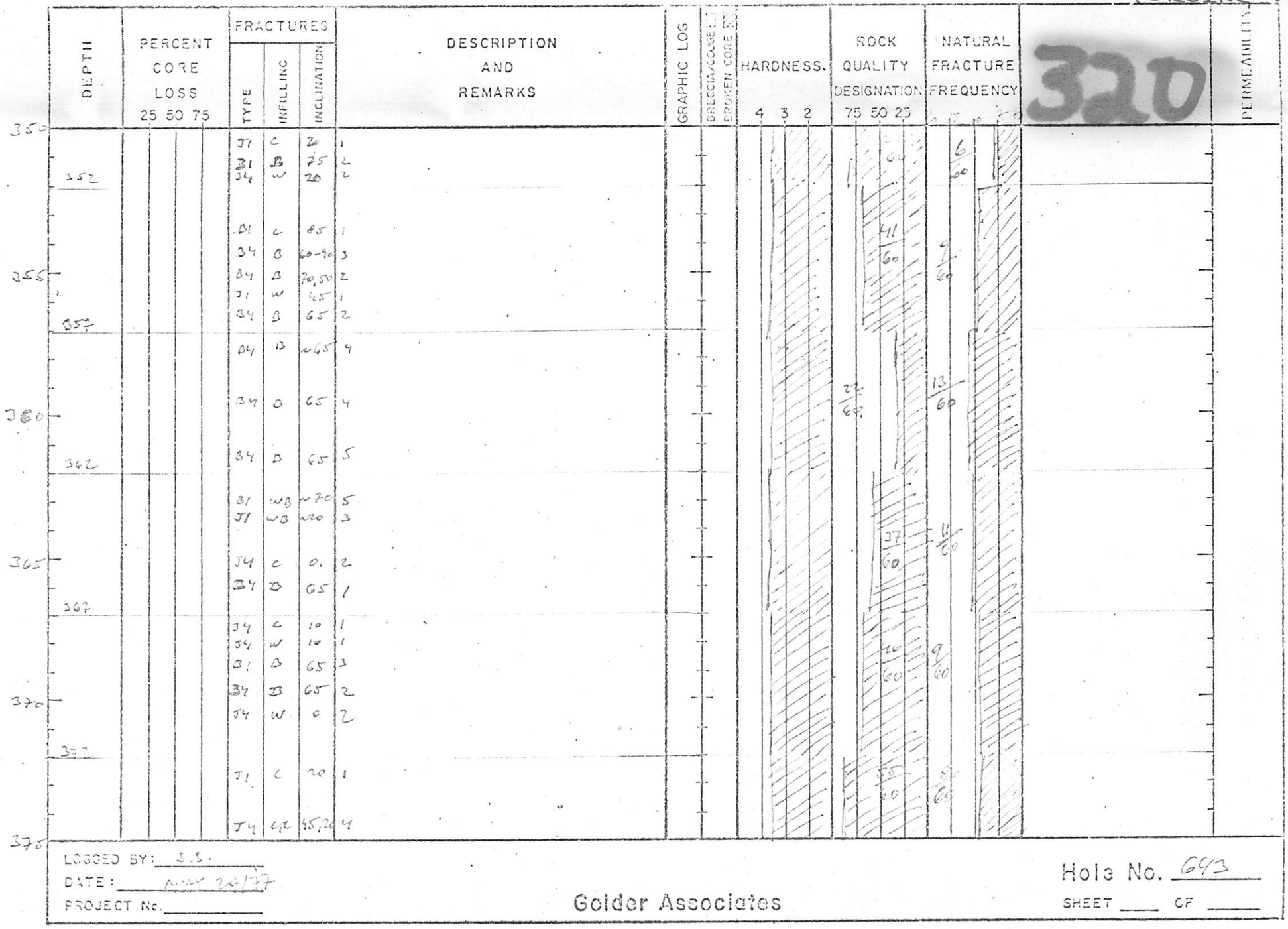
PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K-Fording 77(3)



K - FORDING 77(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/SEAM/BROKEN CORE ZONE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	320	PERMEABILITY
375		J1	W	20	2							
377		J1	B	45	1				50/60	9/60		
		J4	B	65	1							
		J4	B	65	1				30/60	10/60		
380		J4	B	65	5							
		J4	B	30	2							
382		J1	B	40	1							
		J4	B	65	2							
		J4	WB	30	1							
		J4	B	20	2				40/60	17/60		
		J4	B	75	3							
385		J4	C	0	2							
		J4	B	85	5							
387		J4	W	5	3							
		J4	W	0	4							
		J1	W	30	1							
390		J1	C	30	1							
		J4	C	0	1					12/120		
		B1	B	70	2							
		J4	C	20	2							
395		J1	BW	40	1							
397												
					397 - 400 CORE MISSING							
400												

LOGGED BY: S.S.

DATE: MAY 29/77

PROJECT No. _____

Golder Associates

Hole No. 643

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COBBLES/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 30 15 10 5 0	PERMEABILITY
400											
			397-402		CORE MISSING						
402											
	100% REC		N/A		CORE BROKEN UP,				N/A	N/A	
404											
405	100% REC		N/A		COAL				N/A	N/A	
406											
	100% REC								3/48	3/48	
		J4	BW	30	3						
410											
	5% LOSS	J4	C	50	2				6/36	3/36	
410		J4	C	45	1						
		J4	W	0	5				5/48		
415		J4	W	60	2						
		B1	B	90	1						
417											
420									36/60	4/60	
		B1	B	90	1						
422.5		J4	W	55	3						
					COAL 1FT				30/54	2/54	
		J4	B	90	2						
425											

LOGGED BY: S.S.

DATE: MAY 30 1977

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K-FORDING 77(3)h

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
425					
427					
		J4	W	5	1
		B1	B	75	1
		J4	B	50	1
430		D4	B	80	4
		J4	B	90	3
432					
		J4	B	65	3
	100% RECOVERY	J4	C	40	1
435					
435.5					
		D1	C	80	2
	5% LOSS	J1	C	0	1
		J4	C	40	1
440					
440.5					
	4% LOSS	J1	C	35	1
444.5		J4	C	65	5
445					
		J4	C	45	5
	100% RECOVERY	J4	C	65	3
448.5					
450	100% REC				

GRAPHIC LOG	BRECCIA/COARSE GRAVEL	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 10 5 0 5 0	PERMEABILITY
				30/52	2/54	
				22/60	10/60	
				12/42	4/42	
				0/60	4/60	
				10/40	6/40	
				12/40	8/40	
				14/40		

LOGGED BY: S.S.
DATE: MAY 29/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS
450		J1	C	45	1
451.5	40° RQD	B1	C	80	1 — COAL
		B4	B	80	3
		B1	B	75	2
		B4	B	80	4
455		B1	B	80	2
456.5		B4	B	80	3
		B4	B	85	5
		B4	B	85	3
460					
461.5		B4	B	90	5
		B4	B	85	2
		B4	B	85	3
		B4	B	90	2
465		B4	B	85	4
		B	WB	60	1
466.5		B4	B	90	2
		B1	B	85	2
470		B4	B	90	3
		J1	B	60	1
472		B4	B	85	3
		B4	B	85	4
		J4	W	0	2
475					

GRAPHIC LOG | BRECCIA/GRAVEL | BROKEN CORE | HARDNESS 4 3 2 | ROCK QUALITY DESIGNATION 75 50 25 | NATURAL FRACTURE FREQUENCY 0 15 30 50 | PERMEABILITY

COAL — HARDNESS 4 3 2

ROCK QUALITY DESIGNATION 75 50 25:
- 17/36
- 15/60
- 20/60
- 37/60
- 35/60
- 50/60

NATURAL FRACTURE FREQUENCY 0 15 30 50:
- 19/60
- 23/60
- 12/60
- 4/60
- 8/60

LOGGED BY: S.S.
DATE: MAY 29/77
PROJECT No.:

Golder Associates

Hole No. 693
SHEET ___ OF ___

K- fording 7763

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOLID CORE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
475		J4	W	0	2					30/60	8/60	
477												
		J1	C	0	1					24/60	13/60	
		B4	B	90	2							
		J4	B	90	4							
480		B4	BW	85	3							
		B4	B	90	3							
482												
		J4	W	60	2					16/60	9/20	
		B1	B	80	2							
		B1	B	75	3							
485	100% RECOVERY										NA	
487												
					COAL 485 - 503							
		B4	C	85	1					20/60	1/60	
490	100% REC	J4	C	35	2							
		B1	C	35	3							
492												
		J1	C	45	1					25/60	8/60	
	100% REC	B4	C	90	2							
495		J1	C	55	1							
		J1	C	45	2							
497		B4	C	90	2							
		J1	C	25	1					25/60	7/60	
	100% REC											
500		B4	C	90	3							

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DATE: OCT 20/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K- FORDING 22(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 0 15 30 5 0	PERMEABILITY
500		J4	C	50	3							
502					COAL 485 – 503							
		J4	W	20	2							
		J4	WB	45	2							
		B4	B	90	1							
506		J4	B	55	1							
507		B4	BW	90	2							
		B1	B	180	2							
		B4	B	90	2							
		B4	WB	60	1							
		J4	GW	0	2							
510		J	W	30	2							
512												
		B4	B	90	3							
		B4	B	90	3							
		J4	WB	60	1							
515		J4	WB	20	3							
517		B4	B	20	2							
	4% Loss	B4	C	90	5							
		J4	C	55	2							
520		B4	C	90	1	COAL 517 – 546						
522		J4	C	20	1							
	4% Loss	J4	C	60	5							
525		B4	C	85	1							

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DATE: MAY 31/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K- FORDING 27(3h

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS
525					
527	4% Loss	J4	C	40	2
		J4	C	25	1
		B4	C	90	3
	100% RECOVERY	B1	C	90	2
530		B4	C	90	3
		J4	C	55	3
532		B4	C	90	1
		B1	C	90	2
		B4	C	90	2
	100% RECOVERY	B1	C	85	3
535		B4	C	90	3
					COAL 517-546
537		B1	C	90	3
		J1	C	25	2
		B4	C	90	3
	3% Loss	J4	C	60	1
540		B4	C	85	3
542		B4	C	90	5
		B4	C	85	1
		J4	C	50	2
	100% RECOVERY	B4	C	85	2
545		J4	C	50	1
547		B4	C	75	3
	100% Rec				
550		B4	C	85	1

COAL

GRAPHIC LOG | BRECCIA/GOUGE | BROKEN CORE | HARDNESS 4 3 2 | ROCK QUALITY DESIGNATION 75 50 25 | NATURAL FRACTURE FREQUENCY | PERMEABILITY

ROCK QUALITY DESIGNATION: 5/60, 0/60, 15/60, 21/60, 3/60

NATURAL FRACTURE FREQUENCY: 8/60, 12/60, 14/60, 9/60, 3/60

LOGGED BY: S.S.
DATE: May 31/77
PROJECT No.:

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FORDING 72(3)a

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS (4 3 2)	ROCK QUALITY DESIGNATION (75 50 25)	NATURAL FRACTURE FREQUENCY	PERMEABILITY
550		J4	C	50	1	548-552 COAL				2/60	3/20	
552		J4	C	50	1							
		J1	B	60	2							
		B4	OW	85	1					12/60	9/60	
555												
557		J1	BW	55	5							
		B1	B	80	1							
		B1	B	85	3					33/60	5/60	
560												
562		B1	B	90	1							
		B1	B	85	1							
										34/60	4/60	
565		B4	B	75	2							
567		B1	B	75	1							
										52/60	1/60	
570												
572		B1	B	85	1							
		B1	B	75	3					32/60	14/60	
		B4	B	80	4							
575												

LOGGED BY: J.S.

DATE: MAY 31/77

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORE LOSS	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
575												
577		B4	B	85	3					50		
		J4	B	55	1					43/60	4/60	
580		B4	B	75	5							
582												
		J4	BW	25	1					53/60		
585		J1	BW	5	1							
587												
		B1	B	45	1							
		B4	BW	65	2					20/60	5/60	
		B1	B	65	1							
590		B1	B	65	1							
592												
		B1	B	65	3					47/60	4/60	
595												
597		B1	B	90	3							
600		J1	BW	45	2							

LOGGED BY: S.S.
DATE: MAY 5/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K - FOLDING 72(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 10 5 4 0 5 0	PERMEABILITY
600											
602		JY	W	0	S				60	1/60	
		JY	WB	30	J				60		
605									60	3/60	
607											
		BY	B	90	1				50		
		JY	W	10	1				60	3/60	
610		BY	B	90	1						
612											
		JY	W	10	1				60		
615									60	2/60	
		JY	W	5	1						
617											
									60	0/60	
620									60		
622											
									60	0/60	
625									60		

LOGGED BY: S.S.

DATE: June 1972

PROJECT No.:

Golder Associates

Hole No. 643

SHEET ___ OF ___

K-FOLDING 72(3)0

320

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS
625		B1	B	90	1
627		B4	B	90	1
		B4	B	65	1
630		B4	B	65	1
632					
		J4	W	15	1
635		J4	W	35	1
637		J4	W	50	2
640					
642					
645					
645		J4	WB	0,20	3
		J4	WB	~45	4
650		J4	WB	~35	2
650					

GRAPHIC LOG | BRECCIA/GOUGE | BROKEN CORE

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25)

NATURAL FRACTURE FREQUENCY (20 15 10 5 0)

PERMEABILITY

LOGGED BY: _____

DATE: _____

PROJECT No.: _____

Golder Associates

Hole No. 643

SHEET ___ OF ___

K- FOLDING 27(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
650		JY	DW	20	3				48/60	5/60	
		JY	W	10	2						
655		JY	W	45	1				60/60	5/60	
		JY	W	20	1						
		JY	W	30	1						
		JY	W	25	1						
		JY	W	25	1						
660		BI	B	90	2				3'/72	2'/72	
		JY	W	20	2						
		JY	C	10	1						
		JI	WB	30	3						
		JI	WB	5-30	3						
665		BI	W	90	2						
	666	JY	W	0	3						
		JY	C	0	2				48/60	6/70	
		JY	C	5	3						
670	671	JY	C	5	1						
		JI	C	0	2				38/60	9/60	
		JY	C	0-10	5						
675		JY	C	5	1						

LOGGED BY: S.S.
DATE: MAY 31/77
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Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
675												
676		JY	W	20	1							
		BY	B	75	1					58/60	2/60	
680		BY	BW	90	1							
681												
		JY	C	0	2					45/60	5/60	
685												
686		JY	CW	10	3							
		JY	C	10	3							
		JY	C	10	2					48/60	10/60	
690		JY	C,W	10	3							
691		JY	C	10	2							
		JY	C	10	5					50/60	7/60	
		BI	BW	90	1							
695		JY	W	10	1							
696												
										62/72	3/60	
700												

LOGGED BY: S.S.

DATE: THUR 1/77

PROJECT No. _____

Golder Associates

Hole No. 643

SHEET ____ OF ____

K. FRDING 27(3)A

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
700		B1	B	80	2							
702												
		B1	B	40	1					54/60	3/60	
705		J4	C	15	1							
		B1	B	35	1							
707												
		B4	B	40	1					50/60	3/60	
710		B4	B	40	1							
712		B1	B	60	1							
		B1	B	85	3					24/42		
		J4	B	25	4							
715		B1	B	85	1							
715.5												
		B4	W	40	1					60/60	5/60	
		B4	W	50	1							
		B4	W	65	1							
		B4	W	60	1							
720		B4	W	70	1							
720		B4	B	10	2					56/60	7/60	
		J4	C	0	1							
		B4	W,C	70	4							
725												

320

LOGGED BY: J.S.
DATE: June 1/77
PROJECT No.:

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FOLDING 72(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
725		J4	C	5	2					65/72	8/72	
		J4	W	20	3							
		J4	B	100	←							
730		J4	W	35	1							
731		J4	C	45	1							
					Extremely crushed zone					15/60	11/17	
735					Apparently a major thrust fault							
736												
		J4	C	25	4					32/60	6/60	
740		J4	C	20	2							
741												
		J4	B	90	2					37/60	9/60	
		B1	B	90	2							
		J4	C	20	2							
745		B4	B	65	3							
746												
		B1	B	75	1					32/60	5/60	
		B2	B	70	3							
750												

LOGGED BY: S.S.
DATE: June 2/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FORDING 7763A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/SHEARED/BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
750											
751		JY	B	70	1						
		JY	B	~70	3				19/36	2/36	
754		JY	B	~80	4						
755		JY	B	80	4				8/48	12/60	
		JI	B	75	5						
		JI	C	30	1						
758		JY	B	~65	3						
		JI	B	80	2				37/48		
760		JI	W	20	1					5/48	
762		JY	B	65	2						
		JY	C	40	2				42/60		
		JY	C	25	2					2/60	
765		JY	B	65	2						
767		JI	C	25	2						
		JI	C	25	3				47/60		
		JY	B	65	1					9/60	
770		JY	B	65	1						
		JY	C	25	3						
772		JY	B	65	1						
		JY	C	0	1				37/60	8/60	
		JY	B	65	2						
775		JY	B	65	2						

LOGGED BY: S.S.
DATE: JUNE 3/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
775		24	B	35	2							
777		24	W	30	1					37/60	2/60	
		24	W	35	1							
		24	W	120	1 ←					36/60	4/60	
780		81	B	45	2							
					The entire coal seam is very intensively fractured/brecciated, however numerious B's are noticable especially in more argillaceous sections. On the average B's occur (90°-70°) every 2-3 inches throughout the total interval from 780-834. Argillaceous sections exists at 813, 822, 830, 833, and all are ~1 FT thick. Generally the coal appears to have a high ash content.							
782												
785												
790												
					COAL 780-834							
795					100% RECOVERY EXCEPT FOR THE INTERVAL 813-822 = 5% LOSS							
800												

LOGGED BY: S.S.
DATE: JUNE 3/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K - FORDING 77 (3A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SQUARE LOG BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
800											
805											
810											
813											
815	5% Loss				COAL 780 - 834						
820											
825											
828											

LOGGED BY: S.S.
DATE: THN 3/77
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Golder Associates

Hole No. 643
SHEET ___ OF ___

K- FORDING 72(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY
825											
					COAL 780 - 834						
830											
834											
835		J4	B,W	50-60	~10				5/48	10/48	
838											
840		J4	BW	60-70	~20				0/48		
841											
		J4	BW	65	3				44/60		
		J4	BW	65	2						
		J4	C	65	2						
845		B4	B	90	1						
846											
		B4	D	90	4				53/60	6/60	
850		J4	C	20	2						

LOGGED BY: SS.
DATE: MAY 3/77
PROJECT No.

Golder Associates

Hole No.
SHEET ___ OF ___

K- FORDING 77(3)

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
850											
851											
									60/60	0/60	
855											
856											
		J4	c	15	2				60/60	2/60	
860											
861											
									48/72	4/72	
865											
		J4	e	0	2						
867		B1	c	90	2						
									55/60	3/60	
870		J4	c	20	1						
		J4	c	20	2						
		J4	c	50	4				45/60	8/60	
875											

LOGGED BY: S.S.

DATE: JUNE 3/77

PROJECT No.

Golder Associates

Hole No. 643

SHEET ___ OF ___

K - FORDING 72(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
875		BI	B	90	2					45/60	9/60	
877		J4	C	20	2							
		J4	C	40	3					54/60	7/60	
880		J4	C	45	3							
882		J4	C	0	1					53/60	7/60	
		J4	C	35	3							
885		J4	C	35	4							
887												
		B4	B	65	1					55/60	5/60	
		J4	C	25	3							
890												
892		J4	C	35	1							
										52/60		
895		J4	C	135	←						3/60	
897		B4	B	65	3							
		B4	B	~90	2					33/78	3/60	
900												

LOGGED BY: S.S.
DATE: JUNE 4/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K- FORDING 77(3)A

320

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
900												
901		31	C	30	1							
		34	B	~70	3					30/50		
		34	B	~20	3							
905		B4	B	~80	3							
906		01	B	0	4							
			N/A		core is intensively brecciated and J4 are very common					34/72	2/A	
910												
912												
		B4	B	60	1					72/72	5/72	
915		B4	B	60	1							
		B4	B	80	2							
918		B4	B	75	1							
		B4	O	90	1							
920		J4	C	0	1					43/48	6/48	
		J4	C	10	4							
922		01	C	60	5							
		B4	C	65	4					2/60	(24/60)	
		B4	C	65	5							
925		B1	C	60	5	921 - 927						

LOGGED BY: S.S.
DATE: JUNE 4/77
PROJECT No.

Golder Associates

Hole No. 643
SHEET ___ OF ___

K-Fordins 77(3)A

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DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE	BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 5 1/2 1/3	PERMEABILITY
925		BY	C	60	5	COAL 921-927					0/60	27/60	
927		BY	C	60	4								
		BY	B	90	2								
		BY	B	90	3						31/60	21/60	
		BY	B	90	5								
930		BY	BW	90	6								
932		BY	BW	90	5								
		JY	C	15	4								
		JY	WB	35	1						37/60	9/60	
		JY	C	20	1								
935		BY	B	80	3								
937		JY	C	40	2	937.5 - 942 COAL							
		BY	C	70	1						9/60	8/60	
		JY	C	60	2								
940		BY	C	85	3								
942		JY	C	0	2								
		BY	B	90	1						30/60	12/60	
		JY	C	15	3								
945		JY	C	10	4								
		JY	C	5	2								
947		JY	C	30	3						45/60	9/60	
		JY	C	25	1								
950													

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DATE: JUNE 4/77
PROJECT No.:

Golder Associates

Hole No. 643
SHEET ___ OF ___

K - FORDING 77(3)A

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DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUCE / BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY
950		J4	C	40	2				47 60	6/60	
952											
		J4	C	5	2				60 60	2/60	
957											
		J4	C	10	1				60 60	1/60	
962											
		B4	B	70	1				60 60	2/60	
967		B4	B	70	1						
		B4	B	80	1				60 60	3/60	
970		B4	B	80	1						
972		B4	B	85	1						
		B4	B	85	2				57 60	2/60	
975											

LOGGED BY: S. S.
DATE: June 3/77

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Hole No. 643
SHEET ... OF ...

K - FORDING 77(3)A

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DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOLUBLE/BROKEN CORE ZONES	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5 0	PERMEABILITY
977									57 60	2/60	
980									60 60	2/60	
982		34	C	10	2						
					982 END OF DDH 643 JUNE 3/77.						
985											
990											
995											
1000											

LOGGED BY: S.S.
DATE: JUN 3/77

Hole No. 643

Golder Associates

SHEET OF

K-FORDING RIVER 77(3)A.
STRT. LOGS.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 320

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