FOR WASH TESTS, REFER TO
CONFIDENTIAL COAL ANALYSIS DATA

K-FORDING RIVER 26.(4)-1

fording
COAL LIMITED

Mr. A.R. Corner
Administrator for Coal
B.C. Dept. of Mines and
Petroleum Resources
Victoria, B.C.

OPEN FILE
2933

March 18, 1977

Dear Sir:

Re: Fording Coal Limited - Summary Report - 1976 Coal Reserve Development Program dated January 28, 1977.

At the time of submission of this report to you, Appendix I (copies of drill hole logs, including assays and washability tests) was incomplete. The remainder of the assay data is enclosed. Washability test results are not yet available but will be forwarded to you as soon as possible.

Yours,

P.M. Daignault

P.M. Daignault,
Mine Geologist

PMD:lam

Encl.

REFERRED TO		DATE	INITIAL
C.G.C.			
D.C.G.C.	✓		
G.C.	✓		

MAR 22 '77 AM

Geology Dir
for filing with report
referred to above.
23/3

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 319

Fording Coal Limited / Box 100 / Elkford, British Columbia, Canada V0B 1H0 / Tel. (604) 425-6263

fording COAL LIMITED

Mr. A. R. Corner,
Administrator for Coal,
B.C. Department of Mines and Petroleum Resources,
Victoria, B.C.

January 10, 1978

225

Dear Sir:

Re: Fording Coal Limited - Summary Report - 1976 Coal Reserve, Development date January 28, 1977.

At the time of submission of this report to you, Appendix I (copies of drill hole logs, including assays and washability tests) was incomplete. Washability tests have been completed on 1976 diamond drill core and results are enclosed. This completes the tests work of our 1976 exploration program.

I expect to have our "Summary Report 1977 Coal Reserve Development Program" completed and sent to you by the first week of February: all test data relevent to that report should be available within two months.

Yours truly,

P. M. Daignault,
Senior Mine Geologist,

PMD:sja

Jack
For filing with appropriate reports
AR 16/1/78

JAN 13 '78 PM

DEPT. OF MINES AND PETROLEUM RESOURCES

REFERRED TO		DATE	INITIAL
C.G.C.			
D.C.G.C.		16/1	
C.C.			
FILE NO.			
FILING CLERK			

319

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS Nov. 2 76
193	195	C & Sh	18262			2		76.5			0		
195	197	" "	18263			2		80.5			0		
197	199	C & Sh.	18264			2		61.2			1/2		196-221 COAL
199	201	" "	18265			2		45.4			1		25'
201	203	" "	18266			2		46.3			1		
203	205	" "	18267			2		32.8			1		
205	207	" "	18268			2		34.6			1		
207	209	" "	18269			2		15.3			1		
209	211	" "	18270			2		60.2			1/2		
211	213	" "	18271			2		32.6			1		
213	215	" "	18272			2		24.1			1		
215	217	" "	18273			2		30.4			1		
217	219	" "	18274			2		38.6			2		
219	221	" "	18275			2		31.9			2		
203	221	SEAM - 9 COMPOSITE				18							

 Hole No. RH 387

DIAMOND DRILL SAMPLING RECORD

37

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
													RAD. LOG
169	171	C & Sh.	19103			2		21.1			4 1/2		
171	173		19104			2		39.8			3		172-194' COAL
173	175		19105			2		13.5			2 1/2		
175	177		19106			2		NO	SAMPLE				22(20')
177	179		19107			2		40.0			2		
179	181		19108			2		21.9			2		TOP 16' GOOD COAL
181	183		19109			2		29.5			3		
183	185		19110			2		34.0			5 1/2		
185	187	C & Sh.	19111			2		69.6			1		
187	189	" "	19112			2		71.3			1		
189	191	" "	19113			2		37.5			4		
191	193	" "	19114			2		75.9			1/2		
169	185	SEAM-9 COMPOSITE				14/16	0.4	29.1	21.3	49.2	2 1/2	0.43	

Page No.

RH 389

Hole No.

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
48	50		18535			2		64.2			1		
50	52		18536			2		54.9			3		
61	63		18537			2		33.5			6		
63	65		18538			2		51.0			2 1/2		
65	67	C & Sh.	18539			2		68.0			0		
67	69	" "	18540			2		55.5			3 1/2		
69	71	" "	18541			2		47.2			2		
71	73	" "	18542			2		71.5			0		
73	75	" "	18543			2		89.9			0		
147	149	C & Sh.	18544			2		79.5			0		202-225.5' COAL
149	151	" "	18545			2		86.8			0		23.5'
													225.5-227' SHALE
204	206		18546			2		42.0			1/2		
206	208		18547			2		37.7			1		227-229' COAL
208	210		18548			2		No	SAMPLE				&
210	212		18549			2		51.8			0		230.5-233' COAL
212	214		18550			2		30.2			1		
214	216		18251			2		20.1			1		
216	218		18252			2		14.3			2 1/2		
218	220		18253			2		23.1			1		
220	222		18254			2		61.3			1/2		
222	224		18255			2		23.8			3		
224	226		18256			2		33.4			2 1/2		
226	228		18257			2		25.2			2 1/2		
228	230	C & Sh.	18258			2			NO	SAMPLE			
212	228	SEAM-9 COMPOSITE				16'	0.2	29.0	20.4	50.4	2	0.16	

Page No. 1 OF 2 Hole No. RH 396

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
235	237	C & Sh.	18259			2		69.6			0		
237	239	" "	18260			2		57.7			1		
251	253	C & Sh.	18261			2		82.8			0		

Page No. 2 OF 2 Hole No. RH 396

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
119	121		16A47			2		76.4			1/2		
121	123		16A48			2		48.0			4 1/2		
161	163		16A49			2		73.0			0		
163	165		16A50			2		61.6			1/2		
165	167		19401			2		22.4			1		
167	169		19402			2		29.2			1		
169	171		19403			2		8.2			2 1/2		164.5 – 187' COAL 22.5'
171	173		19404			2		29.6			1 1/2		
173	175		19405			2		17.8			1		
175	177		19406			2		54.9			1		188 – 190. COAL 2'
177	179		19407			2		12.4			3 1/2		
179	181		19408			2		15.6			1		191 – 194 COAL 3'
181	183		19409			2		23.0			3		
183	185		19410			2		33.1			7		
185	187		19411			2		41.2			3		
187	189		19412			2		77.8			0		
189	191	P.A. 0.S & FSI.	19413			2	0.4	31.4, 31.6	18.3	49.9	1 1/2, 1 1/2	0.28	
191	193		19414			2		68.7			1/2		
193	195		19415			2		77.4			0		
195	197		19416			2		84.7			0		
197	199		19417			2		57.4			1		
199	201		19418			2		65.9			1		
201	203		19419			2		81.6			0		
203	205		19420			2		82.0			0		
205	207		19421			2		83.4			0		
165	185	SEAM-9 COMPOSITE				20'	0.4	24.9	21.1	53.6	2	0.18	
313	315		19422			2		50.1			1		
315	317		19423			2		63.9			1		
317	319		19424			2		67.7			1/2		

 Hole No. RH 437 A.

DIAMOND DRILL SAMPLING RECORD

37

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
87.5	90.7		10441			3.2		6.3			7½		
		P.A. % S. & FSI. —	10441				0.4	6.5	29.7	63.4	7½	0.68	
119.8	124		10442			4.2		32.6			2½		
		P.A. % S. & FSI —	10442				0.4	32.9	22.1	44.6	2½	0.69	
187.1	194	SEAM-13	10443			6.9		8.1			8		
194	200.4		10444			6.4		35.3			7		
187.1	200.4	COMPOSITE				13.3'	0.5	21.2	26.2	52.1	7½	0.41	
246.8	251		10445			4.2		17.7			8½		
		P.A. % S. & FSI.	10445				0.4	18.0	31.9	49.7	8	0.69	
300.5	302.8		10446			2.3		26.8			8½		
		P.A. % S. & FSI.	10446				0.3	27.0	25.3	47.4	8½	0.63	
315.5	321.5	SEAM-12	10447			6		16.3			9		
		P.A. % S. & FSI	10447				0.5	16.1	26.6	56.8	8½	0.69	
386.7	395.4	SEAM -11U	10448			8.4		10.8			8		
		P.A. % S. & FSI	10448				0.5	10.7	26.2	62.6	8	0.60	
470.1	480.6	SEAM-11 P.A. % S. & FSI.	10449			10.5	0.6	19.9, 20.3	24.5	55.0	8½, 8½	0.64	
480.6	486.3		10450			5.7		50.1			4		
486.3	494.8	(1.3' SHALE PARTING INCLUDED) P.A. % S. & FSI.	10301			8.5		33.1			6		
			10301				0.3	33.0	21.0	45.7	6	0.69	

377

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
574.1	579.0	SEAM - 9	10302			4.9		56.1			1/2		
579.0	588.0		10303			9		21.2			3		
588.0	598.0		10304			10		22.6			2 1/2		
579.0	598.0	COMPOSITE				19	0.5	22.5	21.1	55.9	2 1/2	0.60	
608.9	612.3		10305			3.4		30.2			4		
		P.A. & S & FSI	10305				0.3	30.0	19.8	49.9	4	0.49	
634.5	640.5		10306			6		29.2			5		
		P.A. & S. & FSI	10306				0.5	29.5	20.1	49.9	5 1/2	0.49	
836.7	840.6	P.A. & S & FSI	10307			3.9		20.4			7		
			10307				0.4	20.3	21.5	57.8	7	0.60	
862.6	867.4	SEAM - 7	10308			4.8		15.5			3 1/2		
867.4	869.6	MUDSTONE PARTING	10309			2.2		74.0			1/2		
869.6	878.4		10310			8.8		26.7			4 1/2		
862.6	878.4	COMPOSITE				15.8	0.5	30.3	18.9	50.3	3 1/2	0.34	
939.7	949.7	SEAM - 5	10311			10		21.6			6 1/2		
949.7	956.0		10312			6.3		14.0			8		
956.0	958.4	MUDSTONE PARTING	10313		4.5	~~2.4~~		29.6 ✓			1 ✓		CHECKED JAN 20 '77
958.4	963.1		10314		2.6	~~4.5~~		52.1 ✓			1/2 ✓		
939.7	963.1	SEAM - 5 COMPOSITE				23.4*	0.5	24.5	20.0	55.0	4 1/2	0.31	16' COAL SHALE 2' 4' COAL *PARTING INCLUDED

Page No. 2 OF 2 Hole No. DDH 438

DIAMOND DRILL SAMPLING RECORD

371

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
176	188	SEAM - 110	10283		12'			11.2			8		
188	193		10284		5			37.9			1		
176	188	SEAM - 110. P.A. & S. & FSI.	10283			12'	0.5	11.0	26.7	61.8	8	0.64	
326.5	337	SEAM - 11	10285		10.5'			14.3			7 1/2		
337	349.5		10286		12.5			42.4			4 1/2		
349.5	360		10287		10.5			25.4			7		
326.5	360	SEAM - 11. COMPOSITE.			33.5'	33.5	0.3	28.9	21.1	49.7	6 1/2	0.63	13.5' GOOD COAL 3.5' SHALEY COAL 11' GOOD COAL
531	536.5	MUDSTONE ABOVE SEAM - 9	10288		5.5'			56.1			1/2		
536.5	546.5	SEAM - 9	10289		10'			38.5 ✓			1 1/2 ✓		CHECKED JAN 25 '77
546.5	556.5		10290		10'			14.4 ✓			5 1/2 ✓		
556.5	561.5		10291		5'			24.0			7		
531.5	561.5	SEAM - 9 COMPOSITE			25'	25'	0.5	26.3	23.9	49.3	4 1/2	0.27	
577.2	579.2		10292		2'			41.0			1 1/2		
635.5	643.7		10293		8.2			27.4			4 1/2		
		P.A. & S. & FSI	10293			8.2	0.3	27.5	19.8	52.4	5	0.46	
881.5	888.5		10294		7'			16.4			7		
		P.A. & S. & FSI	10294			7'	0.4	16.8	21.4	61.4	7	0.50	

371

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
897	907	SEAM - 7.	10295			10		20.6			3 1/2		
907	917		10296			10		14.1			7 1/2		
897	917	SEAM - 7 COMPOSITE				20	0.6	17.7	20.7	61.0	6	0.37	
923	929	PART SEAM - 7	10297			6		24.2			3 1/2		
		P.A. %S. & FSI.	10297				0.5	24.3	19.6	55.6	4	0.32	

Page No. 2 OF 2 Hole No. DDH 439

DIAMOND DRILL SAMPLING RECORD

379

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
92	96		10485			4		21.0			0.		
151.5	161	SEAM - 11U.	10486			9.5		15.6			8 1/2		
161	166		10487			5		30.2			2 1/2		
151.5	166	SEAM - 11U COMPOSITE				14.5	0.4	22.8	25.1	51.7	6	0.56	
269	277	SEAM - 11	10488			8		22.3			7 1/2		
277	287.7		10489			10.7		31.7			7		
287.7	293		10494			5.3		64.2			1		
269	287.7	SEAM - 11 COMPOSITE				18.7	0.4	38.2	21.8	49.4	7 1/2	0.59	
293	297	LOWER PART. 11 P.A. & S & FSI	10491			4		17.3			8		
			10491				0.3	17.9	25.6	56.2	8	0.60	
455	459	SEAM - 9	10492			4		53.4			1/2		
459	469		10493			10.		10.6			4 1/2		
469	478		10495			9		11.6			3 1/2		
478	483.7		10496			5.7		40.5			3.		
459	478	SEAM - 9 COMPOSITE				19	0.5	11.6	22.9	65.0	3 1/2	0.44	
501	504		10497			3		45.1			1		

Page No. 1 OF 2 Hole No. DDH 440

DIAMOND DRILL SAMPLING RECORD

379

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
577	581.5		10498			4.5		14.4			6		
		P.A. dos & FSI	10498				0.3	14.7	22.1	62.9	6	0.55	
749.8	754.8		10499			5		18.8			7		
		SEAM P.A. dos & FSI	10499				0.3	18.7	22.1	58.9	7	0.52	
769	777		10500			8		12.1			5		
		P.A. dos & FSI	10500				0.4	12.0	22.5	65.1	5	0.34	
784.4	786.9	SEAM - 7	10277			2		16.0			8		
861.3	869		10278			7.7		20.0			6 1/2		
869	870.5	SEAM - 5	10279			1.5		53.9			1		
870.5	878.5		10280			8		12.5			4		
878.5	881.5		10281			3		54.1			1/2		
881.5	884.5		10282			3		33.4			1		
861.3	878.5	SEAM - 5 COMPOSITE				17.2	0.6	20.0	20.5	58.9	4 1/2	0.29	CALC. ASH. 19.5%

Page No. 2 OF 2 Hole No. DDH 440

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
99.6	109.0	SEAM - 110	10452			9.4		15.5			6 1/2		
109.0	112.4		10453			3.4		46.6			1		
		P.A. & S & F ST	10452				0.5	16.0	24.8	58.7	7	0.61	
187.5	196.6	SEAM	10454			9.1		22.8			6		
196.6	207.0	1' PARTING INCLUDED	10455			10.4		36.7			6 1/2		
207.0	210.5	PARTINGS INCLUDED - 11	10456			3.5		56.5			2		
187.5	207.0	COMPOSITE				19.5	0.4	30.1	22.6	46.9	6 1/2	0.60	
337.0	340.4	SEAM - 9	10460			3.4		50.8			1		
340.4	348.5		10457			8.1		35.1			2 1/2		
348.5	355.0		10458			6.5		18.5			3 1/2		
355.0	359.0		10459			4.0		45.5			3		
340.4	355	COMPOSITE				14.6	0.4	27.4	21.8	50.2	3 1/2	0.30	
368.9	369.2		10461			1.2		63.3			1		
372.0	374.3					2.3							
369.2	372	MUDSTONE	10463			2.8		90.2			0		
424.7	426.5	SEAM - "My"	10462			1.8		15.1			6		
426.5	429.1		10464			2.6		41.0			1 1/2		
449.5	454.9	PART SEAM - "My"	10465			5.4		61.9			1 1/2		
580.4	587.0		10466			6.4		53.6			1 1/2		

319

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
587	589	(MUDSTONE PARTING) SEAM-7	10467			2.5		90.7			0		
589	601		10468			11.5		25.0			2		
		P.A. & S & FSI	10468				0.5	24.7	21.1	53.7	2 1/2	0.20	
609.5	612.3		10469			2.8		40.5			3 1/2		
673	683	SEAM-5	10473			10		36.5 ✓			4 ✓		CHECKED JAN 28 '77
683	691.5		10474			8		25.4			3		
691.5	695.5		10475			4		35.9			1		
673.5	695.5	SEAM-5 COMPOSITE				22	0.3	32.6	18.3	48.8	3 1/2	0.21	CALC. AVE. ASH. 32.4%
779.8	784		10476										
942.5	949.5		10477			7		16.0			4 1/2		
949.5	960		10478			10.5		10.3			4		
960	965		10479			5		6.6			3		
965	973.5		10480			8.5		11.3			7 1/2		
942.5	973.5	COMPOSITE SEAM-4				31.0	0.4	11.9	22.1	65.6	5 1/2	0.19	

DIAMOND DRILL SAMPLING RECORD

319

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
122	131	SEAM-11U	10470			9		37.3			1 1/2		
		P.A. do S & FSI	10470				0.5	36.9	26.7	35.9	2	0.45	
229	238.7	SEAM-11	10471			9		40.0			5		
238.7	252.7		10472			14		54.7			2		
		P.A. do S & FSI	10471				0.4	39.9	20.5	39.2	4 1/2	0.42	
313.8	316.4		10426			2.6		71.3			1		
380	388	SEAM-9	10427			8		20.1			4		
388	398.5		10428			10.5 *		27.0			6		*3' PARTING EXCLUDED
401.5	403					1.5							
		COMPOSITE 10427-428					0.4	23.9	20.8	54.9	4 1/2	0.24	
398.5	401.5	MUDSTONE PARTING.	10429			3'		86.2			0		
415.5	420		10430			4.5		44.2			2 1/2		
438	443.9		10431			5.9		31.2			3 1/2		
		P.A. do S & FSI	10431				0.5	31.5	18.6	49.4	3 1/2	0.34	
488.4	489.4		10432			1		37.8			4 1/2		
490.9	494.1					3.5							
		P.A. do S & FSI.	10432				0.3	38.0	16.9	44.8	5	0.55	
489.4	490.9	MUDSTN. PARTING.	10433			1.2		56.8			1		

DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
636.8	638		10483			1.2		21.7			1 1/2		
640.2	648					7.8							
638	640.2	MUDSTONE PARTING. SEAM-7.	10482			2.2		76.5			0		
648	658.3		10484			10.3		21.4			6 1/2		
636.8	658.3	SEAM 7 COMPOSITE				21.5	0.4	21.8	20.3	57.5	3 1/2	0.24	CALC AVE. ASH 27.2%
710.7	720.7	SEAM-5	10435			10		21.2			5		
720.7	730.7		10436			10		14.6			3		
730.7	736.9		10437			5.9		38.4			1/2		
710.7	730.7	SEAM-5 COMPOSITE				20	0.5	18.3	19.5	61.7	4	0.20	
971.5	984	SEAM-4.	10438			12.5		9.7			3 1/2		
984	994		10439			10		6.9			7		
994	1004		10440			10		24.3			2		
971.5	1004	SEAM-4 COMPOSITE				32.5	0.4	13.6	21.2	64.8	4 1/2	0.20	

DIAMOND DRILL SAMPLING RECORD

379

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
120	126	PART SEAM-11	10298			6	0	25.5			8		
120	126		10298			6	0.6	25.4	23.3	50.7	7½	0.70	
262.5	273	SEAM-9	10299			10.5		14.7			5		
273	280		10300			7		12.9			7		
262.5	280	SEAM-9 COMPOSITE				17.5	0.5	14.8	22.5	62.2	5½	0.38	
532	543	SEAM-7	10376			11		15.3			6½		
543	548.5		10377			5.5		13.0			7½		
532	548.5	SEAM-7 COMPOSITE				16.5	0.5	15.0	23.1	61.5	7½	0.37	
596	606	SEAM-5	10378			10		15.8			5		
606	614		10379			8		14.1			4		
596	614	SEAM-5 COMPOSITE				18	0.4	15.4	19.7	64.5	4½	0.31	
862	872	SEAM-4	10380			10		11.5			7		
872	880		10381			8		10.7			7		
880	890		10382			10		8.4			7½		
862	890	SEAM-4 COMPOSITE				28	0.4	10.1	22.2	67.3	7½	0.28	

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
121.0	130.4	SEAM-13	10315			9.4		7.9			8		
130.4	133.8	MUDSTONE	10316			3.4		53.5			3 1/2		119.5-128.5 COAL 9
133.8	138.7		10317			4.9		8.8			8 1/2		
121.0	130.4	COMPOSITE SEAM-13	10315			9.4	0.6	8.0	27.6	63.8	8	0.49	132-136 COAL 4
133.8	138.7	COMPOSITE	10317			4.9	0.6	8.9	28.6	61.9	8 1/2	0.71	
268.3	278.3	SEAM-12	10318			10		16.0			8 1/2		
278.3	282.6		10319			4.3		7.0			8		266-282.5 COAL 16.5
268.3	282.4	SEAM-12 COMPOSITE.				14.3	0.5	12.8	26.6	60.1	8	0.55	
342.8	348.9	SEAM-11U	10320			6.1		12.4			8 1/2		
348.9	356.2		10321			7.3		55.1			1		
342.8	356.2	SEAM-11U	10320			6.1	0.6	12.3	25.2	61.9	8	0.69	
424.7	434.7	SEAM-11	10322			10.0		22.2			7 1/2		
434.7	439.0		10323			4.3		38.9			3 1/2		
439.0	440.4	MUDSTONE	10324			1.4		74.1					
440.4	444.0		10325			3.6		20.6					438.5-442 COAL
444.0	448.5	COAL + SHALE	10326			4.5		62.5					
424.7	434.7	SEAM-11	10322			10	0.4	21.8	25.7	52.1	7	0.71	
440.4	444	LWR. PT.	10325			3.6	0.4	20.3	22.7	56.4	8	0.73	
571.3	573.2	MUDSTONE ABOVE SEAM-9.	10327			1.9		39.2			1		

DIAMOND DRILL SAMPLING RECORD

317

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
573.2	583.2	SEAM- 9	10328			10		13.8			4		
583.2	591.3		10329			8.1		14.3			6 1/2		570-589.5 COAL
													19'
573.2	591.3	SEAM- 9 COMPOSITE				18.1	0.6	13.8	22.8	62.8	5 1/2	0.40	
688.0	690.1		10330			2.1		44.0			4 1/2		
808.0	818.0	SEAM-7	10331			10		34.6			1 1/2		807-830' COAL
818	828		10332			10		18.4			3		
828	832.6		10333			4.6		23.6			8		23(20)'
808	832.6	SEAM- 7 COMPOSITE				24.6	0.5	26.0	21.3	52.2	4	0.40	
839.9	843.5		10334			3.6		17.7			7		
913	923	SEAM-5	10335			10		20.1			6 1/2		911-932' COAL
923	932.4		10336			9.4		27.4			2		21'
932.4	934.6		10337			2.2		30.9			1 1/2		
934.6	936.3	SHALE	10338			1.7		47.7			2		
913	934.6	SEAM- 5 COMPOSITE				21.6	0.4	24.8	19.0	55.8	3 1/2	0.34	
1010.3	1012.8		10339			2.5		60.6			1/2		
1161	1171	SEAM-4	10340			10		11.8			6		1159-1185 COAL
1171	1181		10341			10		6.5			5 1/2		26
1181	1191		10342			10		31.0			6		
1191	1194.6		10343			3.6		11.7			7 1/2		1189-1193 COAL
1194.6	1197.6	SHALEY COAL	10344			3		61.5			1		4
1161	1194.6	SEAM-4 COMPOSITE				33.6	0.5	15.6	19.5	64.4	5 1/2	0.30	

DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
43	45	C & Sh	16414			2		8.7			1/2		
45	47	" "	16415			2		75.7			0		
47	49	" "	16416			2		8.7			1/2		
49	51	" "	16417			2		84.6			0		
63	65	C & Sh.	16418			2		87.7			0		
65	67	" "	16419			2		30.2			1		
67	69	" "	16420			2		65.6			0		
69	71	" "	16421			2		89.8			0		
71	73		16422			2		73.8			0		
73	75	C & Sh.	16423			2		64.4			1/2		
75	77	" "	16424			2		88.4			0		
81	83	C & Sh.	16425			2		33.0			0		
83	85		16426			2		67.9			0		
127	129		16427			2		12.0			7		126.5 - 141' Coal
129	131		16428			2		12.7			8		
131	133	SEAM - 13	16429			2		13.2			7 1/2		145 (13)
133	135		16430			2		14.4			8		
135	137		16431			2		35.5			5		
137	139		16432			2		62.3			1 1/2		
139	141		16433			2		53.1			2 1/2		
141	143	C & Sh.	16434			2		74.5			1/2		
143	145	C & Sh.	16435			2		78.3			0		

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
127	137	SEAM-13 COMPOSITE				10'	0.4	17.8	25.2	56.6	7 1/2	0.44	
156	158		16436			2		46.7			3		
158	160		16437			2		69.0			1		
255	257		16438			2		36.4			6		254-257' COAL
257	259		16439			2		14.9			5		3'
259	261		16440			2		80.8			1/2		
255	259	COMPOSITE				4'	0.5	26.0	23.3	50.2	5 1/2	0.69	
		SEAM-12											
349	351		19426			2		46.1			3		
351	353		19427			2		25.2			7		
353	355		19428			2		27.3			6 1/2		
355	357	SEAM-11U	19429			2		42.7			2		
357	359		19430			2		23.0			2		
359	361	C & Sh.	19431			2		72.5			1/2		
361	363	" "	19432			2		79.1			1/2		

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
351	359	SEAM-III COMPOSITE				8'	0.3	30.2	20.2	49.3	4 1/2	0.30	
422	424		19433			2		39.8			3		420.5 – 423
424	426		19434			2		25.0			6		Shaley Coal
426	428		19435			2		27.1			2		
428	430		19436			2		13.4			6.		423-430' Good Coal
430	432	SEAM-II	19437			2		51.4			1 1/2		7'
432	434		19438			2		52.5			1		
434	436		19439			2		66.4			1		
436	438		19440			2		67.0			1		435-440' Good Coal
438	440		19441			2		46.8			2		
440	442		19442			2		42.1 ✓			4 1/2 ✓		CHECKED JAN 28 '77
442	444		19443			2		61.8			1		
444	446		19444			2		56.1			1		
446	448	C&Sh.	19445			2		79.5			0		
424	430	SEAM-II COMPOSITE				6'	0.4	22.0	22.1	55.5	4 1/2	0.44	
498	500		19446			2		70.8			1/2		
500	502		19447			2		42.5			5 1/2		
502	504	C&Sh.	19448			2		82.8			0		
526	528	SEAM-9	19449			2		21.0			1		
528	530		19450			2		20.2			1 1/2		
530	532		16441			2		22.5			2 1/2		525 - 541 Coal
532	534		16442			2		11.1			2 1/2		16'
534	536		16443			2		24.2			1		
536	538		16444			2		16.8			1 1/2		
538	540												

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
526	538	SEAM - 9 COMPOSITE				12'	0·4	20·0	21·0	58·4	1 1/2	0·22	
SA1	543		16445			2		35·3			2 1/2		
SA3	545		16446			2		75·9			0		

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DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
71.0	79.6		10345			8.6		25.7			6		
161.0	162.4		10346			1.4		55.1			1/2		
241.6	249.0	SEAM - 12	10347			7.4		23.8			6 1/2		240 - 248 COAL 8'
241.6	249.0		10347			7.4	0.5	26.0	21.6	51.9	6 1/2	0.74	
320.5	327.5	SEAM 11U	10348			7		18.9			8 1/2		318-328' COAL 10
327.5	331.5		10349			4		28.9			5		
320.5	331.5	SEAM - 11U COMPOSITE				11	0.6	22.9	22.1	54.4	7 1/2	0.57	
390.9	401.9		10350			11		17.2			7 1/2		
401.9	405.9	MUDDY COAL SEAM - 11	10383			4		55.7			3		
405.9	410.5		10384			4.6		40.3			5		
390.9	401.9		10350			11	0.6	17.2	23.0	59.2	7 1/2	0.59	
405.9	410.5		10384			4.6	0.5	40.5	18.9	40.1	5 1/2	0.75	
522.9	527.9	MUDSTONE. SEAM - 9	10385			5		50.3			3 1/2		
527.5	537.5		10386			10		10.2			5 1/2		
537.5	541.1		10387			3.6		11.8			8		
527.5	541.1					13.4	0.7	11.0	23.2	65.1	6	0.47	
601.5	606.2		10388			4.7		28.1			4 1/2		
758.0	764.2		10389			6.2		20.6			5		
764.2	766	2' MDST. PARTING SEAM - 7 INCLUDED	10390			1.8		50.9			3 1/2		

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
758	764.2		10389			6.2	0.5	20.8	20.8	57.9	5	0.52	
773.9	780.5		10391			7.5		22.6			2 1/2		
773.9	780.5		10391			7.5	0.4	23.0	21.6	55.0	2 1/2	0.43	
785	788		10392			3		21.7			2		
847	856	SEAM - 5	10393			9		13.8			7 1/2		846.5 - 865.5 Cont.
856	863		10394			7		37.8			1 1/2		19'
863	867.6		10395			4.6		20.7			4 1/2		
847	867.6	SEAM - 5 COMPOSITE				20.6	0.5	23.1	19.7	56.7	5 1/2	0.46	

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
66	68		16453			2		7.0			3 1/2		
68	70	SE AM-13	16454			2		6.4			9		
70	72		16455			2		7.9			6		66-79.5
72	74		16456			2		14.3			8		
74	76	C & Sh.	16457			2		41.9			4 1/2		13.5 (12)
76	78	C & Sh.	16458			2		34.7			5 1/2		
78	80	C & Sh.	16459			2		40.2			6		
80	82	C & Sh.	16460			2		59.6			1		
66	74	COMPOSITE				8'	0.4	9.2	27.6	62.8	6 1/2	0.48	
66	80	COMPOSITE				14'	0.2	21.8	25.3	52.7	5 1/2	0.46	
94	96	C & Sh.	16461			2		22.9			7 1/2		
96	98	C & Sh.	16462			2		40.9			4		
145	147		16463			2		18.6			8		
147	148		16464			1		57.5			3		
160	162		16465			2		7.1			8 1/2		
162	164	C & Sh.	16466			2		72.2			1		
164	166	C & Sh.	16467			2		82.2			0		
174	176		16468			2		25.7			4 1/2		
176	178	C & Sh. SE AM-12	16469			2		67.5			1		172-181
178	180	C & Sh.	16470			2		40.5			6 1/2		9 (7)
180	182	C & Sh.	16471			2		14.5			9		
182	183	C & Sh.	16472			1		71.1			2		
174	182	COMPOSITE				8	0.5	37.1	20.4	42.0	4 1/2	0.69	

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
228	230		16473			2		54.8			3 1/2		227-237 Coal
230	232	SE AM-110	16474			2		13.0			8 1/2		10'
232	234		16475			2		23.0			7		
234	236		14276			2		40.0			3		
236	238		14277			2		30.0			1 1/2		
238	240		14278			2		70.7			1		
240	242	C & Sh.	14279			2		78.4			1/2		
230	238	COMPOSITE				8	0.3	35.8	23.3	50.6	5 1/2	0.54	Calculated 26.5 Sp.
321	323		14280			2		19.7			7 1/2		320.5-330 Coal
323	325		14281			2		21.1			5 1/2		
325	327		14282			2		23.8			4		
327	329	SE AM-11	14283			2		5.7			8		
329	331		14284			2		46.6			4		
331	333		14285			2		25.6			6		
333	335		14286			2		65.9			1		
335	337		14287			2		39.7			7		335-339 Coal
337	339		14288			2		21.4			8 1/2		
339	341		14289			2		50.6			4		
341	343		14290			2		36.4			6		
343	345	C & Sh.	14291			2		66.5			1		
321	333	COMPOSITE				12	0.5	24.3	22.0	53.2	6 1/2	0.58	
321	343	COMPOSITE				22	0.4	32.8	20.7	46.1	6 1/2	0.60	

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
422	424	C & Sh.	14292			2		60.2			1		
439	441	C & Sh.	14293			2		69.9			1 1/2		
441	443		14294			2		52.0			1 1/2		
443	445		14295			2		28.0			3		442.5-26.15
445	447		14296			2		12.4			8		
447	449	SEAM - 9	14297			2		11.5			7 1/2		19
449	451		14298			2		15.3			2 1/2		
451	453		14299			2		46.0			1		
453	455		14300			2		10.0			2 1/2		
455	457		12701			2		14.5			7		
457	459		12702			2		14.6			6		
459	461	C & Sh.	12703			2		—			—		
443	459	COMPOSITE				16'	0.6	19.4	20.7	59.3	4 1/2	0.21	
467	469	C & Sh.	12704			2		54.3			1		
469	470	C & Sh.	12705			2		75.6			1 1/2		

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DIAMOND DRILL SAMPLING RECORD

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NOV 17 '76

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD LOG. INTERS.
20	22		19026			2		16.2			1/2		18-27' COAL 9'
22	24		19027			2		14.4			1		
24	26		19028			2		12.4			3 1/2		
26	28		19029			2		12.9			4 1/2		
28	30	C & Sh.	19030			2		42.7			1		
20	28	SEAM- HU COMPOSITE 19026 - 029				8'	0.1	13.9	23.0	63.0	2 1/2	0.59	
33	35	C & Sh.	19031			2		41.8			1/2		
35	37		19032			2		35.8			1		
37	39		19033			2	0.3	40.4	18.2	41.1	1, 1	0.51	
39	41	P.A. % S & FSI →	19034			2	0.3	25.7			1		
41	43		19035			2		46.9			1/2		
43	45		19036			2		53.8			1/2		
45	47	P.A. % S & FSI →	19037			2	0.3	30.3	19.7	49.7	1/2	0.71	
47	49	C & Sh.	19038			2		45.8			1/2		
49	51	C & Sh P.A. % S & FSI →	19039			2	0.2	26.6, 27.1	20.3	52.4	1/2, 1/2	0.62	

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD LOG. INTERSECT
45	51	COMPOSITE 19037-039				6	0.3	35.0	18.8	45.9	1/2	0.60	
166	168	C & Sh.	19040			2		22.4			4 1/2		
168	170	C & Sh.	19041			2		42.0			1		
170	172	" "	19042			2		19.1			3 1/2		165.5-182.5 COAL
172	174	" "	19043			2		31.6			2		17'
174	176	" "	19044			2		12.0			4		
176	178	" "	19045			2		27.2			7		
178	180	" "	19046			2		21.1			6 1/2		
180	182	" "	19047			2		35.5			2 1/2		
182	184	" "	19048			2		48.2			2		
184	186	" "	19049			2		44.6			4 1/2		
186	188	" "	19050			2		59.1			1		
188	190	" "	18976			2		78.0			0		
190	192	" "	18977			2		34.9			4		
192	194		18978			2		66.4			1/2		
166	182	SEAM-3 COMPOSITE 19040-047				16'	0.4	26.4	20.2	53.0	3 1/2	0.62	

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DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
57	59	C & Sh.	19115			2		27.4			4 1/2		
59	61	" "	19116			2		48.1			1/2		
61	63	" "	19117			2		58.4			1/2		
63	65	" "	19118			2		50.1			1		
65	67	" "	19119			2		64.9			1/2		
67	69	" "	19120			2		56.8			1		74-83' COAL 9'
69	71	" "	19121			2		86.3			0		
71	73	" "	19122			2		59.2			1/2		
73	75	" "	19123			2		59.2			1/2		85-87' COAL 2'
75	77	" "	19124			2		25.6			5 1/2		
77	79	" "	19125			2		33.2			2 1/2		90-92 COAL 2
79	81	" "	19126			2		20.2			4 1/2		
81	83	" "	19127			2		38.2			4		
83	85	" "	19128			2		26.8			4		
85	87	" "	19129			2		73.0			1/2		
87	89	" "	19130			2		67.6			1/2		
89	91	" "	19131			2		45.4			1/2		
91	93	" "	19132			2		67.5			1		
75	85	COMPOSITE				10'	0.4	29.4	20.8	49.2	3 1/2	0.59	
105	107	C & Sh.	19133			2		53.5			1		
107	109	C & Sh.	19134			2		44.0			4		
109	111	" "	19135			2		45.5			2		
255	257	C & Sh.	19136			2		71.8			1/2		

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
266	268	C&Sh.	19137			2		85.0			0		
268	270	" "	19138			2		41.4			1		
270	272	" "	19139			2		34.2			1		
272	274	" "	19140			2		23.5			1		272 - 278 COAL
274	276	" "	19141			2		51.8			1/2		
276	278	" "	19142			2		68.6			0		
278	280	" "	19143			2		67.1			1		
280	282	" "	19144			2		84.4			0		
270	274	COMPOSITE				4	0.5	29.7	18.3	51.5	1	0.51	
332	334	C&Sh.	19146			2		18.6			4		
334	336	" "	19147			2		29.3			1		
336	338	" "	19148			2		25.9			1		335.5 - 344' COAL
338	340	" "	19149			2		NO SAMPLE					8.5'
340	342	" "	19150			2		60.8			1 1/2		
342	344	" "	19151			2		54.3			1		
344	346	" "	19152			2		82.6			0		
346	348	" "	19153			2		46.1			1		
348	350	" "	19154			2		60.8			1		
332	338	COMPOSITE				6'	0.6	25.3	19.4	54.7	2	0.73	
364	366	C&Sh.	19155			2		71.5			1		
366	368	" "	19156			2		63.1			1		
531	533		19157			2		22.0			1 1/2		
533	535		19158			2		45.6			1		

DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
15	17	C & Sh.	18328			2		60.0			1/2		
17	19	" "	18329			2		29.5			4		
19	21	" "	18330			2		22.5			7 1/2		
21	23	" "	18331			2		35.8			6		
23	25	" "	18332			2		30.3			5		
17	25	COMPOSITE				8	0.6	30.1	20.4	48.9	6	0.68	
28	30		18333			2		17.4			7		27-41' COAL 14'
30	32		334			2		20.1			6 1/2		
32	34		335			2		10.5			6 1/2		
34	36		336			2		27.8			5		
36	38		337			2		20.5			6 1/2		
38	40	C & Sh.	18338			2		16.3			4 1/2		
28	40	SEAM - 111U COMPOSITE				12	0.5	19.2	22.9	57.4	6 1/2	0.64	
49	51	C & S	18339			2		46.5			5		
55	57		18340			2		67.0			1/2		
57	59		341			2		83.5			0		70-73' SHALEY COAL
59	60		342			1		88.4			0		73-79' COAL
60	61		343			1		81.0			0		
61	63		344			2		37.1			3 1/2		
63	65		18345			2		43.2			3 1/2		
65	67		346			2		79.9			0		
67	69		347			2		73.3			1/2		
69	71		348			2		37.3			4 1/2		
71	73		349			2		30.1			4		
73	75		18350			2		36.9			2		
75	77		18316			2		36.0			2		
77	79		18317			2		22.0			3 1/2		

DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
79	81		18378			2		35.3			1		
81	83		379			2		46.2			1		
83	85		18380			2		67.4			0		
85	87		18381			2		66.0			1/2		
71	79	COMPOSITE 18349-377				8'	0.5	30.8	19.4	49.3	3	0.77	
96	98		18382			2		47.2			1		
98	100		383			2		22.1			6 1/2		
100	102		384			2		22.2			2		99-103 COAL A'
102	104		385			2		41.9			1/2		
104	106		386			2		70.1			0		
106	108	C & Sh.	18387			2		73.7			1/2		
108	110	" "	18388			2		78.6			0		
98	102	COMPOSITE				4	0.5	21.8	20.4	57.3	4 1/2	0.71	
233	235		18389			2		49.9			1 1/2		
235	237		18390			2		41.6			1		
237	239		391			2		26.9			5		237-245' COAL B
239	241		392			2		25.8			3.		
241	243		393			2		54.6			1		
243	245		394			2		74.6			1/2		
245	247		395			2		48.5			1		
247	249	C & SH.	396			2		69.9			1		
249	251	C & Sh.	18397			2		61.0			0		
251	253	" "	398					60.8			1		
253	255	" "	18399					80.1			1		

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
237	241	COMPOSITE.				4	0.5	26.1	22.5	50.9	4 1/2	0.53	
265	267	CE Sh.	18475			2		60.2			1		
267	269	" "	18476			2		68.8			1		
269	271	" "	18477			2		52.8			1		
271	273	" "	18478			2		85.5			0		

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RH 610 Hole No.

DIAMOND DRILL SAMPLING RECORD

379

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
29	31	P.A. o/a & & FSI	19176			2	0.6	23.6, 23.6	23.6	53.4	6 1/2, 6 1/2	0.71	31.5 - 33.5 COAL
31	33	C&Sh.	19177			2		51.9			2 1/2		2'
33	35	" "	19178			2		40.7			6		
35	37	" "	19179			2		28.9			5 1/2		
37	39		19180			2		11.0			7		37.5 - 43.5 COAL
39	41		19181			2		38.4			6		6'
41	43		19182			2		83.4			0		
35	41	COMPOSITE.				6'	0.4	25.7	21.3	52.6	6	0.51	
55	57		19183			2		27.1			2 1/2		55 - 66.5 COAL
57	59		19184			2		13.3			7 1/2		11.5'
59	61		19185			2		23.9			3		2' SHALE
61	63		19186			2		13.0			7 1/2		68.5 - 70.0 COAL
63	65		19187			2		46.0			3 1/2		1.5'
65	67		19189			2		77.8			1/2		
67	69	C&Sh.	19190			2		66.3			1 1/2		
69	71	" "	19191			2		81.3			0		
55	63	COMPOSITE				8'	0.6	19.0	21.7	58.7	5 1/2	0.57	
87	89	C&Sh.	19192			2		58.3				1 1/2	94.5 - 97 SHLY. COAL
89	91	" "	19193			2		48.2				3 1/2	
91	93	" "	19194			2		75.1				1	
93	95	" "	19195			2		71.0				1	99 - 107 COAL
95	97	" "	19196			2		72.4				1	8'
97	99	" "	19197			2		16.7				5 1/2	
99	101	" "	19198			2		19.9				5	
101	103	" "	19199			2		37.2				1	
103	105	" "	19200			2		32.1				1	

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD LOG.
105	107	C & Sh.	18751			2		63.5			1		
97	105	COMPOSITE				8'	0.5	27.1	18.9	53.5	2 1/2	0.54	
120	122	C & Sh.	18752			2		25.9			3		121-126.5 COAL 5.5'
122	124	" "	18753			2		30.5			1		
124	126	" "	18754			2		42.2			1 1/2		
126	128	" "	18755			2		76.8			0		
128	130	" "	18756			2		82.0			0		
130	132	" "	18757			2		85.3			0		
120	124	COMPOSITE				4'	0.6	28.3	18.7	52.4	1 1/2	0.37	
247	249	C & Sh.	18758			2		21.3			1		
249	251	" "	18759			2		48.1			1 1/2		
251	253	" "	18760			2		66.1			1/2		
253	255	" "	18761			2		42.8			2		
255	257	" "	18762			2		72.8			1/2		
257	259	" "	18763			2		83.4			0		
259	261	" "	18764			2		47.8			1		
261	263	" "	18765			2		81.2			0		
263	265	" "	18766			2		53.3			1		
265	267	" "	18767			2		63.2			1		
267	269	" "	18768			2		72.7			1/2		
281	283	C & Sh.	18769			2		64.3			1		
283	285	" "	18770			2		55.8			1		

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
285	287		18771			2		38.6			1 1/2		
503	505	C & Sh.	18772			2		85.2			0		

DIAMOND DRILL SAMPLING RECORD

Nov 13'76

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
18	20		18111			2		20.8			6 1/2		10- 34' COAL
20	22		18112			2		28.8			6 1/2		WITH 2' PARTING
22	24		18113			2		7.2			7		AT 16.5'
24	26		18114			2		9.2			7 1/2		
26	28		18115			2		10.7			7 1/2		
28	30		18116			2		22.4			3 1/2		
30	32		18117			2		25.0			4 1/2		
32	34		18118			2		38.8			3 1/2		
34	36		18119			2		70.4			0		
36	38		18120			2		79.2			0		
18	32	SEAM- 11U COMPOSITE				14	0.7	17.2	23.3	58.8	6 1/2	0.39	
45	47	C & Sh.	18121			2		33.5			5 1/2		
62	64	C & Sh.	18122			2		67.9			1/2		
64	65	" "	18123			1		84.4			0		
74	76	C & Sh.	18124			2		86.0			0		
76	78	" "	18125			2		30.4			7		74 - 77 COAL 3'
78	80	" "	18026			2		30.0			6		
76	80	COMPOSITE				4	0.5	29.4	19.3	50.8	5 1/2	0.48	
112	114	C & Sh	18027			2		58.3			1 1/2		
114	116	" "	18028			2		72.0			1		
116	118	" "	18029			2		68.8			1		
118	120	" "	18030			2		64.8			1		
120	122	" "	18031			2		32.5			3 1/2		
122	124	" "	18032			2		28.5			1		
124	126	" "	18033			2		21.2			3		

DIAMOND DRILL SAMPLING RECORD

NOV 13 '76

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
126	128	C & Sh.	18034			2		88.1			0		
128	130	" "	18035			2		80.6			1/2		
130	132	" "	18036			2		69.4			1		
132	134	" "	18037			2		43.2 ✓			3 ✓		CHECKED FEB 7 '77
134	136	" "	18038			2		23.5			2 1/2		
136	138	" "	18039			2		30.4			1		
138	140	" "	18041			2		42.7			1/2		
120	126	COMPOSITE 18031-033				6	0.6	27.5	19.5	52.4	2 1/2	0.21	
134	138	COMPOSITE 18038-039				4	0.5	27.6	19.0	52.9	2	0.33	
316	318	C & Sh	18042			2		46.0			1		
318	320	" "	18043			2		53.9			1		
320	322	" "	18044			2		74.3			1/2		
336	338	C & Sh	18045			2		29.2			2 1/2		
338	339	C & Sh.	18046			1		41.2			3 1/2		
341	343		18047			2		76.2			1		
347	349	C & Sh	18048			2		72.8			1/2		
349	351	" "	18049			2		75.5			1/2		
351	353	" "	18050			2		60.7			1		
353	355	" "	18051			2		78.6			1/2		

RH 612 A Hole No.

DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
417	419	C & Sh	18053			2		12.2			2 1/2		
419	421	" "	18054			2		50.4			1		
421	423	" "	18055			2		72.0			1/2		
2													
437	439	C & Sh	18056			2		32.9			4 1/2		
439	441	" "	18057			2		79.1			1/2		
441	443	" "	18058			2		85.7			0		
443	445	" "	18059			2		77.2			0		
445	447	" "	18060			2		87.7			0		
447	449	" "	18061			2		83.0			0		
449	451	" "	18062			2		66.9			1/2		
451	453	" "	18063			2		47.8			1 1/2		
453	455	C & Sh.	18064			2		70.4			1		
483	485	C & Sh.	18065			2		74.5			1/2		
485	487	" "	18066			2		78.2			0		
487	489	" "	18067			2		66.0			1/2		

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DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	RAD. LOG. REMARKS
47	48		18069			1		58.4			2 1/2		45.5 - 50.5 COAL 5'
48	49		18070			1		16.9			6 1/2		
49	50		18071			1		8.7			8		53.5 - 55.5 COAL 2'
50	51		18072			1		7.3			7 1/2		
51	52		18073			1		6.1			8		58 - 60.5 COAL 2.5'
52	53	C & Sh.	18074			1		79.1			0		
53	54	" "	18075			1		11.4			7 1/2		
54	55	" "	18076			1		4.0			8		
55	56	" "	18077			1		2.0			8 1/2		
56	57	" "	18078			1		51.4			5		
57	58	" "	18079			1		82.2			0		
48	56	COMPOSITE				8	0.6	16.6	25.1	57.7	7 1/2	0.22	
129	130		18080			1		12.2			6 1/2		128 - 130' COAL 2'
130	131		18081			1		5.8			8		
131	132		18082			1		26.6			7		
132	133	C & Sh.	18083			1		58.3			1 1/2		
129	132	COMPOSITE				3	0.5	14.4	25.3	59.8	7	0.37	
235	237	C & Sh	18084			2		40.9			6 1/2		
237	239	" "	18085			2		14.0			4		234 - 238' COAL 4'
239	241	" "	18086			2		18.8			3		
241	243	" "	18087			2		58.6			2 1/2		
237	241	COMPOSITE				4	0.6	16.7	21.7	61.0	5	0.39	
252	254	C & Sh.	18088			2		26.2			7		251.5 - 263.5 COAL 12'
254	256		18089			2		18.3			7		
256	258		18090			2		12.2			7		

DIAMOND DRILL SAMPLING RECORD

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RAD. LOG

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
258	260		18091			2		13.3			7		
260	262		18092			2		11.2			3		
262	264		18093			2		15.6			4 1/2		
264	266	C & Sh.	18094			2		48.3			3		
252	264	COMPOSITE				12	0.6	16.2	22.8	60.4	6 1/2	0.41	
292	294	C & Sh.	18095			2		21.6			7		290.5 - 300.5 (9A
294	296		18096			2		20.1			7 1/2		10'
296	298		18097			2		20.2			5		
298	300		18098			2		16.3			6		
300	302		18099			2		45.2			5		
302	304	C & Sh.	18100			2		75.7			1/2		
292	300	COMPOSITE				8	0.5	19.6	22.7	57.2	7	0.60	
336	338	C & Sh.	18001			2		16.5			7		335.5 - 338.5 COA
338	340	" "	18002			2		51.8			2 1/2		
		P.A. & S & FSI.	18001			2	0.6	16.0	24.6	58.8	7	0.49	
343	345	C & Sh.	18003			2		56.2			1		342.5 - 346.5 COAL
345	347	" "	18004			2		57.7			1 1/2		
353	355	C & Sh.	18005			2		53.7			1		353 - 356' COAL
355	357	" "	18007			2		50.2			1		
454	456		18009			2		NO	SAMPLE				
456	458		18010			2		42.2			1/2		452 - 456' COAL
458	460		18011			2		47.5			1/2		4'
460	462		18012			2		69.0			0		

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
462	464		18013			2		66.4			0		
464	466		18016			2		60.9			1/2		
469	471		18014			2		25.0			3		467-478 COAL
471	473		18015			2		45.9			1		11'
473	475		18017			2		23.0			5		
475	477		18018			2		25.3			4 1/2		
477	479		18019			2		24.8			2 1/2		
479	481		18020			2		48.8			2 1/2		
481	483		18021			2		53.3			1		
483	485		18022			2		42.8			1		
485	487		18023			2		NO	SAMPLE				
487	489		18024			2		55.3			1		
469	479	COMPOSITE				10	0.5	28.7	20.3	50.5	3	0.54	

DIAMOND DRILL SAMPLING RECORD

31

Nov 17 '76
RAD LOG.

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
30	32	C & Sh.	18979			2		50.8			2		
32	34	" "	18980			2		33.0			6		
34	35	" "	18981			1		79.9			0		
32	34	P.A. 40.3 & FSI	18980			2	0.6	32.8	22.7	43.9	6	0.43	
						2		NA					
59	61	C & Sh	18982			2		40.1			3		58-62' COAL
61	62	C & Sh.	18983			1		50.2			4		
66	68	C & Sh	18984			2		65.4			1 1/2		66-68.5 COAL
68	70	" "	18985			2		48.3			3		
122	124	C & Sh.	18986			2		71.0			0		122-128' COAL
124	126	" "	18987			2		22.6			8		6'
126	128	" "	18988			2		26.4			8		
128	130	" "	18989			2		NO	SAMPLE.				
130	132	" "	18990			2		82.4			0		132-149' COAL
132	134		18991			2		62.5			1/2		17'
134	136		18992			2		11.5			6 1/2		14' - LOW ASH COAL
136	138		18993			2		17.3			7		
138	140		18994			2		18.1			7		
140	142		18995			2			NO SAMPLE				
142	144		18996			2		15.1			7		
144	146		18997			2		13.2			5 1/2		
146	148	C & Sh.	18998			2		24.0			6		
148	150	" "	18999			2		39.2			6		CHECKED FEB 9 '7
124	128	COMPOSITE 18987-988				4	0.5	24.8	23.0	51.7	5 1/2	0.64	
134	150	SEAM - 12 COMPOSITE.			14/16		0.7	20.0	21.4	57.9	6 1/2	0.13	
191	193	C & Sh.	19000			2		46.3			4 1/2		189.5-203' COAL
193	195	" "	19001			2		20.2			7		13.5'

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RH 614 — Hole No.

DIAMOND DRILL SAMPLING RECORD

319

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
195	197		19052			2		13.8			8 1/2		
197	199		19053			2		33.3			1 1/2		
199	201		19054			2		12.0			7		
201	203		19055			2		19.9			7 1/2		
203	205		19056			2		53.2			3 1/2		
193	203	SEAM - 110 COMPOSITE	19051-55			10'	0.6	19.9	23.6	55.9	7	0.27	
242	244	C & Sh.	19057			2		68.0			1		
244	246	" "	19058			2		54.2			3 1/2		
246	248		19059			2		73.0			1		247-259' COAL
			19060					27.0			5		
248	250		19061			2		57.5			1 1/2		12(105)'
250	252		19062			2		49.9			3 1/2		
252	254		19063			2		26.1			6		
254	256		19064			2		40.6			1		
256	258		19065			2		NO SAMPLE					
258	260		19066			2		84.0			0		
260	262	C & Sh.	19067			2		47.6			1		
282	284	C & Sh.	19068			2		15.0			1		282-286' COAL
284	286		19069			2		38.9			1		4'
286	288		19070			2		38.8			1/2		
288	290	C & Sh.	19071			2		70.4			0		
290	292	" "	19072			2		61.6			1/2		
292	294	" "	19073			2		81.7			0		
294	296		19074			2		79.4			0		
296	298		19075			2		84.2			0		

RH 61A Hole No.

319

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
301	303	C&Sh.	19076			2		71.4			0		
303	305	" "	19077			2		63.9			0		
305	307	" "	19078			2		65.1			0		
307	309	" "	19079			2		67.4			0		
309	311	" "	19080			2		80.3			0		
315	317	C&Sh.	19081			2		79.0			0		316-320 COAL
317	319	" "	19082			2		53.8			1		
339	341	C&Sh.	19083			2		84.1			0		
347	351	C&Sh.	19084			4		88.4			0		
351	353		19085			2		76.9			1/2		
353	355		19086			2		69.9			1		351-352.5 COAL
355	357		19087			2		55.7			1		
357	359		19088			2		28.9			6 1/2		
359	361		19089			2		64.0			1/2		364.5-367 COAL
361	363		19090			2		18.1			6 1/2		
363	365	C&Sh.	19092			2		65.9			0		
365	367	" "	19093			2		61.4			1		
367	369	" "	19094			2		87.1			0		
357	363	COMPOSITE				6'	0.6	37.0	24.0	38.4	4 1/2	0.72	

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
373	375	C&Sh	19095			2		60.0			1		
375	377	" "	19096			2		70.0			1		
377	379	" "	19097			2		60.5			1		
379	381	" "	19098			2		54.1			1		
381	383	" "	19099			2		48.0			1		
396	398		19100			2		83.2			0		
398	400		19001			2		51.1			2		
400	402		19002			2		14.5			2		398.5 - 404' COAL 5.5'
402	404		19003			2		33.1			1		
404	406		19004			2		58.4			1/2		
406	408	C&Sh.	19005			2		70.7			0		
400	404	COMPOSITE				4'							
525	527	C&Sh.	19006			2		NO	SAMPLE				
527	529		19007			2		39.3			1		524-530' GOOD 6'
529	531		19008			2		61.9			1		
531	533		19009			2		28.9			4		
533	535	C&Sh	19010			2		68.8			1		
535	537	C&Sh.	19011			2		53.6			1		532.5-538' C&Sh
537	539	" "	19012			2		61.8			1/2		

DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	RAD. LOG REMARKS
86	88	C & Sh	19013			2		77.7			0		90 - 98 COAL
88	90	" "	19014			2		79.3			0		8'
90	92	" "	19015			2		28.4			4 1/2		1
92	94	" "	19016			2		16.2			6 1/2		102.5 - 108.5 COAL
94	96		19017			2		13.8			8		6'
96	98	C & Sh.	19018			2		74.8			1 1/2		
98	100	C & Sh.	19019			2		54.5			3		
100	102	" "	19020			2		76.7			0		
102	104	" "	19021			2		26.9			7		
104	106	" "	19022			2		56.2			2		
106	108	" "	19023			2		45.1			4		
108	110	" "	19024			2		68.8			1		
90	96	COMPOSITE				6	0.7	20.0	26.1	53.2	7	0.14	
18	20	C & Sh.	18025			2		85.8			0		
206	208		19025			2		12.3			1		
221	223	C & Sh.											
			18252			2		81.9			0		
246	248	C & Sh.											
			18253			2		79.2			1/2		
318	320	C & Sh											
320	322	" "	18301			2		49.9			1		
322	324	" "	302			2		70.3			1/2		319.5 - 323' COAL
			18303			2		61.2			1		3.5'

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Page No. Hole No.

DIAMOND DRILL SAMPLING RECORD

319

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	RAD. LOG. REMARKS
333	335	C & Sh	18304			2		63.2			1		332 - 340' COAL
335	337	" "	18305			2		36.5			3 1/2		8'
337	339	" "	18306			2		16.2			4 1/2		
339	341	" "	18307			2		51.7			3 1/2		
335	339	COMPOSITE				4'	0.6	24.8	21.4	51.2	4	0.19	
346	348	C & Sh	18308			2		67.5			1		349 - 354 GOOD BA
348	350	" "	18309			2		22.5			7 1/2		
350	352	" "	18310			2		32.9			1		354 - 356.5 SHALEY
352	354		18311			2		60.7			1		
354	356		18312			2		50.9			1		
348	352	COMPOSITE				4'	0.8	27.2	22.4	49.6	4 1/2	0.46	
359	361	C & Sh.	18313			2		31.3			4 1/2		
361	363	" "	18314			2		15.4			3 1/2		359.5 - 376 COAL
363	365	" "	18315			2		18.6			5		
365	367	C & Sh.	18316			2		18.3.			6 1/2		
367	369		18317			2		11.0			8		
369	371		18318			2		19.4			7		
371	373	C &	18319			2		11.8			6		
373	375	C & Sh	18320			2		NO	SAMPLE				
375	377	" "	18321			2		80.0			0		
377	379	" "	18322			2		26.2			2.		
359	373	COMPOSITE				14'	0.7	18.4	22.6	58.3	6	0.17	
391	393	C & Sh	18323			2		19.3			7		390 - 393.5 COAL
393	395	" "	18324			2		68.2			2 1/2		3.5'
391	393	P.A. & G. & FSI	18323			2	0.5	19.0	23.9	56.6	7 1/2	0.74	

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DIAMOND DRILL SAMPLING RECORD

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FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
425	427	C & Sh.	18325			2		78.5			0		
427	429	" "	18326			2		31.1			4		424.5 - 429' COAL
429	431	" "	18327			2		58.8			1 1/2		4.5'
427	429	P.A. & S & FSI	18328			2	0.6	31.5	20.1	47.8	3 1/2	0.38	
452	454	C & Sh	18354			2		70.0			1		
454	456	" "	18355			2		87.5			0		
458	460	C & Sh.	18356			2		71.4			1/2		
460	462	" "	18357			2		84.5			0		
480	482	C & Sh.	18358			2		92.2			1		480 - 485.5 COAL
482	484	" "	359			2		45.6			1		5.5'
484	486	" "	18360			2		74.4			0		
494	496	C & Sh. #2	18361			2		58.2			1		
496	498	#1	18362			2		14.7			1		
498	500		18363			2		12.9			2		
500	502		18364			2		37.6			1		493.5 - 502 COAL
502	504		18365			2		40.3			1		8.5'
504	506	C & Sh.	18366			2		69.2			0		
506	508	C & Sh.	18367			2		67.0			0		
508	510	" "	18368			2		86.0			0		
496	500	#1 COMPOSITE				4	0.8	14.0	20.2	65.0	1	0.61	
496	504	#2 COMPOSITE				8	0.7	26.7	18.0	54.6	1	0.40	

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Page No. Hole No.

DIAMOND DRILL SAMPLING RECORD

Nov. 22 '76

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
153	155	C & Sh	18576			2		43.6			4		
155	157	" " SEAM-R7u	18577			2		31.4			3		
157	159	" "	18578			2		55.3			1/2		
159	161	" "	18579			2		75.6			0		
244	246	C & Sh	18580			2		83.4			0		
246	248	" "	18581			2		47.1			0		
248	250	" "	18582			2		87.5			0		
250	252	" "	18583			2		89.2			0		
300	302		18584			2		90.2			0		
302	304		18585			2		82.3			0		
3													
310	312		18586			2		67.4			1/2		310 } 14' COAL
312	314		18587			2		9.0			5		324 }
314	316		18588			2		33.8			1 1/2		
316	318	SEAM-R7	18589			2		16.3			2		
318	320		18590			2		22.2			3 1/2		
320	322		18591			2		12.7			4		
322	324		18592			2		22.7			6 1/2		
324	326		18593			2		70.6			1		
326	328		18594			2		71.0			1		
328	330		18595			2		76.7			1		
312	324	SEAM-R7 COMPOSITE				12	0.6	19.9	19.4	60.1	3 1/2	0.28	

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Page No. Hole No.

DIAMOND DRILL SAMPLING RECORD

319

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
399	401		18276			2		42.0			1		
401	403		18277			2		24.0			1 1/2		
403	405		18278			2		26.6			1		
405	407		18279			2		15.5			1		398-429 COAL
407	409		18280			2		10.1			1 1/2		31'(30)'
409	411		18281			2		15.7			1		
411	413		18282			2		14.8			1		
413	415	SEAM	18283			2		12.3			1		
415	417		18284			2		20.8			1 1/2		
417	419		18285			2		15.0			1		
419	421	-R5	18286			2		10.8			1		
421	423		18287			2		11.6			2 1/2		
423	425		18288			2		17.2			1		
425	427	C&Sh.	18289			2		71.0			0		
427	429		18290			2		34.2			1		
429	431	C&Sh.	18291			2		76.1			0		
431	433	C&Sh.	18292			2		77.2			0		
433	435	" "	18293			2		72.1			1/2		
401	425	SEAM- R5 COMPOSITE				24'	0.6	16.8	18.0	64.6	1 1/2	0.31	
441	443	C&Sh.	18294			2		79.6			0		

DIAMOND DRILL SAMPLING RECORD

Nov. 24 '76 317

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
151	153	C & Sh.	18557			2		81.6			0		
153	155	" "	18558			2		92.3			0		
155	157	" "	18559			2		84.1			0		
157	159	" "	18560			2		90.9			0		
159	161	" "	18561			2		92.2			0		
161	163												
145	147	C & Sh	18562			2		87.5			0		
147	149	" "	18563			2		91.3			0		
173	175	C & Sh. SEAM - R 7"	18564			2		47.7			1		
175	177	" "	18565			2		18.4			6		
177	179	" "	18566			2		79.3			1/2		
264	266		18567			2		31.5			1		
266	268		18568			2		22.0			2 1/2		
268	270		18569			2		9.1			1		
270	272	SEAM - R7	18570			2		17.0			7 1/2		
272	274		18571			2		20.6			5 1/2		263-290 COAL
274	276		18572			2		16.2			6		27'
276	278		18573			2		22.5			1		
278	280		18574			2		21.4			1		
280	282		18575			2		12.0			3 1/2		
282	284		19476			2		10.7			1 1/2		
284	286		19477			2		9.2			4 1/2		
286	288		19478			2		13.0			6		
288	290		19479			2		11.6			6		
290	292	? C & Sh.	19480			2		81.2			0		

DIAMOND DRILL SAMPLING RECORD

310

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
264	290	SEAM- R7 COMPOSITE				26'	0.5	16.5	19.6	63.0	3	0.28	
397	399		19451			2		86.1			0		
399	401		19452			2		87.0			0		
401	403		19453			2		80.1			0		
403	405		19454			2		48.8 ✓			1 ✓		CHECKED FEB 7 '77
405	407		19455			2		53.9 ✓			1 ✓		
407	409		19456			2		46.4 ✓			1 ✓		402 - 437 COAL
409	411	SEAM -R5	19457			2		21.5			1 1/2		35.5 (34)
411	413		19458			2		15.4			1 1/2		
413	415		19459			2		14.4			2 1/2		
415	417		19460			2		14.0			2		
417	419		19461			2		12.7			3		
419	421		19462			2		10.5			2 1/2		
421	423		19463			2		15.7			2		
423	425		19464			2		13.6			1 1/2		
425	427		19465			2		29.1			1		
427	429		19466			2		15.4			1 1/2		
429	431		19467			2		28.1			1		
431	433		19468			2		30.4			1		
433	435		19469			2		69.9			1/2		
435	437		19470			2		60.3			1		
437	439		19471			2		83.7			0		
409	433	SEAM- R5 COMPOSITE				24	0.2	18.0	18.9	62.9	2	0.12	
650	652	C & Sh	18896			2		38.9			1		
652	654	" "	18897			2		40.9			1		
654	656	" "	18898			2		49.9			1		
656	658	" "	18899			2		51.8			1		
658	660	" "	18900			2		68.3			1		
660	662	" "	18851			2		50.1			1		

DIAMOND DRILL SAMPLING RECORD

3D

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
662	664	Cl. Sh.	18852			2		26.7			1 1/2		
664	666		18853			2		21.2			2		
666	668		18854			2		11.7			3		
668	670		18855			2		12.9			2		
670	672		18856			2		14.3			4 1/2		
672	674	SEAM - R4	18857			2		10.4			6 1/2		661.5-679
674	676		18858			2		9.5			7		
676	678		18859			2		14.6			6		682-686.5
678	680		18860			2		28.2			4 1/2		
680	682		18861			2		51.0			1		25(22)
682	684		18862			2		17.9			6		
684	686		18863			2		14.7			3 1/2		
686	688		18864			2		SAMPLE		LOST			
688	690		18865			2		55.3			1		
662	686	SEAM - R4 COMPOSITE				24	0.2	19.8	18.3	61.7	3 1/2	0.19	

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DIAMOND DRILL SAMPLING RECORD

Nov. 26 '76 311

RAD LOG

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
37	39		18901			2		43.2			1		38-43.9' COAL
39	41		18902			2		11.6			5 1/2		
41	43		18903			2		35.4			7		5.5'
39	43	COMPOSITE				4	0.8	22.4	18.8	58.0	7	0.54	
55	57		18904			2		10.4			4 1/2		56-60' A
57	59		18905			2		31.2			1 1/2		COAL
59	61		18906			2		69.8			1		
55	59	COMPOSITE				4	0.7	20.8	23.7	54.8	2 1/2	0.80	
140	142		18926			2		67.4			1		
142	144		18927			2		61.5			1		143-160.5' COAL
144	146		18928			2		29.6			6		
146	148	SEAM	18929			2		11.6			6		17.5'
148	150		18930			2		12.0			2 1/2		
150	152		18931			2		37.8			1		
152	154	-R7	18932			2		12.4			7 1/2		
154	156		18933			2		16.0			1 1/2		
156	158		18934			2		19.3			1 1/2		
158	160		18935			2		41.9			1		
160	162	C.S.Sh.	18936			2		53.7			1		
144	158	SEAM-R7 COMPOSITE				14	0.7	20.0	19.7	59.6	4 1/2	0.12	
237	239		18937			2		17.1			5		
239	241	SEAM	18938			2		20.1			4		237-257' COAL
241	243		18939			2		35.2			1		20'
243	245	-R5	18940			2		16.4			4		

DIAMOND DRILL SAMPLING RECORD

319

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
245	247		18941			2		18.1			3 1/2		
247	249		18942			2		21.7			1 1/2		
249	251		18943			2		12.8			1		
251	253		18944			2		15.4			2 1/2		
253	255		18945			2		82.7			0		
237	253	SEAM-R5 COMPOSITE				16'	0.7	20.0	18.8	60.5	2 1/2	0.10	

2 OF 2 RH 618

Page No. Hole No.

319

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
27	29		18866			2		45.2			1		
29	31		18867			2		24.9			4 1/2		
31	33	C & Sh.	18868			2		39.2			3 1/2		
37	39		18869			2		48.5			2		
40	42		18870			2		68.2			1		
42	44		18871			2		58.9			1		
44	46		18872			2		55.1			1		
47	49		18873			2		32.6			1		
49	51		18874			2		44.9			1		
65	67	C & Sh.	18875			2		50.0			1/2		
67	69	" "	18951			2		40.7			1 1/2		
248	250	C & Sh	18952			2		12.9			3 1/2		
250	252	" "	18953			2		63.1			1 1/2		
277	279	C & Sh.	18954			2		81.3			0		
343	345		18955			2		18.0			4		344 - 363' Coal
345	347		18956			2		29.8			1 1/2		19'
347	349		18957			2		15.5			2 1/2		
349	351		18958			2		10.3			2 1/2		

 RH 619 Hole No.

319

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
351	353		18959			2		10.7			6 1/2		
353	355		18960			2		26.4			3 1/2		
355	357		18961			2		14.2			3		
357	359		18962			2		15.1			3 1/2		
359	361		18963			2		10.7			6 1/2		
361	363		18964			2		20.2			6 1/2		
363	365		18965			2		55.8			2		
365	367		18966			2		70.5			1		
367	369		18967			2		73.6			1		
343	363	SEAM - R7 COMPOSITE				20	0.3	17.6	19.2	62.9	3 1/2	0.21	
418	420		18968			2		29.0			2 1/2		
420	422		18969			2		36.7			2 1/2		
422	424		18970			2		22.9			3 1/2		
424	426		18971			2		13.5			6		
426	428		18972			2		10.2			1		419 - 436.5 COAL
428	430		18973			2		10.8			1 1/2		
430	432		18974			2		12.3			2		17.5
432	434		18975			2		12.4			1 1/2		
434	436		18976			2		11.7			2		
436	438		18977			2		78.9			0		
418	436	SEAM - R5 COMPOSITE				18	0.2	17.5	19.0	63.3	2	0.16	
448	450		18978			2		41.5			1		
450	452		18979			2		25.5			1 1/2		449 - 479 COAL
452	454		18980			2		17.8			3		30.1
454	456		18981			2		15.1			1		
456	458		18982			2		12.0			2 1/2		

Page No. 2 OF 3 Hole No. RH 619

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
458	460		18833			2		14.0			1 1/2		
460	462		18834			2		14.9			1 1/2		
462	464		18835			2		13.6			2		
464	466		18836			2		17.4			2 1/2		
466	468		18837			2		25.9			2		
468	470		18838			2		10.7			1 1/2		
470	472		18839			2		10.5			3		
472	474		18840			2		11.9			5		
474	476		18841			2		23.7			1 1/2		
476	478		18842			2		38.8 ✓			6 1/2 ✓		CHECKED FEB 7 '77
450	478	SEAM - R5 COMPOSITE				28	0.3	18.6	19.1	62.0	2 1/2	0.15	
486	488		18843					70.0			2 1/2		
488	490		18844					73.1			0		
497	499		18845					56.0			1		

Page No. 3 OF 3 Hole No. RH 619

DIAMOND DRILL SAMPLING RECORD

37

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD LOG
100	102		13477			2		29.6			4 1/2		99.3 109 CHAL
102	104		13478			2		34.1			3		95
104	106		13479			2		13.8			6		
106	108		13480			2		64.0			1		
108	109		13481			1		11.8			8		
100	109	COMPOSITE				9'	0.4	30.7	20.1	48.8	4 1/2	0.54	
111	113		13482			2		54.8			3 1/2		
113	115		13483			2		22.7			6		
115	117	C & Sh.	13484			2		63.1			1		
117	119	" "	13485			2		86.2			0		
132	134		13486			2		55.1			2		
134	136		13487			2		62.9			1		
136	138		13488			2		76.8			0		
138	140		13489			2		45.3			3 1/2		142.5 - 149 CHAL 5.5
140	142		13490			2		68.6			1		
142	144		13491			2		31.0			1		
144	146		13492			2		29.3			6		
146	148		13493			2		28.0			7		
148	149		13494			1		83.2			0		
142	149	COMPOSITE				6'	0.4	30.3	20.0	48.4	4 1/2	0.54	
182	184		13495			2		63.5			1/2		
184	186		13496			2		72.7			1		
186	188		13497			2		78.4			0		
			13498			.		79.3			0		

Page No. 1 OF 1 Hole No. RH 1016

DIAMOND DRILL SAMPLING RECORD

310

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
61	63		19340			2		48.6			4		58-62 COAL
63	65		19341			2		72.0			1		
65	67		19342			2		81.5			112		
70	72		19343			2		55.0			1		68.5-93 COAL
72	74		19344			2		28.0			2		24.5'
74	76		19345			2		15.1			2		
76	78		19346			2		29.4			1		
78	80		19347			2		37.5			2		
80	82		19348			2		30.2			2		
82	84		19349			2		21.0			3		
84	86		19350			2		20.4			3		
86	88		19376			2		18.3			3		
88	90		19377			2		22.2			6		
90	92		19378			2		19.6			3 1/2		
92	94		19379			2		11.2			7.		
92	94	SEAM - F COMPOSITE 19344-379.				22'	0.6	23.3	21.2	54.9	3	0.23	

 Hole No. RH 1022

DIAMOND DRILL SAMPLING RECORD

37

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	RAD. LOG REMARKS
73	75		19380			2		47.4			3		
75	77	P.A. o/o S. & F SI	19381			2		18.8			5 1/2		
79	81	C & Sh.	19382			2		36.7			4 1/2		
81	83	" "	19383			2		88.8			0		
83	85	" "	19384			2		79.8			0		
85	87	" "	19385			2		32.0			3 1/2		
270	272		19386			2		21.3			3		270.5 - 276 COA
272	274		19387			2		10.5			7 1/2		5.5
274	276	C & Sh.	19388			2		68.0			1		
270	274	COMPOSITE				4	0.6	15.8	25.1	58.5	6	0.41	
288	290	C & Sh.	19389			2		71.9			1/2		
290	292	" "	19390			2		86.0			0		
294	296		19391			2		NO	SAMPLE				
296	298		19392			2		32.1			3		
298	300		19393			2		65.2			1		
300	302	C & Sh.	19394			2		79.7			0		
305	307	C & Sh.	19395			2		69.6			1/2		
398	ACC		19396			2		46.3			1		
ACC	ACC2		19397			2		9.6			1 1/2		ACC-A25 COAL 25

Page No. 1 OF 2 Hole No. RH 1026

DIAMOND DRILL SAMPLING RECORD

379

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
A02	A04		19398			2		12.2			2 1/2		
A04	A06		19399			2		31.8			1		
A06	A08		19400			2		38.7			1		
A08	A10		19351			2		35.0			2		
A10	A12		19352			2		33.1			1		
A12	A14		19353			2		8.7			4 1/2		
A14	A16		19354			2		31.4			5		
A16	A18		19355			2		37.9			2 1/2		
A00	A16	SEAM - "F" COMPOSITE				16'	0.4	24.8	20.6	54.2	2 1/2	0.12	

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
58	60		19356			2		41.8			4		60.5-66.5' COAL
60	62		19357			2		23.1			6		6'
62	64		19358			2		9.3			8		
64	66	C & Sh.	19359			2		61.4			2 1/2		
58	64	COMPOSITE.				6'	0.2	24.4	28.2	47.2	6	0.44	
67	69		19360			2		16.5			7		69.5-73' COAL
69	71		19361			2		19.4			7		3.5'
67	71	COMPOSITE				4'	0.3	18.7	30.9	50.1	7	0.55	
232	234	C & Sh.	19363			2		66.7			1		
233	235	C & Sh.	19362			2		59.7			2		
235	237	" "	19363			2		83.5			0		
237	239	" "	19364			2		81.2			0.		
295	297		19366			2		42.2			2		299.5-305.5' COAL
297	299		19367			2		24.2			4		6'
299	301		19368			2		8.6			6 1/2		
295	301	COMPOSITE				6'	0.5	25.5	22.5	51.5	5 1/2	0.35	
320	322	P.A. % S & FSI →	19369			2		15.4			3		
322	324		19370			2	0.5	66.0, 66.4	13.6	19.9	1, 1	0.78	
324	326		19371			2		77.0			1/2		
411	413		19372			2		75.3			1/2		
413	415		19373			2		10.5			1		416-439' COAL
415	417		19374			2		11.4			2		23(22)

CONT.

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DIAMOND DRILL SAMPLING RECORD

377

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
417	419		19375			2		31.8			2		
419	421		18151			2		32.6			1		
421	423		18152			2		20.2			2 1/2		
423	425		18153			2		14.4			7		
425	427		18154			2		10.2			7 1/2		
427	429		18155			2		62.8			1		
429	431	C & Sh.	18156			2		15.1			2		
431	433	" "	18157			2		26.0			2 1/2		
433	435		18158			2		71.6			0		
413	433	COMPOSITE				20'	0.3	24.3	20.2	55.2	3	0.17	

DIAMOND DRILL SAMPLING RECORD

311

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
37	39		18159			2		17.4			7 1/2		40-48 COAL
39	41		18160			2		7.4			8		
41	43		18161			2		6.1			8		
43	45		18162			2		27.9			7		
45	47		18163			2		46.3			5		
47	49		18164			2		62.3			2		
49	50	C & Sh.	18165			2		75.5			1		
5													
37	45	SEAM-H COMPOSITE				8	0.4	14.5	28.2	56.9	7 1/2	0.57	
58	60		18166			2		50.4			3		
60	62		18167			2		79.8			0		
62	64	C & Sh.	18168			2		79.5			0		
137	139		18169			2		82.2			1/2		✓140-146' COAL
139	141		18170			2		47.1			4 1/2		✓ 6'
141	143	C & Sh.	18171			2		12.8			5 1/2		CHECKED JAN 5 '77
137	143	SEAM-GU COMPOSITE				6	0.2	46.6	17.7	35.5	3 1/2	0.45	
266	268	C & Sh.	18172			2		48.4			5		
321	323	C & Sh.	18173			2		27.2			6		324-330 - COAL
323	325	" "	18174			2		25.4			6		6'
325	327	" "	18175			2		16.5			7		
327	329	C & Sh.	18176			2		82.1			0		
321	327	SEAM-FM2 COMPOSITE				6	0.3	22.9	22.4	54.4	6	0.96	

379

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
398	400	C & Sh.	18177			2		9.8			2 4		
400	402	" "	18178			2		28.3			1		
402	404	" "	18179			2		35.7			1		DRILLER
404	406	" "	18180			2		10.5			2 1/2 4		398 – 419 COAL
406	408	" "	18181			2		25.5			6		
408	410	" "	18182			2		39.6			5 1/2		
410	412	" "	18183			2		36.6			3		RAD LOG.
412	414	" "	18184			2		33.3			2		400 – 420 COAL
414	416	" "	18185			2		25.1			5 1/2		20(19)'
414	416	" "	18186			2		87.0			0.		
398	416	SEAM – F COMPOSITE				18'	0.3	27.6	20.3	51.8	2 1/2	0.29	

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DIAMOND DRILL SAMPLING RECORD

377

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
19	21		18187			2		28.6			5 1/2		
21	23		18188			2		7.5			8		17-28 COAL
23	25		18189			2		5.8			8		11'
25	27		18190			2		5.5			7 1/2		
27	29		18191			2		7.8			7 1/2		
29	31		18192			2		46.5			4		
31	33		18193			2		59.0			3		
33	34	C & Sh.	18194			1		78.4			0		
19	29	SEAM- H COMPOSITE				10'	0.3	11.4	29.8	58.5	7 1/2	0.51	
38	40		18195			2		16.5			8		
40	42		18196			2		54.8			3		
42	43		18197			1		74.9			1/2		
137	139		18198			2		39.2			2 1/2		
139	141		18199			2		41.2			4		
			17901			2		40.0			5 1/2		
169	171	C & Sh.	17902			2		41.9			3 1/2		
171	173	" "	17903			2		51.6			1 1/2		
194	196	C & Sh.	17904			2		68.3			1		
196	198	" "	17905			2		64.8			1/2		
198	200	" "	17906			2		80.5			1/2		
200	202	" "	17907			2		84.9			0		
251	253	C & Sh. SEAM- "FM3"	17908			2		26.2			5		249.5-254.5 COAL
253	255	" "	17909			2		8.9			7		5'
251	255	COMPOSITE				4'	0.5	18.0	24.0	57.5	6	0.63	

Nov. 7

DIAMOND DRILL SAMPLING RECORD

377

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
3	5	C & Sh.	17910			2		16.9			0		
5	7	C & Sh	17911			2		17.8			0		
7	9	" "	17912			2		50.0			0		
9	11	" "	17913			2		14.1			0		
11	13	" "	17914			2		64.9			0		
13	15	" "	17915			2		76.8			0		
15	17	" "	17916			2		80.9			0		
52	54	C & Sh.	17917			2		20.6			5 1/2		52 - 57.5' COAL
54	56	" "	17918			2		5.4			8 1/2		5.5'
56	58	" "	17919			2		44.4			4		
52	56	SEAM - FM3 COMPOSITE				4	0.4	13.1	25.3	61.2	7 1/2	0.27	
126	128		17920			2		12.4			8		124 - 131' COAL
128	130		17921			2		12.7			8		7(5)'
130	132		17922			2		35.9			5		
132	134		17923			2		16.9			8		
126	134	SEAM - FM2 COMPOSITE				8	0.5	20.0	22.3	57.2	7 1/2	0.75	
240	242		17924			2		42.0			3 1/2		
242	244		17925			2		—			—		239 - 254' COAL
244	246		17926			2		7.6			5		15'
246	248		17927			2		17.5			1 1/2		
248	250		17928			2		18.8			6		256 - 261' COAL
250	252		17929			2		24.4			4		5'
252	254		17930			2		29.9			2		
254	256		17931			2		—			—		
256	258		17932			2		60.0			1/2		
258	260		17933			2		18.9			8		

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DIAMOND DRILL SAMPLING RECORD

37

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
260	262		17934			2		32.7			2		
262	264		17935			2		26.5			5		
244	264	SEAM - "F" COMPOSITE			48	20	0.5	25.9	20.6	53.0	3 1/2	0.10	
315	317	C & Sh.	17936			2		22.6			6 1/2		
317	319	C & Sh.	17937			2		26.7			1/2		
319	321	" "	17938			2		70.4			1/2		
315	319	COMPOSITE.				4	0.5	24.6	19.8	55.1	3	0.72	

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DIAMOND DRILL SAMPLING RECORD

370

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD.	LOG
6	8	C & Sh	17939			2		7.5			0	✓		
8	10	" "	17940			2		9.7			0	✓	6-23'	COAL
10	12	" "	17941			2		11.8			0	✓		17'
12	14	" "	17942			2		7.6			5			
14	16	" "	17943			2		5.6			2			
18	20	C & Sh	17944			2		10.1			5			
20	22	" "	17945			2		23.2			3			
22	24	" "	17946			2		43.6			3 1/2			
24	26	" "	17947			2		52.1			4		✓	CHECKED JAN'5'77
26	28		17948			2		64.1			1			
6	22	SEAM-HL COMPOSITE	17939-945		14	16'	0.5	11.1	28.0	60.4	2	0.21		
33	35	C & Sh	17949			2		90.9			0		90-93'	COAL 3'
91	93		17950			2		57.9			1			
93	95		17951			2		61.3			1 1/2			
97	99		17952			2		57.6			1		97-99'	COAL 2'
99	101		17953			2		66.7			1/2			
101	103		17954			2		19.6			6		101-107	COAL 6'
103	105		17955			2		8.2			7 1/2			
105	107		17956			2		15.6			6			
101	107	SEAM-GU COMPOSITE				6'	0.4	13.9	23.9	61.8	6 1/2	0.59		
173	175		17957			2		26.8			6 1/2		172-178'	COAL 6'
175	177		17958			2		18.9			6 1/2			
177	179		17959			2		42.6			4		✓	CHECKED JAN.5'77
179	181	C & Sh	17960			2		40.1			3			
181	183	" "	17961			2		62.1			2 1/2			
183	185	" "	17962			2		77.1			1/2			

DIAMOND DRILL SAMPLING RECORD

311

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
173	177	COMPOSITE				4	0.4	22.8	23.7	53.1	7	0.53	
211	212		17963			1		63.8			1/2		
218	220		17964			2		30.6			3 1/2		
220	222		17965			2		12.6			7 1/2		220.5, 225 COAL
222	224		17966			2		63.5			1 1/2		4.5'
218	222	SEAM- FM3. COMPOSITE				4'	0.3	21.83	24.5	53.4	6	0.59	
270	272		17967			2		80.0			0.		
272	274		17968			2		30.6			6 1/2		
384	386		17969			2		14.5			2		
386	388		17970			2		7.5			1 1/2		
388	390		17971			2		15.3			3		
390	392		17972			2		42.6			1 1/2		386 402 16' 3' SHALE. COAL
392	394		17973			2		38.8			1 1/2		405 - 410 5'
394	396		17974			2		24.2			2		
396	398		17975			2		7.4			3		24(21)
398	400		18501			2		49.9			1 1/2		
400	402		18502			2		49.3			1		
402	404		18503			2		8.7			3 1/2		
404	406		18504			2		27.8			1 1/2		
406	408		18505			2		52.5	CHECK		1/2		CHECKED JAN. 5 '77.
408	410	CE Sh.	18506			2		12.8	CHECK		0		

#1 COMPOSITE 17969 - 975
#2 18502 - 504
#3 17960 - 506

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
156	158		18507			2		49.9			4 1/2		
158	160		18508			2		87.4			0		
166	168		18509			2		32.4			4 1/2		
168	170		18510			2		18.2			6		165-173.5 COAL
170	172		18511			2		75.1			1		8.5'
172	174		18512			2		56.6			2 1/2		
174	176	C & Sh.	18513			2		NO	SAMPLE				
166	170	PART SEAM - "G1" COMPOSITE				4	0.5	25.3	24.8	49.4	6	0.66	
214	216		18514			2		22.9			5		213-217.5 COAL
216	218		18515			2		33.9			5 1/2		4.5'
214	218	SEAM - FM3 COMPOSITE				4	0.5	28.2	20.8	50.5	6	0.48	
278	280	C & Sh.											
			18516			2		81.7			0		
288	290		17976			2		25.1			6		287-292 COAL
290	292		17977			2		27.0			3		5'
292	294	C & Sh.	17978			2		52.8			1		
288	292	SEAM - FM2 COMPOSITE				4	0.6	26.4	20.3	52.7	4 1/2	0.76	

DIAMOND DRILL SAMPLING RECORD

319

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
407	409		17979			2		42.6			1		
409	411		17980			2		83.7			1/2		
411	413		17981			2		10.1			2 1/2		410-427 COAL
413	415		17982			2		25.2			6		
415	417		17983			2		12.9			4 1/2		17'
417	419		17984			2		36.5			1 1/2		
419	421		17985			2		60.0			1		
421	423		17986			2		NO SAMPLE					
423	425		17987			2		17.2			3 1/2		
425	427		17988			2		24.1			3 1/2		431-438 COAL
427	429		17989			2		55.9			1 1/2		7'
429	431		17990			2		52.5			1		
431	433		17991			2		68.1			0		
433	435		17992			2		39.3			1		
435	437	C&Sh.	17993			2		48.1			1/2		
437	439	" " P.A. o/o S & FSI. →	17994			2		30.0			5		
439	441	" "	17995			2		85.5			0		
411	427	SEAM-F COMPOSITE.				14/16	0.6	26.3	21.5	51.6	3	0.11	
437	439		17994			2	0.6	29.7	21.0	48.7	5 1/2	0.30	

RH 1032 Hole No.

DIAMOND DRILL SAMPLING RECORD

319

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
71	73		17996			2		49.2 ✓			5 ✓		71-76 COAL 5'
73	75		17997			2		30.8			6 1/2		3' SHALE
75	77		17998			2		71.6			1/2		79-83' COAL 4'
77	79		17999			2		78.7			0		2.5' SHALE
79	81		18000			2		66.9 ✓			0 ✓		85.5-92' COAL 6.5
81	83	P.A. 40S & FSI.	18701			2	0.3	21.0, 20.3	22.1	56.6	6 1/2, 6 1/2	0.52	
													& 2' SHALE 2 SHALEY COAL
85	87		18702			2		27.5			7		
87	89		18703			2		27.7			6 1/2		
89	91		18704			2		33.5			4 1/2		
91	93		18705			2		64.0			1		
93	95		18706			2		57.6			1/2		
85	91	SEAM "GL" COMPOSITE 18702-704				6'	0.5	29.2	24.1	46.2	6 1/2	0.52	
							0.3	29.2	24.4	46.1	6 1/2	0.67	
100	102	C & Sh.	18707			2		75.0			0		
102	104	" "	18708			2		76.8			0		
136	138		18709			2		37.2			1		
138	140		18710			2		39.9 ✓			4 ✓		
140	142	C & Sh.	18711			2		77.3			1 1/2		
136	140	COMPOSITE				4	0.4	38.9	19.2	41.5	2 1/2	0.63	
275	277		18712			2		15.9			5 1/2		
277	279		18713			2		32.5			4		
279	281	C & Sh.	18714			2		89.3			0		
275	279	COMPOSITE				4	0.4	23.4	23.0	53.0	5 1/2	0.59	
392	394		18715			2		43.1			1		
394	396		18716			2		80.3			0		

DIAMOND DRILL SAMPLING RECORD

377

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD LOG
396	398		18717			2		45.7			4 1/2		
398	400		18718			2		17.5			1		
400	402		18719			2		20.9			1		
402	404		18720			2		67.4			1 1/2		396.5 – 411
404	406		18721			2		26.6			2		
406	408		18722			2		36.5			1 1/2		
408	410		18723			2		17.7			6.		14.5
398	410	COMPOSITE 18718-723				12	0.3	31.1	20.0	48.6	1 1/2	0.20	
							0.3	31.8	19.7	48.2	1 1/2	0.21	
414	416		18724			2		64.9			1		
416	418		18725			2		80.1			0		
418	420		18726			2		48.1			1		416–422.5
420	422		18727			2		12.7			3		61
422	424		18728			2		42.2			3		
424	426		18729			2		80.8			0		

SAMPLES CHEC
FOR ASH & FS
JAN 5 '77

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DIAMOND DRILL SAMPLING RECORD

319

Nov. 12

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG
40	42		18626			2		23.5			5 1/2		40-45 COAL
42	44		18627			2		5.5			7 1/2		
44	46		18628			2		20.8			3		48-57 COAL
46	48		18629			2		69.2			1/2		
48	50		18630			2		13.2			7		5 & 9'
50	52		18631			2		11.3			6 1/2		
52	54		18632			2		13.0			7		
54	56		18633			2		18.8			7		
56	58		18634			2		44.9			3		
58	60	C & Sh.	18635			2		52.9			1 1/2		
40	56	SEAM - "G1" COMPOSITE 18626 - 633				16'	0.2	22.4	23.9	53.5	6	0.60	
62	64		18636			2		68.0			1		
64	66		18637			2		85.6			0		
66	67		18638			1		83.5			6		
1													
118	120		18639			2		52.4			3		
120	122	P.A. do's & FSI →	18640			2	0.4	27.5, 26.8	23.1	49.0	5 1/2, 6	0.58	
122	124		18641			2		65.5			1		
124	126	C & Sh.	18642			2		46.7			4		
250	252	P.A. do's & FSI →	18643			2	0.4	9.1, 8.8	23.4	67.1	6, 6 1/2	0.89	
252	254		18644			2		67.0			1		

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DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	RAD. LOG REMARKS
315	317		18645			2		67.4			1		315.5 - 320.5 (FAL. 5(3)'
317	319		18646			2		41.4			1		
319	321		18647			2		75.9			1/2		
321	323		18648			2		69.7			1		
323	325		18649			2		53.4			1		
325	327	SEAM - F	18650			2		14.5			2 1/2		
327	329		18517			2		10.3			4		325.5 - 339.5 (FAL 14(12)'
329	331		18518			2		9.4			3		
331	333		18519			2		24.5			5		
333	335		#18520			2		72.0			1/2		
335	337		18521			2		36.3			3		
337	339		18522			2		36.2			5 1/2		
339	341	C & Sh. #2	18523			2		87.0			0		
325	333	#1 COMPOSITE 18650-519				8	0.2	15.6	19.2	65.0	3	0.39	
325	339	#2 COMPOSITE 18650-18522				14	0.5	29.9	19.6	50.0	3 1/2	0.32	

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DIAMOND DRILL SAMPLING RECORD

37

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
28	30		18730			2		12.3			8½		
30	32		18731			2		12.3			8½		
32	34		18732			2		23.8			8		28-46' COAL
34	36		18733			2		4.0			9		18'
36	38		18734			2		12.4			8½		
38	40		18735			2		7.3			8½		
40	42		18736			2		5.8			8½		
42	44		18737			2		5.4			9		
44	46		18738			2		11.2			8		
46	48	C&Sh.	18739			2		76.8			0		
49	51		18740			2							
28	46	SEAM – H COMPOSITE				18'	0.5	10.7	29.1	59.7	8	0.42	
59	61		18741			2		6.8			9		58.5-61' COAL
61	63		18742			2		68.4			1		2.5'
63	65		18743			2		68.8			1		
103	105		18744			2		76.1			1		
105	107		18745			2		66.0			½		
107	109		18746			2		49.8			2½		
109	111		18747			2		35.4			5½		107-112' COAL
111	113		18748			2		35.4			7		5'
109	113	SEAM – G COMPOSITE				4'	0.5	35.1	21.9	42.5	6	0.60	
169	171		18749			2		27.4			4		169-175' COAL
171	173		18750			2		8.4			8½		6'

377

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
173	175		18524			2		36.1			7		
175	177		18525			2		89.2			6		
177	179		18601			2		51.2			1 1/2		178-188.5 COAL
179	181		18602			2		20.1			8		10.5'
181	183		18603			2		13.5			8		
183	185		18604			2		13.2			8		
185	187		18605			2		12.1			8		
187	189		18606			2		72.1			1		
189	191		18607			2		46.3			4 1/2		
191	193		18608			2		67.6			1		
169	175	COMPOSITE				6'	0.6	24.6	22.0	52.8	6 1/2	0.42	
		SEAM - GL											
179	187	COMPOSITE				8'	0.6	14.5	26.6	58.3	8	0.52	
245	247		18609			2		71.2			1		246.5-250.5 COAL
247	249		18610			2		43.6			3 1/2		4'
249	251		18611			2		80.7			1/2		
440	442		18612			2		45.4			3		440-444.5 COAL
442	444		18613			2		26.6			1		4.5'
444	446		18614			2		82.7			0		
448	450		18615			2		12.8			1 1/2		447.5-456 COAL
450	452		18616			2		12.7			3		9.5'
452	454		18617			2		25.5			2		
454	456		18618			2		61.2			1		
456	458		18619			2		51.4			1		
458	460		18620			2		54.6			1		

DIAMOND DRILL SAMPLING RECORD

37

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
460	462	C & Sh.	18621			2		84.0			C		
524	526		18622			2		28.9			1 1/2	—	
526	528		18623			2		30.0			2	—	
528	530		18624			2		39.8			3		
524	528	COMPOSITE 18622-623.				4	0.6	29.0	21.9	48.5	2	0.47	
448	454	SEAM-F COMPOSITE	18615-617			6	0.5	16.5	21.0	62.0	2	0.47	

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DIAMOND DRILL SAMPLING RECORD

319

Nov 28.

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
52	54	C & Sh.	17581			2		39.8			1		
54	56	C & Sh.	17582			2		10.8			1 1/2		
56	58		17583			2		6.9			5		56-71' COAL
58	60		17584			2		17.8			4		15'
60	62		17585			2		23.3			2 1/2		
62	64		17586			2		25.7			2 1/2		
64	66		17587			2		5.4			6 1/2		73-78' COAL
66	68		17588			2		14.9			7 1/2		5'
68	70		17589			2		44.2			1 1/2		
70	72		17590			2		11.8			5 1/2		22 (20)
72	74		17591			2		9.1			6 1/2		
74	76	C & Sh.	17592			2		NO	SAMPLE				
76	78	C & Sh.	17593			2		80.9			0		
54	74	SEAM "F" COMPOSITE				20	0.7	17.1	21.8	60.4	4 1/2	0.19	
142	144	C & Sh.	17594			2		19.2			2 1/2		
144	146	" "	17595			2		25.7			6 1/2		
142	146	COMPOSITE				4	0.3	22.2	21.5	56.0	5	0.71	
335	337		17596			2		49.2			3 1/2		336.5-377.5 COAL
337	339		17597			2		52.9			1 1/2		A1 (39)
339	341	#2	17598			2		38.6			3 1/2		
341	343		17599			2		36.9			4 1/2		TOP 10' SHALEY COAL
343	345		17600			2		35.4			4 1/2		
345	347		17602			2		35.9			6 1/2		
347	349	#1	17603			2		16.3			6		
349	351		17604			2		13.5			5 1/2		
351	353		17605			2		20.1			5 1/2		
353	355	SHALE NOT SAMPLED.											

RH 1036. Hole No.

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
355	357		17606			2		21.2			2 1/2		
357	359		17607			2		32.6			5 1/2		
359	361		17608			2		33.4			5 1/2		
361	363		17609			2		67.7			1/2		
363	365		17610			2		17.5			2 1/2		
365	367		17611			2		8.4			6 1/2		
367	369		17612			2		25.8			3 1/2		
369	371		17613			2		30.7			1		
371	373		17614			2		15.7			5 1/2		
373	375		17615			2		12.0			7 1/2		
375	377	C & Sh.	17616			2		41.2 ✓			6 1/2 ✓		CHECKED FEB 9 '77
377	379	" "	17617			2		73.8			1		
339	377.	SEAM-E #2-COMPOSITE			36	/38	0.1	27.6	19.9	52.4	4 1/2	0.11	
347	375	#1-COMPOSITE			28	/35							
347	377				28	30	0.1	25.9	20.1	53.8	5	0.20	
454	456	C & Sh.	17618			2		30.2			1		
456	458	" "	17619			2		18.7			3 1/2		
458	460	" "	17620			2		18.2			2		
460	462	" "	17621			2		20.1			1 1/2		
462	464	" "	17622			2		11.2			1		456-483.5 COAL
464	466	" "	17623			2		14.1			1 1/2		
466	468	" "	17624			2		16.4			1		
468	470	" "	17625			2		18.4			1		26.5.
470	472	" "	17501			2		10.0			1 1/2		
472	474	" "	17502			2		24.4			1		
474	476	" "	17503			2		13.2			1		
476	478	" "	17504			2		11.1			1 1/2		
478	480	" "	17505			2		79.8			0		
454	478	SEAM-D COMPOSITE				24	0.3	18.1	17.4	64.2	1 1/2	0.10	

DIAMOND DRILL SAMPLING RECORD

319

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
485	487	C & Sh.	17506			2		26.2			1		
487	489	" "	17507			2		64.1			1/2		
489	491	" "	17508			2		77.4			1/2		
485	487	P.A. of S & FSI →	17506			2	0.4	26.3	22.8	50.5	1	0.15	
503	505	C & Sh.	17509			2		25.3			1		505.5 – 511 COAL
505	507	" "	17510			2		48.7			1		
507	509	" "	17511			2		84.8			0		5.5
509	511	" "	17512			2		75.2			1/2		
503	505	P.A. of S & FSI →	17509			2	0.3	24.9	17.9	56.9	1	0.23	

Page No. 3 OF 3 Hole No. RH 1036

DIAMOND DRILL SAMPLING RECORD

Nov. 26 '76

377

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
67	69		18426			2		61.9			1		
69	71		18427			2		13.1			1/2		
71	73		18428			2		6.8			1/2		
73	75		18429			2		41.6			1		
75	77		18430			2		27.6			4 1/2		Cor. – 8.7' COAL
77	79		18431			2		32.0			1/2		19(18)'
79	81		18432			2		13.2			7		
81	83		18433			2		42.3			2		
83	85		18434			2		10.0			5		
85	87	C & Sh.	18435			2		20.0			6		
87	89	" "	18436			2		66.4			1		
67	87	SEAM - F COMPOSITE				18'	0.4	23.0	22.5	54.1	2 1/2	0.27	
102	104	C & Sh.	18437			2		31.1			3 1/2		
104	106	"	18438			2		61.9			1		
143	145	C & Sh.	18439			2		41.3			1		
145	147	" "	18440			2		31.3			4 1/2		
276	278	C & Sh.	18441			2		77.5			1/2		
330	332	C & Sh.	18442			2		80.1			0.		
334	336	" "	18443			2		79.7			1/2		
336	338	" "	18444			2		71.6			1/2		

RH 1037 Hole No.

3197

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
345	347	C&Sh	18445			2		61.7			1		
347	349		18446			2		59.4			1 1/2		
349	351		18447			2		43.1			1 1/2		348-381' CMA
351	353		18448			2		16.4			2		
353	355		18449			2		NO	SAMPLE				33(32)
355	357		18450			2		17.3			4 1/2		
357	359		18451			2		17.7			2		
359	361		18452			2		33.9			5		
361	363		18453			2		59.8			1		
363	365		18454			2		19.1			2 1/2		
365	367		18455			2		11.3			3		
367	369		18456			2		34.2			1 1/2		
369	371		18457			2		12.7			4		
371	373		18458			2		13.9			7		
373	375		18459			2		29.7			6 1/2		
375	377		18460			2		70.8			1		
377	379	C&Sh.	18461			2		79.9			0		
379	381	C&Sh.	18462			2		37.0			4.		
351	375	SEAM - "E" COMPOSITE			22	24	0.4	24.3	19.5	55.8	4	0.10	
460	462	C&Sh.	18463			2		14.0			1		
462	464		18464			2		12.0			2		
464	466		18465			2		9.3			2 1/2		
466	468		18466			2		37.1			1		
468	470		18467			2		27.1			1 1/2		
470	472		18468			2		11.5			2		
472	474		18469			2		11.6			1 1/2		
474	476		18470			2		20.2			1		

Page No. 2 OF 3 Hole No. RH 1037

319

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
476	478		18421			2		16.2			2		
478	480		18422			2		30.0			1 1/2		
480	482	C & Sh.	18423			2		88.6			0		
460	480	SEAM - D COMPOSITE				20'	0.4	18.8	19.0	61.8	2	0.13	
485	487	C & Sh.	18424			2		60.0			1/2		
487	489	" "	18425			2		47.2			1/2		
489	491	" "	17601			2		55.6			1		
507	509	C & Sh.	15576			2		25.8			1 1/2		
509	511	" "	15577			2		17.8			1 1/2		
511	513	" "	15578			2		21.9			1 1/2		
513	515	" "	15579			2		72.3			1		
515	517	" "	15580			2							
507	513	SEAM - "DL" COMPOSITE				6	0.4	21.5	17.8	60.3	1 1/2	0.23	

DIAMOND DRILL SAMPLING RECORD

NOV. 25'76 [redacted]

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS RAD. LOG.
40	42		18479			2		9.3			5 1/2		
42	44		480			2		4.5			8		40-46 COAL
44	46		481			2		4.7			8		6'
46	48	C & Sh.	18482			2		83.3			0		
40	46.	COMPOSITE				6.	0.5	6.4	25.0	68.1	7 1/2	0.64	
73	75	C & Sh	18483			2		59.8			1/2		
75	77	" "	484			2		56.4			1		
77	79	" "	18485			2		84.2			0		
87	89	C & Sh.	18486			2		81.4			0		
105	107	C & Sh	18487			2		10.6			7		105 - 109.5 COAL
107	109	" "	488			2		23.3			7		4.5'
109	110	" "	18489			1		63.8			1 1/2		
105	109	COMPOSITE				4	0.5	17.3	25.5	56.7	7 1/2	0.69	
118	120	C & Sh	18490			2		66.8			1		
120	122	" "	491			2		69.1			1/2		
122	124	" "	492			2		63.5			1 1/2		
124	126	" "	493			2		68.2			1		
126	128	" "	494			2		83.2			0		
128	130	" "	495			2		74.1			0		
130	132	" "	496			2		78.5			1/2		
132	134	" "	497			2		69.6			1		
134	136	" "	18498			2		81.1			0		

RH 1038. Hole No.

DIAMOND DRILL SAMPLING RECORD

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
													183.5 – 189.5 COAL
181	183		18499			2		41.7			3		
183	185		18500			2		24.4			4		
185	187		18451			2		20.4			6½		
181	187	COMPOSITE				6	0.3	28.8	19.5	51.4	4	0.50	
191	193	C & Sh.	18452			2		73.4			1		
193	195	" "	18453			2		84.4			0		
195	197	" "	18454			2		83.5			0		
200	202	C & Sh.	18455			2		44.6			4		
202	204	" "	18456			2		51.7			3½		
204	206	" "	18457			2		81.0			0		
212	214	C & Sh	18458			2		15.0			7½		215 – 220' COAL 5'
214	216	" "	18459			2		9.4			2½		
212	216	COMPOSITE				4	0.4	12.6	19.4	67.6	5½	0.63	
226	228	C & Sh.	18460			2		57.8			1		
300	302	C & Sh.	18461			2		18.0			1		
302	304	" "	18462			2		8.9			2		
304	306	" "	18463			2		13.1			2		
306	308	" "	18464			2		19.4			2½		
308	310	" "	18465			2		35.3			1		
310	312	" "	18466			2		21.4			1		

DIAMOND DRILL SAMPLING RECORD

37

FROM	TO	DESCRIPTION	SAMPLE NUMBER	SHORTS FEET		WIDTH	M	A	VM	FC	FSI	S	REMARKS
312	314	C & Sh.	18467			2		18.4			6		
314	316	" "	18468			2		47.4			1 1/2		
316	318	" "	18469			2		30.0			1 1/2		
318	320	" "	18470			2		25.4			3 1/2		
320	322	" "	18471			2		58.8			1		
322	324	" "	18472			2		NO SAMPLE.					
300	320	SEAM - F COMPOSITE				20	0.3	23.6	21.5	54.6	2 1/2	0.10	
336	338	C & Sh	18474			2		73.6			1/2		
341	343	C & Sh.	18475			2		58.6			1/2		

Page No. 3 OF 3 Hole No. RH 1038

OMPO NUMBER-10311-14 DRILL HOLE NUMBER- 438 SEAM NUMBER- 5

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	8617.	86.9	27.2
-28 MESH	1300.	13.1	13.3
FEED	9917.	100.0	25.4

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	247.	77.7	9.5	6.0	55.3	81.1
TAILS	71.	22.3	26.7	2.5	44.7	18.9
CALC.HEAD	318.	100.0	13.3		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	224.	69.6	9.3	6.5	47.4	73.1
TAILS	98.	30.4	23.6	2.5	52.6	26.9
CALC.HEAD	322.	100.0	13.7		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	274.	85.1	9.5	6.0	63.2	88.3
TAILS	48.	14.9	31.6	1.5	36.8	11.7
CALC.HEAD	322.	100.0	12.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	85.09		11.15	21.35
PLUS 28	9.50	47.29	1.42	41.09	78.65
COMBINED	9.50	52.24		52.24	100.00

CONFIDENTIAL

MPO NUMBER-10308-10 DRILL HOLE NUM - 438 SEAM NUMBER- 7

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	6592.	87.8	28.2
-28 MESH	917.	12.2	15.9
FEED	7509.	100.0	26.7

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	288.	90.0	10.8	8.0	61.0	95.5
TAILS	32.	10.0	62.2	0.5	39.0	4.5
CALC.HEAD	320.	100.0	15.9		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	288.	90.0	10.8	8.0	61.0	95.5
TAILS	32.	10.0	62.2	0.5	39.0	4.5
CALC.HEAD	320.	100.0	15.9		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	288.	90.0	10.8	8.0	61.0	95.5
TAILS	32.	10.0	62.2	0.5	39.0	4.5
CALC.HEAD	320.	100.0	15.9		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	10.80	90.00		10.99	17.40
PLUS 28	9.32	59.45	1.47	52.19	82.60
COMBINED	9.50	63.18		63.18	100.00

PRO NUMBER= 10306 DRILL HOLE NUMBER= 438 SEAM NUMBER= TEN FROTHED

SEAM 8

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	ASH %
+28 MESH	4159.	94.0	35.6
-28 MESH	265.	6.0	18.4
FEED	4424.	100.0	34.6

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	237.	92.2	14.2	7.5	71.3	96.9
TAILS	20.	7.8	67.6	0.5	28.7	3.1
CALC.HEAD	257.	100.0	18.4		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	237.	92.2	14.2	7.5	71.3	96.9
TAILS	20.	7.8	67.6	0.5	28.7	3.1
CALC.HEAD	257.	100.0	18.4		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	237.	92.2	14.2	7.5	71.3	96.9
TAILS	20.	7.8	67.6	0.5	28.7	3.1
CALC.HEAD	257.	100.0	18.4		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	14.20	92.22		5.52	10.39
PLUS 28	9.20	50.66	1.50	47.62	89.61
COMBINED	9.50	53.15		53.15	100.00

O NUMBER-10303-04 DRILL HOLE NUMB 438 SEAM NUMBER- 9

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	8192.	89.1	23.4
-28 MESH	1006.	10.9	10.9
FEED	9198.	100.0	22.0

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	275.	87.0	4.2	6.0	64.6	89.8
TAILS	41.	13.0	30.2	2.0	35.4	10.2
CALC.HEAD	316.	100.0	11.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	277.	88.5	8.0	6.5	65.9	91.2
TAILS	36.	11.5	31.8	1.5	34.1	8.8
CALC.HEAD	313.	100.0	10.7		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	290.	91.8	8.9	6.5	76.0	93.7
TAILS	26.	8.2	31.4	2.0	24.0	6.3
CALC.HEAD	316.	100.0	10.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	8.00	88.50		9.63	11.99
PLUS 28	9.68	79.81	1.55	71.05	88.01
COMBINED	9.50	80.76		80.76	100.00

'O NUMBER-10449+01 DRILL HOLE NUMF 438 SEAM NUMBER- 11

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	2502.	92.9	26.7
-28 MESH	192.	7.1	14.0
FEED	2694.	100.0	25.8

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	270.	81.8	9.5	8.0	55.3	86.1
TAILS	60.	18.2	34.5	0.5	44.7	13.9
CALC.HEAD	330.	100.0	14.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	270.	81.8	9.5	8.0	55.3	86.1
TAILS	60.	18.2	34.5	0.5	44.7	13.9
CALC.HEAD	330.	100.0	14.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	270.	81.8	9.5	8.0	55.3	86.1
TAILS	60.	18.2	34.5	0.5	44.7	13.9
CALC.HEAD	330.	100.0	14.0		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	81.82		5.83	8.78
PLUS 28	9.50	65.24	1.49	60.59	91.22
COMBINED	9.50	66.42		66.42	100.00

IPD NUMBER- 10448 DRILL HOLE NUMB - 438 SEAM NUMBER- TEB FROTHER #110

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	4856.	91.0	11.6
-28 MESH	480.	9.0	6.1
FEED	5336.	100.0	11.1

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

sufficient Sample for one reagent setting only →

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	4.40	93.81		8.44	8.62
PLUS 28	10.00	98.36	+1.60	89.51	91.38
COMBINED	9.50	97.95		97.95	100.00

SPU NUMBER- 1044A DRILL HOLE NUMBER- 438 SEAM NUMBER- 110

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	4868.	91.0	11.6
-28 MESH	480.	9.0	6.1
FEED	5348.	100.0	11.1

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	4.40	93.81		8.42	8.60
PLUS 28	10.00	98.36	+1.60	89.53	91.40
COMBINED	9.50	97.95		97.95	100.00

CP T NUMBER- 10447 DRILL HOLE NUMBE 438 SEAM NUMBER- TEB FROTHER #12

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	2691.	87.1	13.6
-28 MESH	397.	12.9	14.4
FEED	3088.	100.0	13.7

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	290.	89.8	10.0	8.5	62.4	94.4
TAILS	33.	10.2	52.9	2.0	37.6	5.6
CALC.HEAD	323.	100.0	14.4		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	290.	89.8	10.0	8.5	62.4	94.4
TAILS	33.	10.2	52.9	2.0	37.6	5.6
CALC.HEAD	323.	100.0	14.4		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

Sufficient sample
r one float testonly →

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	290.	89.8	10.0	8.5	62.4	94.4
TAILS	33.	10.2	52.9	2.0	37.6	5.6
CALC.HEAD	323.	100.0	14.4		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	10.00	89.78		11.54	11.85
PLUS 28	9.43	98.49	+1.60	85.83	88.15
COMBINED	9.50	97.37		97.37	100.00

OMPO NUMBER-10443-44 DRILL HOLE NU R- 438 SEAM NUMBER-13

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	9129.	94.5	20.0
-28 MESH	530.	5.5	11.5
FEED	9659.	100.0	19.5

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	208.	66.0	6.3	7.0	36.2	69.9
TAILS	107.	34.0	21.6	5.0	63.8	30.1
CALC.HEAD	315.	100.0	11.5		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	208.	66.0	6.3	7.0	36.2	69.9
TAILS	107.	34.0	21.6	5.0	63.8	30.1
CALC.HEAD	315.	100.0	11.5		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	208.	66.0	6.3	7.0	36.2	69.9
TAILS	107.	34.0	21.6	5.0	63.8	30.1
CALC.HEAD	315.	100.0	11.5		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	6.30	66.03		3.62	4.18
PLUS 28	9.69	87.83	+1.60	83.01	95.82
COMBINED	9.50	86.63		86.63	100.00

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	8407.	87.7	10.5
-28 MESH	1179.	12.3	8.8
FEED	9586.	100.0	10.3

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	310.	96.0	7.1	7.0	79.2	97.6
TAILS	13.	4.0	44.5	1.0	20.8	2.4
CALC.HEAD	323.	100.0	8.6		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	311.	96.0	7.5	7.0	78.9	97.7
TAILS	13.	4.0	46.0	1.0	21.1	2.3
CALC.HEAD	324.	100.0	9.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	311.	97.2	7.4	7.0	83.1	98.5
TAILS	9.	2.8	51.9	1.0	16.9	1.5
CALC.HEAD	320.	100.0	9.7		100.0	100.0

TABLE 5

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	7.10	95.98		11.[illegible]	11.[illegible]
PLUS 28	9.84	99.81	+1.60	87.53	88.12
COMBINED	9.50	99.34		99.34	100.00

PO NUMBER-10473-75 DRILL HOLE NO. - 441 SEAM NUMBER-5

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	6237.	90.4	29.2
-28 MESH	662.	9.6	14.8
FEED	6899.	100.0	27.8

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	94.1	12.4	7.0	77.4	97.1
TAILS	19.	5.9	57.8	1.0	22.6	2.9
CALC.HEAD	322.	100.0	15.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	94.1	12.4	7.0	77.4	97.1
TAILS	19.	5.9	57.8	1.0	22.6	2.9
CALC.HEAD	322.	100.0	15.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	307.	95.3	11.9	7.0	80.0	97.9
TAILS	15.	4.7	61.0	1.0	20.0	2.1
CALC.HEAD	322.	100.0	14.2		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	11.90	95.34		9.15	15.44
PLUS 28	9.25	55.41	1.42	50.09	84.56
COMBINED	9.50	59.24		59.24	100.00

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	[illegible] %
+20 MESH	6140.	26.6	26.0
-20 MESH	967.	13.4	10.5
FEED	7077.	[illegible]	23.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY EST	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	92.1	7.[illegible]	3.0	75.5	94.5
TAILS	25.	7.9	37.5	1.0	24.2	5.5
CALC.HEAD	317.	100.0	1[illegible].1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY EST	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	92.1	7.8	3.0	76.0	94.5
TAILS	25.	7.9	37.5	1.0	24.2	5.5
CALC.HEAD	317.	100.0	1[illegible].1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY EST	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	301.	94.4	5.8	3.5	70.9	96.5
TAILS	18.	5.6	44.3	1.0	29.1	3.5
CALC.HEAD	319.	100.0	1[illegible]		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. ASH PRODUCT	PERC. [illegible] PRODUCT
FLOTATION	7.90	92.11		12.33	17.67
PLUS 28	9.76	64.95	1.49	56.26	52.03
COMBINED	9.56	68.59		60.59	100.00

PO NUMBER-10457-53 DRILL HOLE NUM - 441 SEAM NUMBER-9

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	7442.	89.5	24.6
-28 MESH	872.	10.5	11.5
FEED	8314.	100.0	23.2

FLOTATION RESULTS

	KEROSENE(.75) WEIGHT	WEIGHT	PINE OIL(.15) ASSAY		DISTRIBUTION	
PRODUCT	(GMS)	PERC.	ASH	FSI	ASH	CLEAN COAL
CONCENTRATE	292.	93.6	8.0	7.0	65.3	97.2
TAILS	20.	6.4	62.0	0.5	34.7	2.8
CALC.HEAD	312.	100.0	11.5		100.0	100.0

	KEROSENE(.90) WEIGHT	WEIGHT	PINE OIL(.20) ASSAY		DISTRIBUTION	
PRODUCT	(GMS)	PERC.	ASH	FSI	ASH	CLEAN COAL
CONCENTRATE	292.	93.6	8.0	7.0	65.3	97.2
TAILS	20.	6.4	62.0	0.5	34.7	2.8
CALC.HEAD	312.	100.0	11.5		100.0	100.0

	KEROSENE(1.05) WEIGHT	WEIGHT	PINE OIL(.25) ASSAY		DISTRIBUTION	
PRODUCT	(GMS)	PERC.	ASH	FSI	ASH	CLEAN COAL
CONCENTRATE	292.	93.6	8.0	7.0	65.3	97.2
TAILS	20.	6.4	62.0	0.5	34.7	2.8
CALC.HEAD	312.	100.0	11.5		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	8.00	93.59		9.82	14.68
PLUS 28	9.68	63.74	1.48	57.05	85.32
COMBINED	9.50	66.87		66.87	100.00

PO NUMBER-10454-55 DRILL HOLE NUMB - 441 SEAM NUMBER- 11

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	1300.	86.3	33.3
-28 MESH	207.	13.7	16.1
FEED	1507.	100.0	50.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	264.	80.0	9.5	7.5	47.2	86.3
TAILS	66.	20.0	42.5	0.0	52.8	13.7
CALC.HEAD	330.	100.0	16.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	264.	80.0	9.5	7.5	47.2	86.3
TAILS	66.	20.0	42.5	0.5	52.8	13.7
CALC.HEAD	330.	100.0	16.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	264.	80.0	9.5	7.5	47.2	86.3
TAILS	66.	20.0	42.5	0.5	52.8	13.7
CALC.HEAD	330.	100.0	16.1		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	80.00		10.99	16.71
PLUS 28	9.50	63.51	1.54	54.79	83.29
COMBINED	9.50	65.78		65.78	100.00

O NUMBER-10278-80 DRILL HOLE NUMB 440 SEAM NUMBER- 5

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	7224.	90.3	19.6
-28 MESH	778.	9.7	12.4
FEED	8002.	100.0	18.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	294.	93.0	9.6	7.0	76.5	95.2
TAILS	22.	7.0	39.4	1.0	23.5	4.8
CALC.HEAD	316.	100.0	11.7		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	294.	93.0	9.6	7.0	76.5	95.2
TAILS	22.	7.0	39.4	1.0	23.5	4.8
CALC.HEAD	316.	100.0	11.7		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	297.	94.0	12.0	7.0	82.0	95.9
TAILS	19.	6.0	41.2	1.0	18.0	4.1
CALC.HEAD	316.	100.0	13.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.60	93.04		9.05	12.27
PLUS 28	9.49	71.66	1.48	64.69	87.73
COMBINED	9.50	73.74		73.74	100.00

COMPO NUMBER- 10500 DRILL HOLE NUMBER - 440 SEAM NUMBER- 7 PT.

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	5445.	92.7	12.3
-28 MESH	428.	7.3	8.7
FEED	5873.	100.0	12.0

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	274.	86.4	6.6	7.0	65.8	88.4
TAILS	43.	13.6	21.9	2.0	34.2	11.6
CALC.HEAD	317.	100.0	8.7		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	274.	86.4	6.6	7.0	65.8	88.4
TAILS	43.	13.6	21.9	2.0	34.2	11.6
CALC.HEAD	317.	100.0	8.7		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	274.	86.4	6.6	7.0	65.8	88.4
TAILS	43.	13.6	21.9	2.0	34.2	11.6
CALC.HEAD	317.	100.0	8.7		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	6.60	86.44		6.30	7.04
PLUS 28	9.73	89.70	1.57	83.16	92.96
COMBINED	9.50	89.46		89.46	100.00

MPD NUMBER- 10499 DRILL HOLE NUMBER- 440 SEAM NUMBER- 7 Pt.

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	2136.	85.3	23.3
-28 MESH	368.	14.7	9.0
FEED	2504.	100.0	19.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	298.	94.0	5.6	7.5	58.4	97.5
TAILS	19.	6.0	62.5	1.0	41.6	2.5
CALC.HEAD	317.	100.0	9.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	298.	94.0	5.6	7.5	58.4	97.5
TAILS	19.	6.0	62.5	1.0	41.6	2.5
CALC.HEAD	317.	100.0	9.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	298.	94.0	5.6	7.5	58.4	97.5
TAILS	19.	6.0	62.5	1.0	41.6	2.5
CALC.HEAD	317.	100.0	9.0		100.0	100.0

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	5.60	94.01		13.82	17.09
PLUS 28	10.17	78.55	+1.60	67.01	82.91
COMBINED	9.50	80.82		80.82	100.00

'O NUMBER- 10498 DRILL HOLE NUME 440 SEAM NUMBER- 7pt

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	1736.	93.0	16.8
-28 MESH	130.	7.0	9.8
FEED	1866.	100.0	16.3

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	95.1	9.5	7.0	92.3	95.4
TAILS	16.	4.9	15.5	0.5	7.7	4.6
CALC.HEAD	329.	100.0	9.8		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	95.1	9.5	7.0	92.3	95.4
TAILS	16.	4.9	15.5	0.5	7.7	4.6
CALC.HEAD	329.	100.0	9.8		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	95.1	9.5	7.0	92.3	95.4
TAILS	16.	4.9	15.5	0.5	7.7	4.6
CALC.HEAD	329.	100.0	9.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	95.14		6.63	8.24
PLUS 28	9.50	79.37	1.58	73.84	91.76
COMBINED	9.50	80.47		80.47	100.00

'O NUMBER-10493-95 DRILL HOLE NUMBF - 440 SEAM NUMBER- 5

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	4311.	88.4	14.4
-28 MESH	565.	11.6	9.0
FEED	4876.	100.0	13.8

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	278.	89.1	6.5	5.5	64.7	91.5
TAILS	34.	10.9	29.0	1.5	35.3	8.5
CALC.HEAD	312.	100.0	9.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	278.	89.1	6.5	5.5	64.7	91.5
TAILS	34.	10.9	29.0	1.5	35.3	8.5
CALC.HEAD	312.	100.0	9.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	278.	89.1	6.5	5.5	64.7	91.5
TAILS	34.	10.9	29.0	1.5	35.3	8.5
CALC.HEAD	312.	100.0	9.0		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	6.50	89.10		10.32	11.24
PLUS 28	9.89	92.20	+1.60	81.51	88.76
COMBINED	9.50	91.84		91.84	100.00

COMPO NUMBER-10485-91 DRILL HOLE NO. R- 440 SEAM NUMBER- 11

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	2327.	90.8	31.6
-28 MESH	235.	9.2	16.5
FEED	2563.	100.0	30.2

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	260.	78.8	9.5	7.5	45.4	85.4
TAILS	70.	21.2	42.5	0.5	54.6	14.6
CALC.HEAD	330.	100.0	16.5		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	260.	78.8	9.5	7.5	45.4	85.4
TAILS	70.	21.2	42.5	0.5	54.6	14.6
CALC.HEAD	330.	100.0	16.5		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	260.	78.8	9.5	7.5	45.4	85.4
TAILS	70.	21.2	42.5	0.5	54.6	14.6
CALC.HEAD	330.	100.0	16.5		100.0	100.0

TABLE 2

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	78.79		7.25	11.01
PLUS 28	9.50	64.58	1.51	58.63	88.99
COMBINED	9.50	65.89		65.89	100.00

PU NUMBER=10486-87 DRILL HOLE NUMB - 440 SEAM NUMBER= 110

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	6023.	87.9	20.6
-28 MESH	827.	12.1	7.7
FEED	6850.	100.0	19.0

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	307.	96.2	6.9	8.0	86.1	97.1
TAILS	12.	3.8	28.6	6.5	13.9	2.9
CALC.HEAD	319.	100.0	7.7		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	307.	96.2	6.9	8.0	86.1	97.1
TAILS	12.	3.8	28.6	6.5	13.9	2.9
CALC.HEAD	319.	100.0	7.7		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	307.	96.2	6.9	8.0	86.1	97.1
TAILS	12.	3.8	28.6	6.5	13.9	2.9
CALC.HEAD	319.	100.0	7.7		100.0	100.0

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	6.90	96.24		11.62	13.42
PLUS 28	9.86	85.26	+1.60	74.96	86.58
COMBINED	9.50	86.58		86.58	100.00

COMPO NUMBER= 10297 DRILL HOLE NUMBER= 439 SEAM NUMBER= TEB FROT ?

7 LWR. PT.

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	ASH %
+28 MESH	2117.	92.8	26.1
-28 MESH	165.	7.2	14.2
FEED	2282.	100.0	25.2

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	94.8	10.5	8.5	70.3	98.9
TAILS	17.	5.2	81.6	0.5	29.7	1.1
CALC.HEAD	330.	100.0	14.2		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	94.8	10.5	8.5	70.3	98.9
TAILS	17.	5.2	81.6	0.5	29.7	1.1
CALC.HEAD	330.	100.0	14.2		100.0	100.0

here

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	94.8	10.5	8.5	70.3	98.9
TAILS	17.	5.2	81.6	0.5	29.7	1.1
CALC.HEAD	330.	100.0	14.2		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	10.50	94.85		6.86	12.20
PLUS 28	9.42	53.18	1.52	49.33	87.80
COMBINED	9.50	56.19		56.19	100.00

COMPU NUMBER= 10296 DETAIL TABLE NUMBER= 0 SEAM NUMBER= 1-R FOOTE

#7

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	6608.	92.9	31.3
-28 MESH	504.	7.1	14.0
FEED	7112.	100.0	30.7

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	305.	94.7	11.2	8.0	76.0	97.8
TAILS	17.	5.3	63.4	0.5	24.0	2.2
CALC.HEAD	322.	100.0	14.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	305.	94.7	11.2	8.0	76.0	97.8
TAILS	17.	5.3	63.4	0.5	24.0	2.2
CALC.HEAD	322.	100.0	14.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	305.	94.7	11.2	8.0	76.0	97.8
TAILS	17.	5.3	63.4	0.5	24.0	2.2
CALC.HEAD	322.	100.0	14.0		100.0	100.0

Sufficient sample for 1 sample only →

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	11.20	94.72		6.71	12.44
PLUS 28	9.37	50.84	1.48	47.24	87.56
COMBINED	9.50	53.95		53.95	100.00

Dens separation

SAMPO NUMBER- 10295 DRILL HOLE NUMBER- 439 SEAM NUMBER- 7

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	3963.	89.5	24.2
-28 MESH	465.	10.5	12.4
FEED	4428.	100.0	23.0

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	293.	94.5	9.5	7.0	72.4	97.7
TAILS	17.	5.5	62.5	0.5	27.6	2.3
CALC.HEAD	310.	100.0	12.4		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	293.	94.5	9.5	7.0	72.4	97.7
TAILS	17.	5.5	62.5	0.5	27.6	2.3
CALC.HEAD	310.	100.0	12.4		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	293.	94.5	9.5	7.0	72.4	97.7
TAILS	17.	5.5	62.5	0.5	27.6	2.3
CALC.HEAD	310.	100.0	12.4		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	94.52		9.93	14.27
PLUS 28	9.50	66.64	1.47	59.64	85.73
COMBINED	9.50	69.57		69.57	100.00

COMPO NUMBER- 10296 DRILL HOLE NUMBER- 439 SEAM NUMBER- 7

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	3540.	92.2	14.8
-28 MESH	299.	7.8	9.6
FEED	3839.	100.0	14.4

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	277.	96.9	8.3	8.0	84.0	98.2
TAILS	9.	3.1	48.6	1.0	16.0	1.8
CALC.HEAD	286.	100.0	9.6		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	277.	96.9	8.3	8.0	84.0	98.2
TAILS	9.	3.1	48.6	1.0	16.0	1.8
CALC.HEAD	286.	100.0	9.6		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	277.	96.9	8.3	8.0	84.0	98.2
TAILS	9.	3.1	48.6	1.0	16.0	1.8
CALC.HEAD	286.	100.0	9.6		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	8.30	96.85		7.54	10.31
PLUS 28	9.60	71.13	1.42	65.59	89.69
COMBINED	9.50	73.13		73.13	100.00

COMPO NUMBER- 10293 DRILL HOLE 3ER- 439 SEAM NUMBER- My

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	523.	94.2	32.0
-28 MESH	32.	5.8	15.9
FEED	555.	100.0	31.1

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	280.	84.8	9.5	7.5	50.6	91.3
TAILS	50.	15.2	52.0	0.5	49.4	8.7
CALC.HEAD	330.	100.0	15.9		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	280.	84.8	9.5	7.5	50.6	91.3
TAILS	50.	15.2	52.0	0.5	49.4	8.7
CALC.HEAD	330.	100.0	15.9		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	280.	84.8	9.5	7.5	50.6	91.3
TAILS	50.	15.2	52.0	0.5	49.4	8.7
CALC.HEAD	330.	100.0	15.9		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	84.85		4.89	9.22
PLUS 28	9.50	51.11	1.50	48.17	90.78
COMBINED	9.50	53.06		53.06	100.00

COMPO NUMBER-10289-91 DRILL HOLE BER- 439 SEAM NUMBER- 9

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	9309.	88.4	22.9
-28 MESH	1219.	11.6	12.0
FEED	10528.	100.0	21.6

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	294.	92.7	9.0	6.0	69.7	95.9
TAILS	23.	7.3	50.0	0.5	30.3	4.1
CALC.HEAD	317.	100.0	12.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	294.	92.7	9.0	6.0	69.7	95.9
TAILS	23.	7.3	50.0	0.5	30.3	4.1
CALC.HEAD	317.	100.0	12.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	294.	92.7	9.0	6.0	69.7	95.9
TAILS	23.	7.3	50.0	0.5	30.3	4.1
CALC.HEAD	317.	100.0	12.0		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.00	92.74		10.74	13.89
PLUS 28	9.57	75.32	1.57	66.60	86.11
COMBINED	9.50	77.34		77.34	100.00

OMPD NUMBER-10285-87 DRILL HOLE NUMBER- 439 SEAM NUMBER- 11

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	8046.	90.1	28.1
-28 MESH	884.	9.9	12.1
FEED	8930.	100.0	26.5

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	231.	72.4	7.5	8.5	43.7	76.5
TAILS	88.	27.6	25.4	7.0	56.3	23.5
CALC.HEAD	319.	100.0	12.4		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	231.	72.4	7.5	8.5	43.7	76.5
TAILS	88.	27.6	25.4	7.0	56.3	23.5
CALC.HEAD	319.	100.0	12.4		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	255.	79.9	7.8	8.5	49.4	84.3
TAILS	64.	20.1	31.8	4.5	50.6	15.7
CALC.HEAD	319.	100.0	12.6		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	7.80	79.94		7.91	11.99
PLUS 28	9.69	64.44	1.50	58.06	88.01
COMBINED	9.50	65.97		65.97	100.00

SMPO NUMBER- 10283 DRILL HOLE NO- R- 439 SEAM NUMBER- TEN FROTHE #110

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	5108.	88.5	10.4
-28 MESH	666.	11.5	5.0
FEED	5774.	100.0	X ~~15.0~~ 9.8

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	96.3	4.1	8.5	77.6	97.3
TAILS	12.	3.7	30.8	3.0	22.4	2.7
CALC.HEAD	325.	100.0	5.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	96.3	4.1	8.5	77.6	97.3
TAILS	12.	3.7	30.8	3.0	22.4	2.7
CALC.HEAD	325.	100.0	5.1		100.0	100.0

sufficient sample for 2 tests

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	317.	97.8	4.1	8.5	82.9	98.6
TAILS	7.	2.2	38.4	2.5	17.1	1.4
CALC.HEAD	324.	100.0	4.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	4.1	97.84		11.29	11.31
PLUS 28	10.2	100.0	+1.60	88.46	88.69
COMBINED	9.5	99.75		99.75	100.0

OMPD NUMBER-10378-79 DRILL HOLE N ER- 444 SEAM NUMBER- 5

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	2708.	92.3	15.4
-28 MESH	227.	7.7	12.0
FEED	2935.	100.0	15.1

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	96.9	10.0	7.5	80.6	99.1
TAILS	10.	3.1	75.5	0.0	19.4	0.9
CALC.HEAD	323.	100.0	12.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	96.9	10.0	7.5	80.6	99.1
TAILS	10.	3.1	75.4	0.0	19.4	0.9
CALC.HEAD	323.	100.0	12.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	96.9	10.0	7.5	80.6	99.1
TAILS	10.	3.1	75.4	0.5	19.4	0.9
CALC.HEAD	323.	100.0	12.0		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	10.00	96.90		7.49	9.21
PLUS 28	9.46	80.07	1.46	73.87	90.79
COMBINED	9.50	81.37		81.37	100.00

COMPO NUMBER-10376-77 DRILL HOLE NUMBER- 444 SEAM NUMBER- 7

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	3429.	83.5	15.2
-28 MESH	677.	16.5	10.4
FEED	4106.	100.0	14.4

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	293.	94.8	8.9	7.5	82.2	96.3
TAILS	16.	5.2	35.4	2.5	17.8	3.7
CALC.HEAD	309.	100.0	10.3		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	293.	94.8	8.9	7.5	82.2	96.3
TAILS	16.	5.2	35.4	2.5	17.8	3.7
CALC.HEAD	309.	100.0	10.3		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	302.	93.2	9.2	7.5	81.0	94.7
TAILS	22.	6.8	29.7	3.5	19.0	5.3
CALC.HEAD	324.	100.0	10.6		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	8.90	94.82		15.63	18.19
PLUS 28	9.62	84.17	1.54	70.29	81.81
COMBINED	9.50	85.93		85.93	100.00

CUMPO NUMBER-9-102300 DRILL HOLE NUMBER- 444 SEAM NUMBER- #5

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	9872.	89.8	16.4
-28 MESH	1120.	10.2	9.7
FEED	10992.	100.0	15.7

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	304.	96.5	8.0	7.0	79.8	98.3
TAILS	11.	3.5	56.0	0.0	20.2	1.7
CALC.HEAD	315.	100.0	9.7		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	304.	96.5	8.0	7.0	79.8	98.3
TAILS	11.	3.5	56.0	0.0	20.2	1.7
CALC.HEAD	315.	100.0	9.7		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	304.	96.5	8.0	7.0	79.8	98.3
TAILS	11.	3.5	56.0	0.0	20.2	1.7
CALC.HEAD	315.	100.0	9.7		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	8.00	96.51		9.83	11.11
PLUS 28	9.67	87.60	+1.60	78.68	88.89
COMBINED	9.50	88.51		88.51	100.00

OMPO NUMBER- 10298 DRILL HOLE N ER- 444 SEAM NUMBER- Fait 11 m

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	1207.	85.6	24.3
-28 MESH	203.	14.4	19.6
FEED	1410.	100.0	23.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	245.	78.0	12.1	7.5	48.2	85.3
TAILS	69.	22.0	46.1	0.5	51.8	14.7
CALC.HEAD	314.	100.0	19.6		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	245.	78.0	12.1	7.5	48.2	85.3
TAILS	69.	22.0	46.1	0.5	51.8	14.7
CALC.HEAD	314.	100.0	19.6		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	245.	78.0	12.1	7.5	48.2	85.3
TAILS	69.	22.0	46.1	0.5	51.8	14.7
CALC.HEAD	314.	100.0	19.6		100.0	100.0

TABLE 1

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	12.10	78.03		11.23	16.61
PLUS 28	9.06	65.90	1.49	56.41	83.39
COMBINED	9.50	67.65		67.65	100.00

OMPC NUMBER-10340-43 DRILL HOLE # TR- 447 SEAM NUMBER-4

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	6062.	88.0	16.4
-28 MESH	830.	12.0	36.2
FEED	6892.	100.0	18.8

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FST	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	296.	80.9	36.2	7.5	80.9	80.9
TAILS	70.	19.1	36.2	1.5	19.1	19.1
CALC.HEAD	366.	100.0	36.2		100.0	100.0

KEROSENE(.20) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FST	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	296.	80.9	36.2	7.5	80.9	80.9
TAILS	70.	19.1	36.2	1.5	19.1	19.1
CALC.HEAD	366.	100.0	36.2		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FST	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	302.	94.7	7.3	7.0	75.0	96.7
TAILS	17.	5.3	43.3	1.0	25.0	3.3
CALC.HEAD	319.	100.0	9.2		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	7.30	84.67		11.40	12.49
PLUS 28	9.80	90.82	+1.60	79.88	87.51
COMBINED	9.50	91.28		91.28	100.00

COMPO NUMBER-10331-33 DRILL HOLE 'BER- 447 SEAM NUMBER- 7

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	8579.	88.2	25.7
-28 MESH	1148.	11.8	12.5
FEED	9727.	100.0	24.1

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	291.	92.4	9.5	7.5	70.4	95.5
TAILS	24.	7.6	48.4	1.0	29.6	4.5
CALC.HEAD	315.	100.0	12.5		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	297.	93.7	10.0	7.0	75.0	96.4
TAILS	20.	6.3	49.6	1.0	25.0	3.6
CALC.HEAD	317.	100.0	12.5		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	299.	94.0	10.1	7.0	76.2	96.6
TAILS	19.	6.0	49.6	1.0	23.8	3.4
CALC.HEAD	318.	100.0	12.5		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT.
FLOTATION	9.50	92.38		10.90	17.83
PLUS 28	9.50	56.96	1.45	50.24	82.17
COMBINED	9.50	61.14		61.14	100.00

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	6440.	92.5	14.0
-28 MESH	488.	7.5	9.7
FEED	6928.	100.0	13.7

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	266.	82.9	7.1	2.5	60.4	85.3
TAILS	55.	17.1	22.5	0.5	39.6	14.7
CALC.HEAD	321.	100.0	9.7		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	266.	82.9	7.1	2.5	60.4	85.3
TAILS	55.	17.1	22.5	0.5	39.6	14.7
CALC.HEAD	321.	100.0	9.7		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	266.	82.9	7.1	2.5	60.4	85.3
TAILS	55.	17.1	22.5	0.5	39.6	14.7
CALC.HEAD	321.	100.0	9.7		100.0	100.0

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	% PRODUCT	RECOVERY	S.G.	[illegible] PRODUCT	[illegible] PRODUCT
FLOTATION	7.10	82.87	[illegible]	[illegible]	[illegible]
PLUS 28	9.68	91.98	+1.60	85.49	93.61
COMBINED	9.50	91.33		91.33	100.00

COMPO NUMBER-10322-25 DRILL HOLE NUMBER- 447 SEAM NUMBER- 11

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	3596.	89.7	22.6
-28 MESH	412.	10.3	9.8
FEED	4008.	100.0	20.3

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	95.1	9.5	8.0	92.3	95.4
TAILS	16.	4.9	15.5	4.5	7.7	4.6
CALC.HEAD	329.	100.0	9.8		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	95.1	9.5	8.0	92.3	95.4
TAILS	16.	4.9	15.5	4.5	7.7	4.6
CALC.HEAD	329.	100.0	9.8		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	313.	95.1	9.5	8.0	92.3	95.4
TAILS	16.	4.9	15.5	4.5	7.7	4.6
CALC.HEAD	329.	100.0	9.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	95.14		9.78	12.18
PLUS 28	9.50	78.58	+1.60	70.51	87.82
COMBINED	9.50	80.29		80.29	100.00

OMPO NUMBER- 10320 DRILL HOLE NU R- 447 SEAM NUMBER- 110

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	3438.	86.0	15.2
-28 MESH	559.	14.0	5.8
FEED	3997.	100.0	13.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	299.	94.3	4.9	8.0	79.9	95.2
TAILS	18.	5.7	20.5	6.5	20.1	4.8
CALC.HEAD	317.	100.0	5.8		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	299.	94.3	4.9	8.0	79.9	95.2
TAILS	18.	5.7	20.5	6.5	20.1	4.8
CALC.HEAD	317.	100.0	5.8		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	299.	94.3	4.9	8.0	79.9	95.2
TAILS	18.	5.7	20.5	6.5	20.1	4.8
CALC.HEAD	317.	100.0	5.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	4.90	94.32		13.19	13.78
PLUS 28	10.25	95.98	+1.60	82.55	86.22
COMBINED	9.50	95.74		95.74	100.00

COMPO NUMBER-10318-19 DRILL HOLE N ER- 447 SEAM NUMBER- 12

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	4607.	86.5	13.8
-28 MESH	721.	13.5	7.7
FEED	5328.	100.0	13.0

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	288.	91.4	5.6	8.5	67.5	93.4
TAILS	27.	8.6	28.7	6.5	32.5	6.6
CALC.HEAD	315.	100.0	7.6		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	288.	91.4	5.6	8.5	67.5	93.4
TAILS	27.	8.6	28.7	6.5	32.5	6.6
CALC.HEAD	315.	100.0	7.6		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	295.	93.1	5.8	7.5	66.9	95.4
TAILS	22.	6.9	38.4	5.0	33.1	4.6
CALC.HEAD	317.	100.0	8.1		100.0	100.0

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	5.60	91.43		12.37	12.65
PLUS 28	10.11	98.79	+1.60	85.42	87.35
COMBINED	9.50	97.79		97.79	100.00

OMPO NUMBER-10315-17 DRILL HOLE N ER- 447 SEAM NUMBER- 13

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	6773.	92.5	8.3
-28 MESH	547.	7.5	8.1
FEED	7320.	100.0	8.3

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	265.	83.6	6.0	7.5	61.9	85.5
TAILS	52.	16.4	18.8	6.5	38.1	14.5
CALC.HEAD	317.	100.0	8.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	265.	83.6	6.0	7.5	61.9	85.5
TAILS	52.	16.4	18.8	6.5	38.1	14.5
CALC.HEAD	317.	100.0	8.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	265.	83.6	6.0	7.5	61.9	85.5
TAILS	52.	16.4	18.8	6.5	38.1	14.5
CALC.HEAD	317.	100.0	8.1		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	6.00	83.60		6.25	6.32
PLUS 28	8.29	100.00	+1.60	92.53	93.68
COMBINED	8.12	98.77		98.77	100.00

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	ASH
+28 MESH	2318.	90.1	13.3
-28 MESH	918.	9.9	6.4
FEED	9236.	100.0	12.6

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	269.	84.6	5.2	0.5	69.4	85.6
TAILS	49.	15.4	12.6	0.5	30.6	14.4
CALC.HEAD	318.	100.0	6.3		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	269.	84.6	5.2	0.5	69.4	85.6
TAILS	49.	15.4	12.6	0.5	30.6	14.4
CALC.HEAD	318.	100.0	6.3		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	279.	87.5	5.4	0.5	72.8	88.5
TAILS	40.	12.5	14.1	0.5	27.2	11.5
CALC.HEAD	319.	100.0	6.5		100.0	100.0

AREA	PERC. ASH IN PRODUCT	DISTRIBUTION RECOVERY	PLUS 28 S.G.	PERC. IN PRODUCT	PERC. BE PRODUCT
FLOTATION	5.20	84.56		1.01	4.79
PLUS 28	9.67	97.95	+1.60	98.22	91.30
COMBINED	5.50	96.62		95.62	100.00

COMPO NUMBER-10435-36 DRILL HOLE N ER- 442 SEAM NUMBER- 5

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	7329.	90.3	18.3
-28 MESH	783.	9.7	13.9
FEED	8112.	100.0	17.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	263.	84.3	9.8	7.5	59.5	88.3
TAILS	49.	15.7	35.8	2.0	40.5	11.7
CALC.HEAD	312.	100.0	13.9		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	263.	84.3	9.8	7.5	59.5	88.3
TAILS	49.	15.7	35.8	2.0	40.5	11.7
CALC.HEAD	312.	100.0	13.9		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	288.	92.3	11.1	7.5	73.1	95.4
TAILS	24.	7.7	49.1	1.0	26.9	4.6
CALC.HEAD	312.	100.0	14.0		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.80	84.29		8.14	10.97
PLUS 28	9.47	73.09	1.46	66.04	89.03
COMBINED	9.50	74.17		74.17	100.00

COMPO NUMBER-10483-84 DRILL HOLE N ER- 442 SEAM NUMBER- 7

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	7774.	87.7	25.5
-28 MESH	1090.	12.3	11.0
FEED	8864.	100.0	23.7

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	306.	94.7	9.0	7.5	77.3	96.9
TAILS	17.	5.3	47.6	1.0	22.7	3.1
CALC.HEAD	323.	100.0	11.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	306.	94.7	9.0	7.5	77.3	96.9
TAILS	17.	5.3	47.6	1.0	22.7	3.1
CALC.HEAD	323.	100.0	11.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	308.	96.0	9.1	7.5	80.0	97.9
TAILS	13.	4.0	54.0	1.0	20.0	2.1
CALC.HEAD	321.	100.0	10.9		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.10	95.95		11.80	17.07
PLUS 28	9.56	65.35	1.48	57.31	82.93
COMBINED	9.50	69.11		69.11	100.00

OMPD NUMBER- 10431 DRILL HOLE NUMBER- 442 SEAM NUMBER- My. 2

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	2982.	91.0	33.8
-28 MESH	296.	9.0	32.1
FEED	3278.	100.0	33.6

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	195.	69.1	16.7	8.0	36.0	84.8
TAILS	87.	30.9	66.6	0.5	64.0	15.2
CALC.HEAD	282.	100.0	32.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	195.	69.1	16.7	8.0	36.0	84.8
TAILS	87.	30.9	66.6	0.5	64.0	15.2
CALC.HEAD	282.	100.0	32.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	195.	69.1	16.7	8.0	36.0	84.8
TAILS	87.	30.9	66.6	0.5	64.0	15.2
CALC.HEAD	282.	100.0	32.1		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	16.70	69.15		6.24	12.89
PLUS 28	8.79	46.37	1.45	42.18	87.11
COMBINED	9.50	48.42		48.42	100.00

COMPO NUMBER-10427-28 DRILL HOLE N ER- 442 SEAM NUMBER- 9

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	7616.	82.7	24.5
-28 MESH	1597.	17.3	19.6
FEED	9213.	100.0	23.6

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	223.	71.2	11.6	6.0	37.6	80.7
TAILS	90.	28.8	47.7	0.5	62.4	19.3
CALC.HEAD	313.	100.0	22.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	253.	80.3	12.4	6.0	53.7	86.4
TAILS	62.	19.7	43.6	1.0	46.3	13.6
CALC.HEAD	315.	100.0	18.5		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	261.	82.9	12.4	6.5	56.0	88.9
TAILS	54.	17.1	47.0.	0.5	44.0	11.1
CALC.HEAD	315.	100.0	18.3		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	12.40	82.86		14.36	19.44
PLUS 28	8.89	71.98	1.60	59.50	80.56
COMBINED	9.50	73.87		73.87	100.00

COMPO NUMBER- 10471 DRILL HOLE NUMBER- 442 SEAM NUMBER- TER FROTHER #11

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	5669.	87.3	20.2
-28 MESH	824.	12.7	15.0
FEED	6493.	100.0	19.5

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	283.	87.6	10.2	8.5	59.8	92.5
TAILS	40.	12.4	48.5	1.5	40.2	7.5
CALC.HEAD	323.	100.0	14.9		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	283.	87.6	10.2	8.5	59.8	92.5
TAILS	40.	12.4	48.5	1.5	40.2	7.5
CALC.HEAD	323.	100.0	14.9		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	290.	90.6	10.7	9.0	64.3	95.3
TAILS	30.	9.4	57.4	1.5	35.7	4.7
CALC.HEAD	320.	100.0	15.1		100.0	100.0

sufficient sample for 2 float test

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	10.20	87.62		11.12	13.85
PLUS 28	9.40	79.22	1.53	69.17	86.15
COMBINED	9.50	80.29		80.29	100.00

COMPO NUMBER- 10471 DRILL HOLE NUMBER- 442 SEAM NUMBER- TEB FROTHER #11

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	5669.	87.3	20.2
-28 MESH	824.	12.7	15.0
FEED	6493.	100.0	19.5

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	283.	87.6	10.2	8.5	59.8	92.5
TAILS	40.	12.4	48.5	1.5	40.2	7.5
CALC.HEAD	323.	100.0	14.9		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	283.	87.6	10.2	8.5	59.8	92.5
TAILS	40.	12.4	48.5	1.5	40.2	7.5
CALC.HEAD	323.	100.0	14.9		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	290.	90.6	10.7	9.0	64.3	95.3
TAILS	30.	9.4	57.4	1.5	35.7	4.7
CALC.HEAD	320.	100.0	15.1		100.0	100.0

Sufficient sample for 2 float test

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	10.20	87.62		11.12	13.85
PLUS 28	9.40	79.22	1.53	69.17	86.15
COMBINED	9.50	80.29		80.29	100.00

SMPD NUMBER- 10470 DRILL HOLE NUMBER- 442 SEAM NUMBER- TER FROTHER #110

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	5696.	81.1	30.2
-28 MESH	1325.	18.9	13.8
FEED	7021.	100.0	27.1

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	259.	80.4	7.5	8.0	43.2	86.5
TAILS	63.	19.6	40.5	1.0	56.8	13.5
CALC.HEAD	322.	100.0	14.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	287.	88.6	8.3	7.5	53.2	94.2
TAILS	37.	11.4	56.6	0.5	46.8	5.8
CALC.HEAD	324.	100.0	13.8		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	298.	92.3	9.5	7.5	64.2	96.7
TAILS	25.	7.7	63.2	0.0	35.8	3.3
CALC.HEAD	323.	100.0	13.7		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	7.50	80.43		15.18	20.47
PLUS 28	9.97	72.70	+1.60	58.98	79.53
COMBINED	9.50	74.16		74.16	100.00

COMPO NUMBER-10393-95 DRILL HOLE NUMBER- 471 SEAM NUMBER- 5

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	2115.	86.9	25.4
-28 MESH	319.	13.1	10.6
FEED	2434.	100.0	23.5

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	242.	78.3	7.7	7.5	56.6	80.9
TAILS	67.	21.7	21.3	5.0	43.4	19.1
CALC.HEAD	309.	100.0	10.6		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	242.	78.3	7.7	7.5	56.6	80.9
TAILS	67.	21.7	21.3	5.0	43.4	19.1
CALC.HEAD	309.	100.0	10.6		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	242.	78.3	7.7	7.5	56.6	80.9
TAILS	67.	21.7	21.3	5.0	43.4	19.1
CALC.HEAD	309.	100.0	10.6		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	7.70	78.32		10.26	13.91
PLUS 28	9.77	73.11	1.60	63.53	86.09
COMBINED	9.50	73.79		73.79	100.00

MPO NUMBER- 10391 DRILL HOLE NU 3- 471 SEAM NUMBER- 7 L

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	3165.	92.0	26.1
-28 MESH	276.	8.0	11.9
FEED	3441.	100.0	25.0

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	92.1	10.3	4.0	79.5	93.8
TAILS	25.	7.9	31.1	1.5	20.5	6.2
CALC.HEAD	317.	100.0	11.9		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	92.1	10.3	4.0	79.5	93.8
TAILS	25.	7.9	31.1	1.5	20.5	6.2
CALC.HEAD	317.	100.0	11.9		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	92.1	10.3	4.0	79.5	93.8
TAILS	25.	7.9	31.1	1.5	20.5	6.2
CALC.HEAD	317.	100.0	11.9		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	10.30	92.11		7.39	16.42
PLUS 28	9.43	40.87	1.43	37.60	83.58
COMBINED	9.50	44.98		44.98	100.00

PO NUMBER- 10389 DRILL HOLE NUMB - 471 SEAM NUMBER- 7U

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	918.	90.8	22.0
-28 MESH	93.	9.2	13.2
FEED	1011.	100.0	21.2

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	297.	90.0	9.8	8.0	67.0	93.5
TAILS	33.	10.0	43.5	0.5	33.0	6.5
CALC.HEAD	330.	100.0	13.2		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	297.	90.0	9.8	8.0	67.0	93.5
TAILS	33.	10.0	43.5	0.5	33.0	6.5
CALC.HEAD	330.	100.0	13.2		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	297.	90.0	9.8	8.0	67.0	93.5
TAILS	33.	10.0	43.5	0.5	33.0	6.5
CALC.HEAD	330.	100.0	13.2		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.80	90.00		8.28	12.51
PLUS 28	9.47	63.78	1.42	57.92	87.49
COMBINED	9.50	66.19		66.19	100.00

PO NUMBER-10386-87 DRILL HOLE NUM - 471 SEAM NUMBER- 9

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash Perc
+28 MESH	8201.	89.2	13.7
-28 MESH	990.	10.8	7.2
FEED	9191.	100.0	13.0

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	273.	87.8	5.0	6.5	61.3	89.8
TAILS	38.	12.2	22.7	1.5	38.7	10.2
CALC.HEAD	311.	100.0	7.2		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	281.	88.9	5.6	7.0	65.5	90.9
TAILS	35.	11.1	23.7	2.0	34.5	9.1
CALC.HEAD	316.	100.0	7.6		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	310.	96.9	5.8	6.5	82.7	97.9
TAILS	10.	3.1	37.5	1.5	17.3	2.1
CALC.HEAD	320.	100.0	6.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	5.00	87.78		9.46	9.82
PLUS 28	10.04	97.27	+1.60	86.79	90.18
COMBINED	9.50	96.25		96.25	100.00

IPO NUMBER- 10350 DRILL HOLE NUMF - 471 SEAM NUMBER- 11

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	3075.	93.1	16.8
-28 MESH	227.	6.9	11.0
FEED	3302.	100.0	16.4

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	297.	90.0	9.5	7.5	77.7	91.5
TAILS	33.	10.0	24.5	0.5	22.3	8.5
CALC.HEAD	330.	100.0	11.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	297.	90.0	9.5	7.5	77.7	91.5
TAILS	33.	10.0	24.5	0.5	22.3	8.5
CALC.HEAD	330.	100.0	11.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	297.	90.0	9.5	7.5	77.7	91.5
TAILS	33.	10.0	24.5	0.5	22.3	8.5
CALC.HEAD	330.	100.0	11.0		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	90.00		6.19	7.16
PLUS 28	9.50	86.15	+1.60	80.23	92.84
COMBINED	9.50	86.42		86.42	100.00

MPO NUMBER- 10384 DRILL HOLE NU' ?- 471 SEAM NUMBER- //

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	538.	90.4	41.6
-28 MESH	57.	9.6	28.0
FEED	595.	100.0	40.3

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	231.	69.8	9.5	6.0	23.7	87.7
TAILS	100.	30.2	70.7	1.0	76.3	12.3
CALC.HEAD	331.	100.0	28.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	231.	69.8	9.5	6.0	23.7	87.7
TAILS	100.	30.2	70.7	1.0	76.3	12.3
CALC.HEAD	331.	100.0	28.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	231.	69.8	9.5	6.0	23.7	87.7
TAILS	100.	30.2	70.7	1.0	76.3	12.3
CALC.HEAD	331.	100.0	28.0		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	69.79		6.69	13.03
PLUS 28	9.50	49.34	1.49	44.61	86.97
COMBINED	9.50	51.30		51.30	100.00

D NUMBER-10348-49 DRILL HOLE NUMBER 471 SEAM NUMBER- 110

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	ASH %
+28 MESH	3701.	90.5	19.6
-28 MESH	389.	9.5	7.3
FEED	4090.	100.0	18.4

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	311.	97.2	6.3	8.0	83.6	98.3
TAILS	9.	2.8	42.7	5.0	16.4	1.7
CALC.HEAD	320.	100.0	7.3		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	311.	97.2	6.3	8.0	83.6	98.3
TAILS	9.	2.8	42.7	5.0	16.4	1.7
CALC.HEAD	320.	100.0	7.3		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	311.	97.2	6.3	8.0	83.6	98.3
TAILS	9.	2.8	42.7	5.0	16.4	1.7
CALC.HEAD	320.	100.0	7.3		100.0	100.0

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	6.30	97.19		9.24	10.25
PLUS 28	9.84	89.46	+1.60	80.95	89.75
COMBINED	9.50	90.19		90.19	100.00

PO NUMBER- 10347 DRILL HOLE NUM - 471 SEAM NUMBER- 12

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	846.	84.5	26.3
-28 MESH	155.	15.5	21.1
FEED	1001.	100.0	25.5

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	247.	75.1	9.5	7.0	33.9	86.1
TAILS	82.	24.9	55.9	0.5	66.1	13.9
CALC.HEAD	329.	100.0	21.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	247.	75.1	9.5	7.0	33.9	86.1
TAILS	82.	24.9	55.9	0.5	66.1	13.9
CALC.HEAD	329.	100.0	21.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	247.	75.1	9.5	7.0	33.9	86.1
TAILS	82.	24.9	55.9	0.5	66.1	13.9
CALC.HEAD	329.	100.0	21.1		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.50	75.08		11.63	17.42
PLUS 28	9.50	65.21	1.56	55.11	82.58
COMBINED	9.50	66.74		66.74	100.00

MPD NUMBER- 10210 DRILL HOLE NUM 2- 455 SEAM NUMBER- 2

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	2130.	85.1	23.0
-28 MESH	372.	14.9	9.0
FEED	2502.	100.0	20.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	298.	94.0	5.6	7.5	58.4	97.5
TAILS	19.	6.0	62.5	1.0	41.6	2.5
CALC.HEAD	317.	100.0	9.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	298.	94.0	5.6	7.5	58.4	97.5
TAILS	19.	6.0	62.5	1.0	41.6	2.5
CALC.HEAD	317.	100.0	9.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	298.	94.0	5.6	7.5	58.4	97.5
TAILS	19.	6.0	62.5	1.0	41.6	2.5
CALC.HEAD	317.	100.0	9.0		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	5.60	94.01		13.98	17.27
PLUS 28	10.18	78.66	+1.60	66.96	82.73
COMBINED	9.50	80.94		80.94	100.00

SD NUMBER= 10230 DRILL HOLE NUM(- ASH SEAM NUMBER= 2

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	3587.	88.2	12.4
-28 MESH	479.	11.8	8.8
FEED	4066.	100.0	12.0

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	90.7	7.4	8.0	76.5	92.0
TAILS	30.	9.3	22.1	5.0	23.5	8.0
CALC.HEAD	322.	100.0	8.8		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	90.7	7.4	8.0	76.5	92.0
TAILS	30.	9.3	22.1	5.0	23.5	8.0
CALC.HEAD	322.	100.0	8.8		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	90.7	7.4	8.0	76.5	92.0
TAILS	30.	9.3	22.1	5.0	23.5	8.0
CALC.HEAD	322.	100.0	8.8		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. RECOVERY AS PRODUCT	PERC. OF PRODUCT
FLOTATION	7.40	90.68		10.68	11.11
PLUS 28	9.78	96.86	+1.60	85.45	88.89
COMBINED	9.50	96.14		96.14	100.00

78.57 = Oil Plant Yield @ 16% oil.

B NUMBER-10229-29 DRILL HOLE NUMBER 456 SEAM NUMBER- 4

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	ASH
+28 MESH	3045.	89.0	10.6
-28 MESH	375.	11.0	10.5
FEED	3420.	100.0	10.6

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	299.	94.3	9.0	5.5	81.2	95.9
TAILS	18.	5.7	34.6	1.0	18.8	4.1
CALC.HEAD	317.	100.0	10.5		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	299.	94.3	9.0	5.5	81.2	95.9
TAILS	18.	5.7	34.6	1.0	18.8	4.1
CALC.HEAD	317.	100.0	10.5		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	299.	94.3	9.0	5.5	81.2	95.9
TAILS	18.	5.7	34.6	1.0	18.8	4.1
CALC.HEAD	317.	100.0	10.5		100.0	100.0

	% ASH	OPTIMUM RECOVERY		% FEED AS PRODUCT	PERC. OF PRODUCT
FLOATATION	9.0	94.32		10.34	10.58
PLUS 28	9.56	98.19	+1.60	87.43	89.42
COMBINED	9.5	97.77		97.77	100.00

PD NUMBER-10218-19 DRILL HOLE NUM 457 SEAM NUMBER- 2

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	2968.	79.6	12.5
-28 MESH	760.	20.4	6.1
FEED	3728.	100.0	11.2

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	303.	93.8	4.4	8.5	67.2	95.6
TAILS	20.	6.2	32.6	4.0	32.8	4.4
CALC.HEAD	323.	100.0	6.1		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	4.40	93.81		19.12	19.50
PLUS 28	10.81	99.19	+1.60	78.97	80.50
COMBINED	9.50	98.09		98.09	100.00

ID NUMBER-10212-15 DRILL HOLE NUMBER 457 SEAM NUMBER- 4

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	7098.	79.1	13.7
-28 MESH	1881.	20.9	6.6
FEED	8979.	100.0	12.2

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	286.	89.1	5.0	7.0	68.4	90.5
TAILS	35.	10.9	18.9	5.0	31.6	9.5
CALC.HEAD	321.	100.0	6.5		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	291.	91.8	5.1	7.0	73.6	93.0
TAILS	26.	8.2	20.5	4.5	26.4	7.0
CALC.HEAD	317.	100.0	6.4		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	300.	93.2	5.3	7.5	72.0	94.7
TAILS	22.	6.8	28.1	3.0	28.0	5.3
CALC.HEAD	322.	100.0	6.9		100.0	100.0

TABLE 3

AREA	WEIGHT PERC. IN PRODUCT	ASH	OPTIMUM RECOVERY	PLUS 28 SIZE	WEIGHT PERC. FEED AS PRODUCT	WEIGHT PERC. OF PRODUCT
FLOTATION	5.10		91.00		19.23	19.60
PLUS 28	10.67		99.79	+1.60	79.99	80.40
COMBINED	9.50		98.12		98.12	100.00

MPD NUMBER- 10238 DRILL HOLE NU R- 458 SEAM NUMBER- 2

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash %
+28 MESH	3551.	90.8	14.2
-28 MESH	360.	9.2	10.6
FEED	3911.	100.0	13.9

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	96.4	8.7	8.5	79.0	98.4
TAILS	11.	3.6	61.5	1.0	21.0	1.6
CALC.HEAD	303.	100.0	10.6		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	96.4	8.7	8.5	79.0	98.4
TAILS	11.	3.6	61.5	1.0	21.0	1.6
CALC.HEAD	303.	100.0	10.6		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	292.	96.4	8.7	8.5	79.0	98.4
TAILS	11.	3.6	61.5	1.0	21.0	1.6
CALC.HEAD	303.	100.0	10.6		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	8.70	96.37		8.87	9.50
PLUS 28	9.58	93.09	+1.60	84.52	90.50
COMBINED	9.50	93.39		93.39	100.00

PO NUMBER-10234-35 DRILL HOLE NO. 45 SEAM NUMBER-4

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	6858.	88.9	15.6
-28 MESH	853.	11.1	13.2
FEED	7711.	100.0	15.3

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	241.	74.2	6.0	4.0	45.6	78.4
TAILS	84.	25.8	27.4	1.5	54.4	21.6
CALC.HEAD	325.	100.0	13.0		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	241.	74.2	8.0	4.0	45.6	78.4
TAILS	84.	25.8	27.4	1.5	54.4	21.6
CALC.HEAD	325.	100.0	13.0		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	278.	86.3	9.3	4.0	59.4	90.5
TAILS	44.	13.7	40.1	1.0	40.6	9.5
CALC.HEAD	322.	100.0	13.5		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	9.30	86.34		9.55	10.43
PLUS 28	9.52	92.19	+1.60	81.99	89.57
COMBINED	9.50	91.54		91.54	100.00

PO NUMBER- 10239 DRILL HOLE NUM ASH SEAM NUMBER- 1

DATA

SIZE DISTRIBUTION

SIZE	WEIGHT(GMS)	WEIGHT(PERC)	Ash
+28 MESH	3552.	91.8	10.8
-28 MESH	317.	8.2	8.9
FEED	3869.	100.0	10.6

FLOTATION RESULTS

KEROSENE(.75) PINE OIL(.15)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	300.	98.0	8.0	8.5	87.8	99.0
TAILS	6.	2.0	55.7	2.5	12.2	1.0
CALC.HEAD	306.	100.0	8.9		100.0	100.0

KEROSENE(.90) PINE OIL(.20)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	300.	98.0	8.0	8.5	87.8	99.0
TAILS	6.	2.0	55.7	2.5	12.2	1.0
CALC.HEAD	306.	100.0	8.9		100.0	100.0

KEROSENE(1.05) PINE OIL(.25)

PRODUCT	WEIGHT (GMS)	WEIGHT PERC.	ASSAY ASH	ASSAY FSI	DISTRIBUTION ASH	DISTRIBUTION CLEAN COAL
CONCENTRATE	300.	98.0	8.0	8.5	87.8	99.0
TAILS	6.	2.0	55.7	2.5	12.2	1.0
CALC.HEAD	306.	100.0	8.9		100.0	100.0

TABLE 3

AREA	PERC. ASH IN PRODUCT	OPTIMUM RECOVERY	PLUS 28 S.G.	PERC. FEED AS PRODUCT	PERC. OF PRODUCT
FLOTATION	2.00	93.04		3.07	5.38
PLUS 28	9.63	96.24	1.59	93.32	91.62
COMBINED	9.50	95.39		96.39	100.00

K-FORDING 76(3)A-2

319

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	PERMEABILITY
30					Tricone to 35.5'					
35.5	11/18	B_3	C	85	-4 Rounded & broken core drill induced breaks			0/18	N/A	
37										
	30/72	B_2	C	23°	-3°			22/72	0/60	
40		B_3	C	85°	-4 89 - 55° - 70° within 6"					
43	17/24				Rounded & broken 1-2" pieces breaks drill induced			0/24	N/A	
45		B_3	C	85°	6					
	NIL	S_1	C	23°				23/48	N/48	
		B_2	C	70°	-3					
		B_1	F	80°	-1					
		J_4	W	3°	continues for 2'					
		J_2	W	3°						
49										
50		J_4	W	35°	-2 B_2 J_4 opp. direction					
	9/72	B_2	F	60°	-2			41/72		
		B_2	C	62°	-7					
		B_3	C	80-85	-5					
55		J_1	F	5°	-? can't tell iron stained rubble drill induced					

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DATE: 25/10/76

PROJECT No.

Golder Associates

Hole No. 438

SHEET 1 OF 38

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 (15 10 5)	PERMEABILITY
	16/24	J_1	F	25	1	RUBBLE, core size of gravel			0	N/A	
		J_3	C	60°							
58		J_4	W	30°	-1						
		J_1	F	5-10°	-5				64/120	1/20	
		B_2	C	68	-5	B9 65°					
		B_1	F	20°	-3						
	N/C										
		~~J_1 80° 5~~									
		B_3	C	80°	5	Joints 180° from each other					
		J_1	F	45°	3	J_1 J_2					
68		J_4	F	5°							
		B_2	C	70°	-8	B9-65°			47/84	5/84	
		B_3	C	85°	-5						
	5/84	J_2	C	10°	-3	intensively jointed J_2 fracture					Change Scale
		J_1	F	18°	-5					30 25 20	
75		J_1	C	10°	-7						
		J_4	C	10°	-1				39/96	16/96	
	0	J_1	F	40°	-9; (4 cmot F)						

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PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 2 OF 38

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 20 15 10 5)	PERMEABILITY
0	0	B_2	C	70°	-3 - 160° to J_1 @ 90°					
83	18/48				Consistancy of gravel fractures not recognisable			0	N/A	
87									15 10 5	Change Scale
87	22/72	J_1	C	40°	-3			33/72	9/72	
		J_1	F	10°	-2					
		J_4	C	10°	-2	Coal				
		B_1	B	70°	-3					
		B_1	(K)	25°						
93	NIL	B_3	C	80°	-2			40/60	5/60	
		J_1	F	5°	-2					
		J_2?	C	60°	-2					
		J_2	F	70	-3					
		J_4	W	5°	-					
98	8/60	J_2	W	5°	-3			17/60	4/60	
		J_1	C	25°	-4					
		B_3	C	80°	-1	Very bad jointing Cannot distinguish fractures				
		B_2	C	70°	5					
103	65/108	J_1	C	38				4/108	N/A	
		J_1	C	70	-6					

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Hole No. 438
SHEET 3 OF 38

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
110		J_1	C	5°	-2		S_1 sandy gravel		N/A	
					very broken. ½" pieces					
112	48/60	J_2	B	30°						
		B_3	C	85°	-3.		S_1	0	N/A	
					very badly broken 2"-½" pieces				30 25 20	
117	30/72	B_1	B	65°	-15					
		B_9	B	65°	- too many.					
		J_1	B	3°	-4			4/72	19/72	
120										
123									15 10 5	change scale
		B_1	B	60°	-4	coal				
		B_3	C	80°				79/120	14/120	
		J_2	C	6°	-1					
	NIL	B_1	F	70°	-10					
					B9 -70°					
		J_2	C	15°	-2 - 40° to each other					
		J_2	C	15°						
130										

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PROJECT No.

Golder Associates

Hole No. 438

SHEET 4 OF 38

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
130											
133		J_1	F	15	2						
		B_2	C	75	5						
		B_3	C	-	2				102/120	4/120	
	Nil										
		B_1	F	75	2						
		B_2	C	75	6						
140											
143											
		B_2	C	75	5						
		B_1	F	75	14				66/120	23/120	
		J_1	F	55	1						
		J_1	F	10	3						
150		~~B_1~~	~~F~~	~~75~~	~~4~~						
		B_1	F	80	2						
		B_3	C	80	2						
		J_1	F	5	3						
152											
		J_1	F	10	3						
		B_1	F	75	4						

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PROJECT No. _____

Golder Associates

Hole No. 938

SHEET 5 OF 38

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION		DESCRIPTION AND REMARKS
		J1	F	45	2	
		B2	C	75	2	
158						
		B2	C	70	2	
		B1	F	70	4	
162		J1	F	26	3	
		B3	C	85	2	
		B2	B	75	5	
		J1	F	5	3	
		B1	F	75	1	
		B2	C	75	2	
		B2	B	75	2	
						many surfaces oxide coated
168						
		B1	F	75	3	
172		B2	C	75	3	
		B1	B	75	1	
						s& & oxide coating
		J1	F	10		
		J4	F	10		
		J4	F	30		
		J4	W	15	4	some cavities
		B2	B	80	3	
		B1	B	50	1	some broken core
178						
		B3	C	–		
180		B2	B	75	2	

GRAPHIC LOG: BRECCIA/GOUGE ☐ BROKEN CORE ▨

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

NATURAL FRACTURE FREQUENCY: 15 10 5

PERMEABILITY

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 93B

SHEET 6 OF 38

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
180	6 ft	B_1	F	75	6			74/120	9/120	
		B_2	C	75	4					
		B_2	B	75	1					
		J_1	F	45	2					
		J_1	F	15	1					
187.1										
188		J_1	B	40	1			14/72	10/72	
	6" / 72	B_1	B	75	8					
		J_1	F	5	1					
190						>90% core recovery				
194		J_1	B	28°	4			9/60	10/60	
		B_1	B	60	-5					
	NIL	J_1	F	5°						
		B_3	B	80°	-3					
199		B_3	B	80	6				7/48	
200	10 / 48	J_1	B/F	50°	4			0		
		J_1	B	70°	-3					
200.8										
203	NIL	J_1	F	30°	-2					

LOGGED BY: _____

DATE: 26/10/76

PROJECT No. _____

Golder Associates

Hole No. 138

SHEET 7 OF 38

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS
	13/84	J,	B	45°	5
		J,	F	70°	-5
		J,	F	5°	
	N/C	B,	C	80°	-11
211		B,	B	65	-12 } coal seams
	12/84	B4	B	65	
		J,	C	25°	-2
		B,	C	80°	-2
218.5		J,	F	20-25	-6
		J4	F	25°	-4
220	12/120	B3	C	80°	
		B2	C	50°	-7
		B,	B	70°	
		B4	B	70°	-4
228	6/120				
230					

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

NATURAL FRACTURE FREQUENCY: 15 10 5

PERMEABILITY

211.0 — Coal ~90% recovery — 215.8

ROCK QUALITY DESIGNATION: 28/84; 21/84; 52/120; 42/120

NATURAL FRACTURE FREQUENCY: 11/84; 14/84; 7/120

LOGGED BY: _____

DATE: 26/10/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 8 OF 38

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS
230		B_1	B	70°	-9
		B_3	C	80°	-7
	5%	J_1	F	20°	-4 } 90° to each other.
		J_1	F	5°	
		J_2	B	50°	-6
238		B_3	C	80°	-5.
		J_1	F	10°	-3
240		J_2	C	25°	-5
	NIL				
		B_3	C	75°	-5
		B_1	B	60°	-5
		B_4	B	60°	-4
246		B_1	B	70	-8
	NIL	J_1	B	60	-3
250		J_2	B	50	-2
251		B_1	B	70°	-5
	NIL	B_4	B	70°	-2
		J_1	F	45	-3
		B_3	C	80°	-4

GRAPHIC LOG — BRECCIA/GOUGE — BROKEN CORE

HARDNESS (4 3 2) — ROCK QUALITY DESIGNATION (75 50 25) — NATURAL FRACTURE FREQUENCY (15 10 5) — PERMEABILITY

Coal 247.0 – 251

LOGGED BY: _____

DATE: 26/10/86

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 9 OF 38

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
56		J,	F	10°	-1
	7/120	B,	B'J	60°	-13
		J4	W	20°	
		J,	F	20°	-2
		J,	F	5°	-1
		B2	B	60°	-4
		B,	(K)	68°	-2 (K) at 40° to axis of long face
		B3	C	80°	-3
266		J,	F	20°	-3
		J4	W	20°	4.
	5/120	J1	F	2°	-3 at 75° to J; -20°
		J4	F	2°	-1
		B2	B	75°	-4 B 9-73°
		B3	C	90°	-3
276	10/120	J,	F	25°	-5
		J4	W	20°	-1
		J,	F	13°	-3 ~80° from J, at 25°

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

62/120; 101/120; 69/120

NATURAL FRACTURE FREQUENCY: 15 10 5

6/120

PERMEABILITY

LOGGED BY: _____

DATE: 28/10/76

PROJECT No. _____

Golder Associates

Hole No. 138

SHEET 10 OF 38

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
		B_3	C	85°	-14				6/120	
286		J,	F	25°	-8					
	18/120	J,	C	10°	-3			49/120	9/120	
		B_3	C	90°	-5					
		B_2	C	60°	-4					
296		B_1	B	75°	-6					
		B_3	C	80°	-8					
	8/120	J,	B	40°	-2	Numerous 1-10" coal seams		36/120	15/120	
		B_3	C	80°	-2					
		B_1	B	60°	-2					
		B_2	B	60°	-4					
		J,	F	17°	-15					

LOGGED BY: _____

DATE: 28/10/76

PROJECT No. _____

Golder Associates

Hole No. 93B

SHEET 11 OF 38

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
306		J,	F	25	3
		~~B3~~	C	90°	-2
		B2	B	60°	-15
	22/120	J2	C	15°	-2
316		J,	B	30°	-4
		B,	B	65°	-7
		~~J4~~	B	30°	2 - in coal
	17/120	J4	B	5°	2
		J2	C	5°	-1
		B3	C	80°	-2
		B2	B	67°	-5
326	NIL	J,	B	70°	-1
		J2	C	23°	-3
		B3	C	85	-7
328		J2	C	3°	-2
330		B2	B	70°	-5

GRAPHIC LOG — BRECCIA/GOUGE [ ] BROKEN CORE [ ]

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25): 52/120; 57/120; 13/24; 3/24

NATURAL FRACTURE FREQUENCY (5 10 15): 3/20; 11/120; 1/24

PERMEABILITY

315.5 — Coal 1' lost — 321

(K) - 80° across face

LOGGED BY: _____

DATE: 28/10/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 12 OF 38

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
30	12/120	J_1	W	26°	-3				53/96	4/120	
		B_2	B	72°	8						
		B_3	C	90°	7	B9-70°					
		B_1	B	70°							
338		B_3	C	80-85	-12						
340		J_1	C	11°	-5	} at 100° to each other			92/120	2/120	
		J_2	E	26°	-2						
		J_4	W	26°	-1						
	NIL	B_2	B	60°	-5	B9-60°					
348											
350	NIL	B_1	B	60°	-3	B9-58°			97/120	3/120	
		B_2	B	62°	-5	5° J_2 at 90° to 30° J_2 & B_2; J_2 (30°) & B_2 at 180° to each other					
		J_2	C	5°	-3						
		J_4	C	5°	-1						
		J_2	C	30°	-7	B9-52°					

LOGGED BY: _____

DATE: 28/10/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 13 OF 38

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 15 10 5		PERMEABILITY
	NIL											
358		J_2	C	2°	-2	B9 - 70°						
		J_4	C	2°								
		B_2	B	70°	-9							
360	19" / 120"								96 / 120	0		
		J_4	C	12°								
		B_3	C	90°	-3	B9 - 70°						
		J_4	W	12°	-2							
368		J_4	W	12°								
		B_2	B	70°	-11							
370	NIL	J_2	W	5°	-2	B9-70°			110 / 120	0		
		J_4	W	5°								
		J_4	C	10°		(10°)J_4 at 90° (20°)J_2						
		J_2	C	20°	-3							
		J_4	W	21°	-2							
378	NIL											
380												

LOGGED BY: ~~29/10~~

DATE: 29/10/76

PROJECT No.

Golder Associates

Hole No. 438

SHEET 4 OF 38

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)	PERMEABILITY
380		J,	B	18°	-4						
		J,	B	50°	-3	} ~~at 90° to each other~~ in opp. directions ie.					
	NIL	½							20/96	7/96	
		B2	B	75°	-11						
		B3	C	85°	-3	385					
386		J,	B	30°	-3					30 25 25	Scale changed
		J,	B	50°	-3				19/98	15/98	
	NIL	B,	B	70°	-4	790% recovery for coal — Coal					
390		J,	B	2°						20 15 10	Scale changed.
	10/72	B,	B	70°	-8				30/72	12/72	
		B3	B	85	2						
		J,	B	40°	-2	dipping in opp. directions					
396		J,	B	45°		396					
		B,	B	70°	-17						
		B3	C	80°	-3				37/96	17/96	
		J2	C	45°							
400	NIL										
		J2	C	5°							
404		B2	B	70°	-10						

LOGGED BY: _____

DATE: 29/10/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 15 OF 38

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
		B_3	C	90°	-8					
	NIL							71/120		
10										
414		B_2	B	80°	-9					
		B_1	B	70°	4					
	8/120	B_3	C	80°	-7			51/120	5/120	
		Sq	W	15°						
420										
		S_1	W	12°						
424										
	NIL	B_2	B	73	-6			91/120	9/120	
		B_1	B	70°	-9					
430		B_3	B	80°	-7					

LOGGED BY: [illegible]
DATE: 29/10/76
PROJECT No.

Golder Associates

Hole No. 938
SHEET 6 OF 38

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
430										
434					small amount broken core			26	0/48	
	nil	B3	C	85	14					
438		B3	C	85	3					
		B2	C	75						
440		I2	C	35				94/120	0/120	
	nil	B3	C	85	9					
		I2	C	10						
		B3	C	85	3					
		I2	C	35						
		B2	C	75	2					
		B2	B	75						
448		B2	C	70	3					
450		I1	W	20				102/120	0/120	
		B3	C	85						
		I4	W	20	2					
	nil	B3	C	85						
		B2	C	56	3					

LOGGED BY: KE

DATE: 29/10/76

PROJECT No.

Golder Associates

Hole No. 438

SHEET 17 OF 38

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 (15 10 5)	PERMEABILITY
		B_3	C	85	3					0/120	
458		B_3	C	85	2						
460		B_2	B	70	6				10/120	1/120	
		J_2	O	20							
		B_1	B	70	1						
		J_2	C	20	2						
		J_2	C	0							
465		J_2	C	5							
		B_2	B	15							
470		J_1	C	0					8/120	1/120 (?)	
		J_2	M	15							
		B_3	B	85	3						
478		B_2	B	70	2				0/12		
		B_1	B	70	2				4/24		
		B_1	B	70	2						

LOGGED BY: _____

DATE: 1/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 18 OF 38

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
480										
481		B_2	B	70	3					
	22/84	B_1	B	70-75°	-18 -along coal	Coal		29/84	20/84	
		J_1	B	19	-2 opp. direction, + o bedding					
488		B_1	B	66°	-8					
490		B_2	B	65°	-5					
	31/120	B_4	B	65	-8			41/120	16/120	
		J_1	C	45°						
		J_1	C	5°	-3					
		J_4	C	5°						
		J_1	B	25°	-4					
498		J_1	B	40°	-2					
500	6/120	B_1	B	65°	-12			87/120	14/120	
					B9-70°					
		B_2	B	70°	-4					

LOGGED BY: _____

DATE: 1/11/26

PROJECT No. _____

Golder Associates

Hole No. 138

SHEET 19 OF 38

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
508										
		J_2	W	30°	-2	180° to bedding; dipping opp.				
		J_4	W	30°	-4					
510		B_2	B	70°	-5			110/120	0	
	2"/120	B_3	C	85°	-3					
		J_4	W	20°						
		B_2	B	60°	-5					
		B_4	W	60°	-3					
518										
		B_4	W	55	-4					
520		J_4	W	20°	-3					
		B_2	W	53°	-2			116/120	1/120	
	N/C	B_1	B	70°	-1					
		B_2	B	70°	-6					
		J_2	W	23°						
528										
		B_3	C	90°	-2					
530										

LOGGED BY: _____

DATE: 1/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 20 OF 38

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG (BRECCIA/SOLIDE, BROKEN CORE)	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5	PERMEABILITY
530		B_2	C	70	4						
		B_3	C	85	1					3/120	
									106/120		
		B_1	B	75	3						
		J_4	3	30	2						
		B_2	C	75	3						
		B_2	3	75	2						
		B_2	3	75	2						
538		B_3	C	-							
		J_4	3	30	10						
540		B_4	3	70	10						
		B_2	C	75	3				11/120		
		B_1	3	75	2					2/120	
		B_2	3	75	2						
		B_3	C	90							
548											
		B_2	B	75	3						
550		J_1	B	0	1				87/120	5/120	
		B_1	B	75	2						
		J_1	B	0	1						
		B_1	B	75							
		B_2	B	75	3						

LOGGED BY: _____

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Golder Associates

Hole No. 138

SHEET 21 OF 38

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 (15 10 5)	PERMEABILITY
		B_3	C	85	3						
		B_2	B	75	1						
558											
		B_1	B	70	1						
		B_3	C	85	2						
60		B_1	B	75	6						
	164 core loss								65/120	11/120	
		B_1	B	75	2						
		B_2	B	75	2						
		B_4	B	75	5						
		B_1	B	75	2						
568		B_2	B	75	2						
		B_3	C	85°	-7						
70											
		J_4	W	23	-7	B9-79°					
	Nil	B_2	B	73°	-6				103/120	4/120	
		J_1	B	26°	-4						
578		J_1	(K)	45°		K at 30° to axis of long face					
		S_4	B	2°		578.5					
80		S_1	B	2°	-3						

LOGGED BY: _____

DATE: 1/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 22 OF 38

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
580	17/120	B, B9	B B	72° 72°	-15			60/120	21/120	
		J,	B	25°	-2					
					Coal					
588					lost 6' in 20' ~30% lost					
590	55/120	B3	B	90°	-2			19/120	19/120	
		J,	B	5°						
		J,	B	42°	-9					
		B,	B	70°	-14					
		B9	B	70°	- bands in coal					
598					598.0					
600	6/120	B3	C	90°	-1			89/120	7/120	
		B2	B	73°	-6					
					B9-73°					
		J,	B	40°						
		B,	B	76°	-6					

LOGGED BY: _____

DATE: 4/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 23 OF 38

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
608		B_1	B	75°	-12 } - coal seams					
		B_4	B	75°						
		B_2	B	75°	-2					
	5/120							72/120	13/120	
		J_4	W	26°						
		J_2	C	3°	-3					
		B_2	B	77°	-5					
		B_3	C	90°	-3					
618		J_2	C	92°						
		B_1	B	70-75°	-4 } Coal seams					
		B_4	B	70-75°	-4					
	NIL							93/108	9/108	
		J_2	B	65°						
		J_4	W	12°	-2					
		B_2	B	72°	-4					
		B_3	C	85°	-2					
627										
	NIL	B_1	B	70°	-6 } coal seams B9-70°					
		B_4	B	70°	-7					

LOGGED BY: _____

DATE: 4/11/86

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 29 OF 38

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 (15 10 5)	PERMEABILITY
630		J_4	W	20°	-2mm. offset of laminations					
		J_1	C	27°	-2 -180° to bedding, dipping opp. direction ie					
		B_2	B	70°	-5			94/120	8/120	
	NIL									
		B_3	C	90°	-3					
637						Coal				
		J_1	B	2°	-2					
		B_1	B	75°	-14					
640		B_2	B	76°	-4			61/132	22/132	
	NIL	J_1	B	53°						
		J_1	B	60°						
		J_4	W	17°						
648		J_1	B	2°	4					
650		B_1	B	68°	-1	B9- 75°		113/120	1/132	
	NIL									
		B_2	B	75°	-3					
		B_3	C	80	-2					

LOGGED BY: _____

DATE: 4/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 25 OF 38

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 15 10 5	PERMEABILITY
	nil										
		J_2	C	0°							
658		J_4	W	63°	-2	} 180° from each other dipping in opp. directions					
		J_4	G	14°							
660		B_3	C	90°	-10				11/120	1/120	
		B_1	B	65°							
		B_4	B	65°							
	nil	J_2	C	19°							
						B9 - 65°					
668											
		B_3	C	90°	-2						
670		B_2	C	80°	-8	B9			106/120	0/120	
	nil	J_2	C	20°							
		J_2	C	65°							
678											
680											

LOGGED BY: _____

DATE: 9/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 26 OF 38

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
680										
	Nil	B_3	B	60°	-3 B9-60°			106/120	5/120	
		B_1	B	54°	-3					
		B_1	B	70°	-2 massive					
688										
		B_1	B	55°	-4 irreg. dipping coal seams between 50-70°					
690		B_1	B	70	-7					
		B_2	B	irregular	-5			95/120	11/120	
	Nil	J_4	C	12°						
		B_3	C	80°	-4					
698										
		B_3	C	90°						
		J_2	C	60°						
700								115/120	7/120	
	3/120	B_1	B	71°	-2					
		B_2	C	70-75°	-7 B9-75°					

LOGGED BY: _____

DATE: 9/11/120

PROJECT No. _____

Golder Associates

Hole No. 238

SHEET 27 OF 38

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
708					
		B_1	B	65°	-3
		B_3	C	90°	-2
710	10/108	B_2	B	67°	-6
		J_1	C	6°	-2
		J_4	C	6°	-2
717					
		J_4	C	25°	
		B_1	B	71°	-4
		B_2	C	70°	-6
720	NIL	J_1	W	20°	
		J_1	W	11°	-3
		J_2	C	55°	-2
		B_3	C	85°	
727	6/12	B_3	C	90°	-3
728					
		B_3	C	90°	-7
730					

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION (75 50 25): 76/108; 97/120; 0

NATURAL FRACTURE FREQUENCY (15 10 5): 0; 5/108; 8/120; 0

PERMEABILITY

B9-68°

LOGGED BY: _____

DATE: 9/11/76

PROJECT No. _____

Golder Associates

Hole No. 138

SHEET 28 OF 38

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
730	40/120									59/120	20	
		B_2	B	71°	-4	89-70°						
		J_4	C	12°	-2							
		J_1	C	12°	-4							
		J_3	C	10°	-2							
		B_3	C	89°	-2							
738												
		B_2	B	85°	-7	6" calcite cemented breccia						
770		B_2	C	85°	-3					113/120	0	
	NIL											
		J_2	C	32°								
798												
		B_1	B	80°	-2							
		J_2	B	40°	-2							
750		B_2	B	81°	-2					103/120	7/120	
	NIL											
		B_2	B	68°	-6							

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DATE: 8/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 29 OF 38

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 15 10 5	PERMEABILITY
		S_2	C	35°	-1						
758		B_3	C	86°	-3						
760	2"/120	B_2	B	78°	-7				98/120	2/20	
		J_1	B	21°							
		J_4	C	2°	-2						
		J_4	W	11°	-4						
		J_1	C	2°	-1						
		J_2	C	55°							
768		B_3	C	90°	-5						
769	6/12	B_3	C	90°	-2				4/12	0	
770	4"/108"	B_3	C	90°	-6				100/100	2/108	
		B_2	C	70-75°	-4						
		S_3	C	70°							
		B_4	B	78°	-2						
		B_1	B	78°							
778		S_1	B	50°							
780	NIL	B_3	C	85°					115/120	2/120	

LOGGED BY: _____

DATE: 8/11/76

PROJECT No. _____

Golder Associates

Hole No. 938

SHEET 30 OF 38

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
780		J_1	B	48	-2	-almost parallel to bedding.					
		B_2	C	71°	-5	B9-70					
	NIL										
						B9-73°.					
		J_2	C	47°							
788		B_2	C	70°	-2						
	4" / 96	J_4	W	90°	-2				91 / 96	0	
790		O_2	B	69°							
		B_2	B	75°	-2	B9-74°					
		J_4	W	12°							
		B_3	C	85°	-1						
796		J_1	C	0°							
		J_4	W	30°	-4				113 / 120	1 / 120	
800	NIL	B_3	C	90°	-3						
		B_3	C	80°	-2						
		B_2	C	74°	-5						
						B9-73°					

LOGGED BY: _____

DATE: 8/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 31 OF 38

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
806	N/C									
		I_1	C	2°	1					
		B_2	B	73°	-2			101/120	1/120	
810	N/C	J_4	W	17°	-3	B9-72°				
		B_2	C	73°	-14					
		J_4	C	2°						
816										
		I_1	C	10°	-8					
		I_1	B	55°	-2			106/120	6/120	
820	N/C	B_3	C	irregular	-3					
		J_3	C	35°	-2					
		B_2	C	72-75°	-12					
826										
		J_4	W	19°						
	6/120	B_1	B	70°	-4	Coal seams		93/120	4/120	
		B_4	B	70°	-3					
830										

LOGGED BY: _____

DATE: 8/11/76

PROJECT No. _____

Golder Associates

Hole No. 438

SHEET 32 OF 38

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 15 10 5	PERMEABILITY
830		B_2	B	73°	-6					
		B_2	C	80°	-2					
		J_1	W	18°						
		J_2	C	16°						
836		J_2	C	3°	-1	836.5			20 15 10 → change Scale	
		J_2	B	5°	-2					
	24/120	B_1	B	76°	-19	Coal lost 1.5'/4.5 ~20%		43/120	28/120	
840		J_1	B	26°	-3	841.0				
		B_1	B	70	-4	B9-70°				
		B_2	B	73°	-6					
846										
850	NIL	B_2	B	68-72°	-18			104/120	0	

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Golder Associates

Hole No. 938

SHEET 33 OF 38

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
856	N/C									
	12/132	B_2	C	76°	-7			79/132	12/32	
860		B_3	C	90°	-1					
		J_1	B	60°	-2					
		J_1	B	50°	-2					
		B_1	B	80°	-8					
867	5/24	B_3	C	90				0	N/A	
	1	B_3	B	70	completely broken					
869		J_1	B	65°						
870	59/108	J_1	B	32°	-3			10/108	15/108	
		B_1	B	73°	-11					
878		B_3	B	85°						
880		J_1	B	40°						

Most breaks in Coal unrecognizable

Coal core lost = 6'/15' ~40%

large % core has consistancy of gravel

863.0 – 878.0

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SHEET 34 OF 38

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
880		B_1	B	74° -6						
		B_3	C	80-85 -3				45/120	10/120	
	39/120	B_2	B	75-80 -6						
		B_4	B	75° -11°						
		J_1	B	66° -3						
888		J_2	C	53° -2						
890		B_1	B	75-80° -9				70/120	9/120	
		B_4	B	75-80 -14						
	NIL	B_2	B	70-73° -13						
898		J_4	W	28° -4						
900	5/120	B_2	B	70° -9	B9 72°			104/120	3/120	
		B_1	B	72°						

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Golder Associates

Hole No. 838

SHEET 35 OF 38

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 (15 10 5)	PERMEABILITY
	NIL	B_1	B	72°	-2					
		B_4	B	70°	-3					
908										
		S_4	W	20°	-1					
		B_1	B	65°	-1			108/120	9/120	
		B_2	B	68°	-3					
	NIL	B_1	B	85°	-8 } coal	B9-70				
		B_4	B	85°	-7					
		B_3	C	90°	-1					
918										
		B_1	B	77°	-4					
		B_4	B	77°	-9					
		B_2	B	70°	-3			109/120	4/120	
		B_2	B	63°	-2					
	NIL	S_4	B	28°		B9-72				
		S_2	C	52°						
928										
		B_1	B	63°	-2					
930										

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Golder Associates

Hole No. 138

SHEET 36 OF 38

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
930		B_1	B	63°	-3					
		B_9	B	63°	-5					
	NIL	B_2	B	65°	-4			97/120	10/20	
					B9-65°					
		B_1	B	70°	-5					
938		B_9	B	70°	-4					
		J_1	B	49°	-3					
		J_1	B	72°	-2					
940	72/120	B_1	B	80°	-5			13/120	N/A	
		B_7								
		J_1	B	5°	-5					
					Coal 9.5' / 23' ~45%				Too much broken core	
					Core lost					
948									30 25 20 15 Change scale	
950	12/96							8/96	30/120	
		B_9	B	70-75	- too many.					
		B_1	B	70-75°	-23					
		J_1	B	35°	-5					
		J_1	B	2[illegible]	-2					

LOGGED BY: _____

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Golder Associates

Hole No. 438

SHEET 37 OF 38

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 30 15 0	PERMEABILITY
956		B_2	B	77°	-3					
		J,	B	18°	-2					
	30/120	B,	B	75°	-13			38/120	19/120	
		J,	B	35°	-1	Coal				
960		J,	B	3°	-3					
		B_9	B	70-75	-8	963				
966									15 10 5	Change Scale
		B_1	B	70°	-6					
		B_2	B	20°	-2					
970	W/C							101/120	9/120	
		B_3	C	80°	-4					
		B_1	B	70°	-3					
		B_4	B	70°	-11	B_9 - 66°				
976										
980										

LOGGED BY: [illegible]
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Golder Associates

Hole No. 438
SHEET 38 OF 38

K-FORDING 76(3)A-2

319

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	PERMEABILITY
50	4ft 10ft				TRICONE					
60	4ft 10ft	B1 J1		28 3 20 3	surfaces covered with calcite (calcrete)			5/84		
67		B1 J1	calcrete	25 2 40 3						
70	6ft 10ft				Fe oxide on surfaces.			8/120		

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Golder Associates

Hole No. 439

SHEET 1 OF 37

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
77											
					the ultimate; 3 ft of non core.	?	?	?			
80	6.5 ft lost				~~oxide coating on surface.~~						
87											
90	8 ft lost				~~of~~ Fe oxide on most surfaces.						
97											
99	1.5 ft lost										
100											

LOGGED BY: _____

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Golder Associates

Hole No. 439

SHEET 2 OF 37

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
	6 ft lost				one six inch piece rest broken					
107	1 ft	J_1	F	5						
		~~B_3~~	~~C~~	~~85~~	B_g 85°			49/60		
110		B_3	C	85	1					
		B_2	C	80	5					
112	6" lost	B_2	C	85	4			0		
113	2 ft	B_3	C	90	2					
		B_2	B	85	4			25/60	7/60	
		B_1	B	85	4					
		J_1	F	5	3	B_g 90°				
118	1 ft lost									
120		J_1	F	5	2	1 4" piece				
		B_1	B	80	5					
		B_2	C	80						
122	1 ft lost	B_2	C	80	6			16/60	1/60	

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Golder Associates

Hole No. 439

SHEET 3 OF 37

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 (15 10 5)	PERMEABILITY
		J_2	T	50							
		J_1	T	5		broken core					
127						surfaces angular but oxide coated.					
130	24 lost	?	C	85							
		?	C	50		Bg - 25°					
132											
	nil	B_2	C	30	2						
		B_3	C	80	2				24/48		
136						small amount broken					
	nil	B_3	C	90							
		B_3	C						27/60	5/60	
		J_2	C	35	3						
		B_3	C	80	2						
140		B_1	F & B	40	3						
141		J_1	F	90	2 5°						
		B_3	C	80	2						
		J_1	F	15							
		B_2	B	40							
		B_1	F	40							
		B_3	C	85	3				50/60	3/60	
		B_2	B	40							
		B_3	C	85							
		J_1	F	35		Bg 43					
146											
		J_1	F	35	6						
		B_1	B	40	2				46/60	8/60	
		37									
150											

LOGGED BY: _____

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Golder Associates

Hole No. 439

SHEET 4 OF 37

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 (15 10 5)	PERMEABILITY
	nil	J_2	F	35						
		B_2	B	40						
	nil	J_1	F	35	#5			32/60	6/60	
		J_1	F	20	very angular surface xbdg.					
		B_2	B	20						
		B_2	B	60						
		B_3	C	80	3					
		J_2	M	30						
		B_2	B	60						
156	nil	B_3	C	85	small amount broken core 2			39/60	0	
		J_2	W M	40						
		J_2	B	35						
		J_2	B	30						
160		B_3	C	85	3					
161	nil	B_3	C	85	2			53/60	1/60	
		B_2	B	60						
		B_3	C	85						
		J_1	F	30						
		J_2	B	30						
166	1 ft loss	B_3	C	85	small amount broken core 4			30/60	1/60	
		J_2	B	35						
170		B_3	C	80	3					
		J_2	B	50						
171		B_1	F	40						
		B_2	B	60				30/60	0	
		B_3	C	85						
		B_3	C	45	3					
		B_2	B	55	2					

LOGGED BY: _____

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Golder Associates

Hole No. 439

SHEET 5 OF 37

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 15 10 5	PERMEABILITY
176	nil	B_1	B	45	3			35/60	6/60	
		B_2	B	50	2					
180		B_1	B	45	3					
181	nil	B_3	B	85	3	coal		24/60	5/60	
		B_1	B	55	2					
		J_1	B	15	3					
		B_2	B	55	2					
186	nil	B_1	B	45	4			8/24	4/24	
		B_2	D	45	2					
188	nil	J_2	C	10				8/48	4/48	
		J_2	C	20						
		B_2	B	50						
190		B_1	B	45						
		J_1	B	55	3					
					small amount broken.					
192	nil	J_2	B	35	4			33/60	5/60	
		B_2	B	50	2					
		B_1	B	45	3					
		B_1	B	45	2					
		B_3	C	85	2					
187	nil	~~B_2~~	~~B~~	~~60~~	B_3 C 80 4			16/60		
		~~B_3~~	~~C~~	~~85~~	B_1 B 45 2					
		~~B_3~~	~~C~~	~~85~~	J_1 B 5 small amount broken					
200										

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PROJECT No. _____

Golder Associates

Hole No. 439

SHEET 6 OF 37

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 (15 10 5)	PERMEABILITY
		B_2	B	45					3/60	
		J_2	C	30						
202	nil	~~J_2~~	~~C~~	~~35~~	B_3 C 80; B_2 C 50; J_2 C 30; B_3 C 85; B_1 B 50 3; B_2 B 45; J_2 C 30			43/60	3/60	
		~~B_2~~	~~B~~	~~45~~						
		~~B_1~~	~~B~~	~~45~~						
		~~B_2~~	~~B~~	~~45~~						
		~~B_3~~	~~C~~	~~85~~						
207	nil	J_2	C	35				32/60	2/60	
		B_2	B	45						
210		B_1	B	45	2					
		B_2	B	45	2					
		B_3	C	85	2					
212	nil	B_1	B	25	3 ssk 10° from // with long axis			10/24	3/24	
		B_3	C	80	3					
214	nil	J_1	C	10				18/24	3/24	
		J_1	C	10						
		J_1	B	25						
216	1/4 lost	B_3	C	85	2			36/72	4/72	
		J_2	C	60						
		B_2	C	50						
		B_3	C	90	2					
220		B_1	B	40	4					
		B_3	C	85	3					
222	nil	B_2	B	45	2			60/60	0	

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Golder Associates

Hole No. 439

SHEET 7 OF 37

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 (15 10 5)	PERMEABILITY
		B_3	C	80					0	
227		B_2	B	45						
		J_7	C	40	B9 25'					
		B_3	C	80				32/60	5/60	
		B_2	C	40						
230		J_1	W	10	curved					
		B_3	C	80						
		J_2	W	40	B_3 C 85° 5' small amount broken					
		J_1	C	10	B_1 B 40° 2					
232		~~B_3~~	~~C~~	~~90~~	~~2~~					
		~~J_2~~	~~C~~	~~75~~	small amount broken					
		~~B_1~~			J_2 M 40			34/60	2/60	
	left lost				B_2 B 45					
					J_1 B 40 2					
237		B_3	C	90	2					
		J_2	C	75						
		B_1	B	40	2			34/60	2/60	
240	nil	B_4	B	40	6					
		B_2	B	40						
242		J_2	C	70						
		J_2	C	70				51/60	0	
	nil	B_4	W	30	3					
		B_2	B	45	4					
		J_2	C	40						
247		J_2	W	35	2					
	nil	B_1	B	70				59/60	1/60	

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Hole No. 439
SHEET 8 OF 37

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	PERMEABILITY
		I_2	C	70							
252		B_3	C	80	2						
		B_2	C	40	2						
	nil	B_2	C	90	2				42/60	0/60	
		B_4	B	35	4						
257											
		B_3	C	90							
260		I_2	C	35					94/120	7/120	
		B_2	C	50	3						
	nil	B_3	C	90							
		J_1	C	40							
		B_1	B	35	2						
		B_3	C	90	2						
		B.	B	40	4						
267		B_3	C	80							
		B_2	B	65							
270	nil	B_2	B	85					58/60	0/60	
		B_2	B	45	2						
272		B_3	C	80							
		B_3	C	80	3						
	nil	B_2	C	60	2						
		B_4	W	45					54/60	2/60	

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Golder Associates

Hole No. 439

SHEET 9 OF 37

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 15' 10' 5'		PERMEABILITY
		B.	B	45	2	B9 - 40°						
277	nil	B_2	C	55	2				46/60	1/60		
		B_3	C	-								
		J_1	C	45								
280		B_3	C	-								
		B_2	C	50								
282	nil	B_3	C	85					55/60	0/60		
		B_3	C	80	2							
287	nil	B_3	C	85	2				26/48	3/48		
		J_1	W	25	3							
		J_2	C	20	2							
290		B_3	C	90	2							
291	nil	B_3	C	85	3				52/60	0/60		
		B_3	C	85	2							
		J_2	C	40	2							
		B_2	C	40	1							
296	nil	B_3	C	90	2				53/60	0/60		
		I_2	W	25	1							
		J_4	W	25	1							
		B_3	C	85	2							
300												

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Golder Associates

Hole No. 439

SHEET 10 OF 37

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
301		B_2	C	45							
	nil	B_3	C	90					17/24	0/24	
		B_2	C	60							
303		B_2	C	45							
		B_3	C	90					33/60	1/60	
		B_2	B	65							
~~310~~	nil	B_3	C	90	3						
		~~B_2~~									
		J_1	C	20							
		J_2	C	30							
		B_3	C	85							
308											
		J_2	C	70	3				48/48	0/24	
310	nil										
312											
		B_3	C	90	4				47/60	1/60	
	nil	B_1	C	90							
		B_1	C	35	4						
317											
	nil	B_3	C	90	10				41/60	0/60	
320											
322											
	nil 100%	B_c	C	85	4				37/60	0/60	
		J_2	C	70	2						

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Golder Associates

Hole No. ~~439~~

SHEET 11 OF 37

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
		B_3	C	90	1					
327										
	1 ft lost									
330										
332										
	3 ft lost									
337										
	6" lost									
		B_1	B	50	3			9/36	3/36	
340										
	6" lost	B_1	B	50	3				6	
		J_1	B	50				9/48	4/8	
		B_1	B	50	2					
		B_2	B	50	2					
344										
	6" lost							20/66	8/66	
		B_1	B	40	8					
349.5										
350										

Coal

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Golder Associates

Hole No. 439

SHEET 12 OF 37

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 15 10 5	PERMEABILITY
		B_1	B	50	5				0 / 54	5 / 54	
354											
355.5						coal					
		B_1 / J_1	B / B	60 / 35	3				10 / 54	1 / 54	
360		B_3	C	85	2						
		B_1 / B_2 / J_2	B / B / B	45 / 45 / 45	4				c / 60	4 / 60	
365		B_3	C	85	1						
		B_1 / B_3	B / C	95 / 80	2 / 3	broken core sdst with Fe oxide on joint & bedding planes			4/12	4/12	
368.5		B_1 / B_2	B / B	55 / 60	2				9/30	2/30	
370		J_2 / B_3 / B_2 / B_1 / B_2 / ~~B_3~~	M / C / C / B / B / ~~C~~	35 / 90 / 50 / 50 / 50 / ~~90~~	4 / 5 / ~~2~~				68 / 102	5 / 102	

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Golder Associates

Hole No. 439

SHEET 13 OF 37

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 (15 10 5)	PERMEABILITY
		B_3	C	90	2						
377											
		B_3	C	85	5						
		B_1	B	50	3	extremely smooth					
		B_1	B	50	6						
380		J_1	C	05	2					13	
		B_3	C	90	4				70	120	
		B_1	B	50	2				120		
		B_2	C	50							
		B_3	C	85							
		B_2	C	50							
		B_3	C	90							
		B_2	C	35							
387											
		B_3	C	90	2						
		J_2	C	45					50		
		J_1	C	0					120		
390		J_4	C	10	3					2	
		B_3	C	90	7					120	
		J_2	C	70							
		B_1	B	35							
		B_3	C	90	4						
		J_2	C	45							
		B_2	C	35							
		B_3	C	90	3						
397		B_1	B	35							
		J_2	C	25							
		J_2	C	35							
400											

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Golder Associates

Hole No. 439

SHEET 14 OF 37

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 15 10 5	PERMEABILITY
	nil	B_2	B	35				102/120	2/120	
		B_4	W	35	2					
		B_2	B	35						
		J_2	C	70						
		B_4	W	35						
		B_3	C	90	3					
		B_1	B	35						
407										
	nil	B_3	C	90	8					
		B_2	B	35	3					
		B_2	W	35						
410		B_3	C	90	2			70/120	5/120	
		B_1	B	40						
		B_3	C	90	3					
		B_1	B	45	3					
		J_4	W	25	3					
		J_2	C	80						
		B_2	C	45	3 J_4 W 20° 5					
		B_2	B	40						
417		B_3	C	85						
		J_2	C	50						
		B_2	B	40						
		J_2	C	45						
420		B_1	B	45				80/120	2/120	
		J_4	W	30	2					
	nil	J_2	C	50						
		B_3	C	85	6					
		B_2	B	60						

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Golder Associates

Hole No. 439

SHEET 15 OF 37

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 15 10 5	PERMEABILITY
		J_2	C	~~70~~ 60						
		B_1	B	40						
		B_3	C	90	smooth around broken					
427										
		B_3	C	90	5					
		B_1	B	40	3					
		B_3	C	90				30 / 72	6 / ~~170~~ 72	
430		J_2	C	70						
		B_3	C	90						
		B_1	B	40	3					
433										
		B_3	C	–	3					
		B_1	B	45	3					
		B_3	C	90	~~3~~					
	104	B_1	B	45	7			38 / 114	10 / ~~18~~ 14	
440										
442.8										
					smooth sub surfaces					
		B_1	B	45	3					
		B_3	C	90	3					
		B_1	B	35				93 / 14	6 / ~~18~~ 14	
		B_2	B	40						
		J_2	C	70						
450										

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Golder Associates

Hole No. 139

SHEET 6 OF 37

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 15 10 5		PERMEABILITY
		B_1	B	45	2								
452		B_3	C	–	3								
	nil	J_1	C	30	1					46/60	4/60		
		B_1	B	45	3								
		B_3	C	85	2								
457						small amount broken							
		B_3	C	90	4								
		B_2	B	45	2								
		B_3	C	90									
460		J_2	C	60	2					111/120	2/120		
	nil	B_1	B	50									
		B_2	B	50									
		B_1	B	45									
		B_3	C	80									
		J_2	C	75									
		B_2	B	45	2								
467		J_2	C	30									
		B_3	C	85									
		J_1	C	15	2								
		J_1	C	25									
470	nil	B_1	B	45						76/108	0/108		
		J_2	C	~10	2	angular surface							
		B_2	B	40									
		J_1	C	35									
		J_2	C	10									
		J_2	C	30	3								

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Golder Associates

Hole No. 439

SHEET 17 OF 37

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	PERMEABILITY
476		B_2	B	40						
		B_2	B	40						
		B_1	B	40						
		J_1	C	10	3 (core barotam)					
480		B_1	B	40				80/120	9/12	
		J_2	C	30						
		B_2	B	40						
		B_3	C	90						
		J_2	W	15	2					
		J_1	C	50	2					
		J_2	C	60						
486		J_1	C	10	2 rough surface					
		B_3	C	90	27					
		B_1	B	45				62/120	1/120	
490		B_2	B	50						
496										
		B_3	C	90	13					
500		B_2	B	45						

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Golder Associates

Hole No. 439

SHEET 18 OF 37

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		PERMEABILITY
500	nil	J_2	W	25					82/126	1/126		
		J_1	C	30								
		J_4	W	30	7							
		J_2	W	30								
506.5		J_2	W	0	2	small amount broken						
		J_1	B	15								
		J_2	C	10								
		B_3	C	90	6				94/120	2/120		
510		B_2	B	30								
	1ft lost	B_3	C	90	6							
		B_2	C	40								
		B_1	B	40								
						small amount broken						
516.5		B_3	C	90	3							
		B_1	B	40								
520	nil	B_3	C	90	9				78/126	1/126		
		J_2	C	70								
		B_3	C	90	4							

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Hole No. 439

SHEET 19 OF 37

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 (15 10 5)	PERMEABILITY
527		J_2	C	0						
		B_3	C	90	4					
530	3' lost	B_1	B	50	6			35/120	9/120	
		J_1	B	70°	3					
537		B_3	C	90°					20 15 10'	~ change Scale
	18/60	B_1	B	40°	6					
		J_1	B	30°	5			9/60	3/60	
540		J_1	B	18°	.2					
					Coal lost 5'/25, ~20%	536.5				
542		J_1	B	18°						
		B_1	B	45°	-15					
	NIL	B_4	B	45°	innumerable			46/60	19/60 ~30%	
547		J_1	B	39°	-3					
		J_1	B	90°	~90° % bedding					
	9/60	B_1	B	45°	-7			25/60	9/60	
550		J_1	B	29°						

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Golder Associates

Hole No. 439

SHEET 20 OF 37

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)		PERMEABILITY
550											
552											
	6/60	J1	B	50	90° to bedding (AZ)			25/60	15/60		
		J4	B	50°							
		B1	B	50°	-10						
		J1	B	14°							
557		J1	B	29	-3						
	24/60	B1	B	48°	-5			18/60	7/60		
		J2	B	18°	-2						
560											
562		J1	B	25	-2	561.5					
	4/60	B3	C	85°	-13			36/60	9/60	~ change scale	
		J1	B	42°	-4						
567		J2	C	12°							
	15/60	J2	C	14°	-2			25/60	9/60		
		B1	B	40°	-9						
		B4	B	40°	-8						
		B3	C	90°	-3						
570											
572											
	14/100	B1	B	38°	-3			48/100	6/60		
		B4	B	38°							
		B3	C	90°	-7						

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Golder Associates

Hole No. 439

SHEET 21 OF 37

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 (15 10 5)	PERMEABILITY
		J_1	K	18°	-3 K at 82° across long face					
		J_4	B	10°	-1					
580										
581										
		B_3	C	90	-7					
		J_4	W	2°	-3	B9 - 38°				
	6/120	B_1	B	38°	-3				4/120	
								97/120		
		I_1	W	30°	-1					
590										
591										
	NIL	B_3	C	90	-8	B9 - 37°		21/24		
593										
		B_1	B	90	4					
		B_3	C	90	2					
								110/120	6/120	
	nil	I_1	W	10	2					
		B_2	B	45	3					
600										

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Golder Associates

Hole No. 439

SHEET 22 OF 37

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	PERMEABILITY
		B_4	W	45	2						
		J_4	W	25	2						
603		B_3	C	75							
		B_2	B	45	1				40	2	
		B_1	B	45	2				48	98	
607		B_3	C	90							
		B_2	C	40							
		J_2	C	15					87		
610		B_3	C	90	8					3	
		B_1	B	40		curved.				120	
		B_1	B	45							
		J_2	W	15							
		B_1	B	45							
		B_3	C	90	6						
617		J_2	W	15							
		B_3	C	90							
620		J_2	W	15					76		
									120	8	
		B_1	C	40						120	
		B_2	C	90							
		B_1	B	45	7						

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Golder Associates

Hole No. 139

SHEET 23 OF 37

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
		B_3	C	90	5'					
627					broken core			6	3	
	6" 60°	B_1	B	95	3			24	24	
					broken core					
629										
630		B_3	C	90						
								68	7	
		B_1	B	50	4			96	54	
		B_3	C	90						
		B_1	B	50	3					
637										
		B_2	B	50				6	25%	
	6" 60°	J_1	B	25	2			3	9	
		B_1	B	50	6			36	3	
640										
		B_2	B	50	2					
		J_1	B	40	2			18	8	
		B_1	B	50	4			48	48	
	60°	J_1	B	30	2					
644										
		B_3	C	85	2			27	6	
		B_1	B	50	4			36	36	
		B_2	B	50						
647										
								80		
		B_1	B	50	5			120		

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Golder Associates

Hole No. 439

SHEET 24 OF 37

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
		J_1	B	20	2					
		B_1	B	50	7				14/120	
		J_2	W	5						
		J_4	W	5	3					
657										
		B_1	B	45	5					
660								96/120	5/120	
		B_3	C	90	6					
		B_2	B	40						
		B_3	C	90	4					
667										
		B_3	C	80	4					
670								111	3/120	
		J_2	C	70	2					
		B_1	B	50						
		B_3	C	80	3					
		J_2	C	65						

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Golder Associates

Hole No. 439

SHEET 25 OF 37

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		PERMEABILITY
		J_2	C	75								
		B_3	C	90								
677		B_3	C	90	4							
680		B_1	B	45	6					8		
		B_2	C	45	2					120		
		J_2	C	50								
		B_2	B	50								
		B_1	B	50	2				80			
									120			
687		J_2	C	45								
690									80	9		
		B_2	B	50						120		
		B_1	B	50	6				90			
		B_3	C	90	2				120			
		B_3	C	90	3							
		B_1	B	~~50~~	3	small amount broken.						
		B_2	B	55								
697		B_3	C	90								
		B_1	B	55								
		B_3	C	80	2				60			
700									20			

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Golder Associates

Hole No. 439

SHEET 26 OF 37

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		PERMEABILITY
		B_1	B	50	9						
					Small amount broken..				12 / 120		
		B_2	B	60							
		B_1	B	50	3						
		B_3	C	80							
707		J_2	W	10							
		B_3	C	90	6						
710		B_2	B	40							
		J_2	C	50				73	10		
		B_2	C	65				120	120		
		B_1	B	45	80						
		B_3	C	90							
		B_2	C	50							
717		B_3	C	85	2						
		B_2	C	45	2						
720								102 / 120	1 / 120		
		B_2	C	60							
		B_1	B	50	1						

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Golder Associates

Hole No. 439

SHEET 27 OF 37

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	PERMEABILITY
		B_3	C	90						
		B_2	C	55						
727										
		B_1	B	45	6					
		B_2	B	45						
730										
					small amount broken					
		B_1	B	45	3			80	13	
		J_2	C	25	4			120	120	
		B_1	B	45	4					
					small amount broken					
		B_3	C	65						
		B_3	C	90						
737		B_2	C	50						
	6" lost	J_2	C	15						
		B_1	W	50	mostly broken core			4 24		
739										
740		J_1	C	30	3					
	1' lost							15 72		
745		B_2	C	–	2					
		J_1	C	30	3					
		B_2	C	50	3			48 72	72 72	
	6" lost	B_3	C	90						
		J_1	C	30	2					
750		J_1	C	60	3					

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Golder Associates

Hole No. 439

SHEET 28 OF 37

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 15 10 5	PERMEABILITY
751	6" lost	J_1	C	30				52/72	6/72	
		B_1	B	45	smooth around broken					
		J_1	C	65	4					
757		B_3	C	90	5					
760	nil	B_1	B	45	2			94/120	7/120	
		B_2	B	50	4					
		B_1	B	50	2					
		J_1	B	90	3					
767		B_2	B	45	6					
770	nil	J_2	C	25	2			103/120	4/120	
		J_2	C	60						
		B_2	B	45	2					
		B_1	B	95	2					

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Golder Associates

Hole No. 439

SHEET 29 OF 37

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 (15 10 5)	PERMEABILITY
		B_2	C	45					103/120		
		J_2	C	0	2						
777		J_2	C	0	2						
		B_2	C	45							
		J_2	C	60							
		J_1	W	~~45~~							
780		J_4	W	5	2				65/144	1/144	
	41/100	B_3	C	85		small amount broken core					
		B_3	C	80-90	6						
789											
790		B_3	C	90							
		B_3	C	90					32/48	2/48	
	nil	B_1	B	45	2						
		B_2	B	45							
		B_3	C	90	4						
793		B_3	C	–	2						
		B_3	C	90	2				32/98	0/48	
	nil	B_3	C	75							
797											
		B_3	C	90	2					0	
		B_2	B	50	2						
800		B_3	C	80	4						

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Golder Associates

Hole No. 439

SHEET 32 OF 37

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		PERMEABILITY
		~~B_2~~ ~~J_2~~							107/120	0/120		
		B_2	B	45	2							
		J_2	C	50								
807												
		B_2	B	45								
810		B_2	B	45					112/120	2/120		
		B_2	C	85	3							
		B_2	B	50	5							
		B_1	B	50								
817		B_3	C	–								
820		B_2	B	50	3				96	0		
		B_3	C	90								
		B_2	C	50								
		J_2	W	35								
		J_4	W	35	2							

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Golder Associates

Hole No. 439

SHEET 31 OF 37

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		PERMEABILITY
		B_2	W	45	2					0		
		J_2	C	25								
827												
		B_2	W	45								
		B_2	B	40								
830		B_3	C	80					114/120	2/120		
		J_2	C	45								
		B_1	B	50	2							
		B_2	B	50	2							
837												
		B_3	C	85								
		J_1	B	65								
		B_1	B	50	2							
840										3/120		
		J_2	C	75	4				100/120			
		J_2	C	65								
		B_2	B	50	2							
		J_2	C	65								
		B_3	C	90	4							
		J_2	C	0								
847												
		B_3	C	90								
850		J_2	C	75	2							

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Golder Associates

Hole No. 139

SHEET 32 OF 37

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
		B_3	C	90	2				92/120	2/120	
		J_2	C	75							
		B_1	B	40	2						
		B_2	B	70							
847		J_1	C	70							
		B_1	B	40							
860									92/120		
		B_2	B	40	3					3/120	
		B_3	C	90	2						
		B_2	B	45							
		B_3	C	90	4						
		B_2	B	45	2						
		B_1	B	45							
867		B_3	C	90							
		B_3	C	90	6						
870									15/120	17/120	
		B_2	C	50	2						
		J_2	C	50							
		B_3	C	90							

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Golder Associates

Hole No. 439

SHEET 33 OF 37

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
877		J1	B	30	11 polished surfaces
		B1	B	95	6
		B2	B	80	
	15 ft lost	B1	B	50	
		B2	C	90	
880		B2	B	95	3
		B1	B	95	
		J1	B	90	
881					broken core
		B1	B	50	
		J2	B	75	3
		B1	B	50	
		J2	B	75	5
		B2	B	50	4
		B1	B	50	2
					broken core — coal
	1 ft lost	B1	B	50	3
890		J2	C	75	
		B2	B	50	2
		J2	C	25	
		B2	B	60	
897					broken core
		B1	B	95	5
					broken core — coal

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

NATURAL FRACTURE FREQUENCY: 15 10 5

16/48

3/48

10/192

7/192

PERMEABILITY

LOGGED BY: _____

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Golder Associates

Hole No. 437

SHEET 34 OF 37

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
	2.5 ft loss	B_1	B	50	2	coal			5/120	10/120	
		B_2	B	50	4						
		J_1	B	30	3						
		B_2	B	50	2						
		B_3	B	90	2						
907		B_1	B	55	4						
		B_3	B	90	2	broken core					
910	5 ft loss	B_3	B	90	3				0/120	4/120	
		J_2	B	35	2						
917		B_1	B	45							
		B_2	B	45							
		J_1	C	35							
920	1.5 ft loss	B_2	B	45	3				32/120	6/120	
		J_1	C	35							
		B_2	B	45							
		B_1	B	45	4						
		J_1	B	35	3						

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Golder Associates

Hole No. 439

SHEET 35 OF 37

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	PERMEABILITY
		J_2	B	0	2					
					broken core					
927		B_1	B	45	3					
		J_1	B	0	7			12/60	10/60	
		B_2	B	40	3					
930										
					broken core					
932		B_2	B	30						
		B_1	B	45	2					
		~~B_1~~	~~B~~	~~45~~	~~3~~					
		~~B_4~~	~~B~~	~~45~~	~~4~~					
		B_2	B	45	4					
		B_1	B	50	3			87/180	10/180	
		B_2	B	50	3					
		B_1	B	40	2					
940										
		B_2	B	-	angular, irregular					
		J_2	W	40						
		B_2	B	50						
		B_2	B	50						
		B_1	B	45	3					
947										
		B_2	B	45	4					

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Golder Associates

Hole No. 439

SHEET 36 OF 37

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
950		B_2	B	40						
		J_2	W	38				100/120	1/120	
	nil	B_1	B	55						
		B_2	B	45	3					
		J_2	B	85						
957										
		B_3	C	90						
		B_2	B	50	3			50/72	1/72	
960	nil	B_3	C	90						
		J_2	B	85						
		B_2	B	45	3					
		B_1	B	45						
963										
		B_2	B	45	2					
		J_1	B	45						
		J_2	C	15				50/96	5/~~84~~ 96	
	nil									
		B_2	C	40	3					
		J_1	C	40	4					
		B_3	C	90						
970		B_2	B	45	5					
		B_2	C	55	2					
971										

LOGGED BY: _____

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Golder Associates

Hole No. 439

SHEET 37 OF 37

K-FORDING 76(3)A-2

GEOLOGIC LOG / ENGINEERING LOG

319

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
80												
					TRICONE							
85												
90												
91.6												
92												
95'	1' core lost						S_2	9/24				
100					coal							
97												
	6" lost	B.	O	30	1		R_2	9/24	2/24			
99		J.	O	50	1							
100												
	6" lost	B_1	O	35	5		R_4	5/96	5/96			
		B_2	MIW	35	3							
		B_3	C	85	7							
107												
	1' lost	B_3	C	90	6		R_3	35/96	3/96			
		B_1	O	35	2							
110												

GGED BY RC DATE 8/10/76

GOLDER ASSOCIATES

SHEET 1 OF 34 HOLE No. 440

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
110		B_2	C	35	1				R_3		33/96			
		J_1	C	40	1									
115	0%	J_1	C	30	2				R_4	20/36	3/36			
		B_1	B	40	1									
		B_2	W	45	1									
118		B_3	C	80	7									
120		B_1	O	35	2				R_4	107/120	7/120			
		J_1	O	25	5									
		~~B_2~~			*									
	0%	J_4	O	25	9									
128		B_3	C	80	1									
130		B_1	O	50	6					96/120	13/120			
		J_1	O	50	7									
138														
140														

GGED BY dS DATE 8/10/76

GOLDER ASSOCIATES

SHEET 2 OF 34 HOLE No. 440

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY (18" 10" 6")	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
140		J1	O	45	3					81/120	5/120			
		3_3	C	75	5									
		3_1	O	30	2									
		B_2	C	30	4									
		B_1	C	30	1									
150														
154									R_1					
158					average lenght ~3"				R_1					
160	3"/10'													
164					COAL				R_1					
168	3" bad								R_1					
170		3_2	B	45	2				R_2					

GGED BY [illegible] DATE 18/10/76

GOLDER ASSOCIATES

SHEET 3 OF 34 HOLE No. 440

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG
70		B_1	BM	45	2		
73		B_3	C	80			
		B_3	C	85	3		
		B_2	B	45	2		
		B_1	BM	45	3		
78		B_1	B	45	4		
		J	B	40	1		
80		B_2	B	45	2		
		B_3	C/B	75	3		
		J_1	C	10	1		
		B_1	B	45	4		
		B_2	B	40	2		
		J_1	B	45	3		
		B_3	C	85	2		
90		B_1	B	45	6		
		J_1	C	45	5		
		B_2	B	50	2		
		B_3	C	85	2		
		B_1	B	42	2	ssk 0°	
		B_2	C	80	1		
		J	C	50	1		
100							

ENGINEERING LOG

FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
		R_2	20, 60, 51	3, 60			
		R_3	60	3, 60			
			25	6			
		R_3	60, 54	60, 7			
		R_3	60	60			
			84, 120	13, 120			
			18/24				

GED BY: [illegible] DATE 18/10/76

GOLDER ASSOCIATES

SHEET 4 OF 34 HOLE No. 440

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS
200	NIL	B_2	B	36°	-SKN - 78° on Bedding face.		R3	52/84	3/84		
		B_4	B	35°	-4						
		B_3	B	70	-3						
		B_2	B	45°	-8						
		B_1	B	45	-3						
207		B_3	C	75°	-4						
		B_2	B	50°	-3 B9. - 45°				3/20		
210	NIL	J_4	W	25°	-2		R3	115/120			
		J_1	M	45	-3						
							R3				
217		B_1	B½M	50	-14		R2		16/20		
220	NIL	B_4	B	50°	-18- ¼" coal seams.		R2	100/120			
		B_3	C	80°	-2						
		J_1	B½M	35°	-2						
227	NIL	B_1	B	50°	-3	228–229	R3	91/120			
230											

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET 5 OF 34 HOLE No. 440

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY (5 10 15)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
230														
	NIL	B_3	C	70°	-3				R3		6/20			
		J_1	C	35°	-3									
		B_2	C	55°	-2									
237		J_4	W	35°	-2									
		B_3	C	85°	-4									
240		J_1	C	55°	-3				R3	15/120				
	NIL	J_4	W	55°	-3						3/120			
		B_2	C	40	-2									
					B9-35°									
247		J_1	C	45	-8									
		J_1	C	60	-4									
250		J_4	W	45°	12						12/120			
	NIL	B_3	C	80°	-4				R2	52/120				
		B_2	C	48°	-2									
257														
	NIL	B_2	C	50°	-3									
260														

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET 6 OF 34 HOLE No. 440

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
260	Nil	B_3	M	55°	-5				K_2	20	4/20			
		J_9	W	45°	4									
267		J_1	W	45	-4									
	4 lost	J_1	C	45	2					23	4/72			
270		B_1	B	45	2									
					slickensides on faces of broken core					72				
273	1½ lost													
277														
	2 lost				coal					34/60				
280														
288	2 ft lost													
290														

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET 1 OF 34 HOLE No. 440

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
~~290~~						
293	1.5' lost	B_3	B	85	4	
297	1.5' lost					
~~300~~ 301					ssk common.	
307		B_3	C	-		
~~310~~		B_1	B	45	3	
		J_1	C	5	2	
		B_2	B	65	2	
		B_3	C	-		
		J_1	B	45	1	
317		B_1	B	45	1	
		B_3	C	85		
		B_3	C	90	1	
		B_3	B	80	1	
~~320~~						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
293			R_1	0				
297			R_1	0				
301			R_1	0				
			R_2	30/30				
307				112/120				
			R_3		7/120			
317			R_4					

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET 8 OF 34 HOLE No. 440

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	FRACTURES	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
326		J1	W	40	2						15 10 5			
		J4	W	40	9									
		B3	C	75	1				R4	110/120	5/120			
		B1	B	50	2									
		J1	W	30	1									
327		B3	-	-	3									
		B1	B	50	3									
330														
		J4	W	20	9				R3	109/120	4/120			
		J2	W	20	1									
		J1	W	20	1									
		B2	B.W.	25	2									
337														
340		J2	W	45	1									
		J1	W	45	2									
		B1	B	45	6					78/120	9/120			
		B3	C	85										
		J1	B	45	1									
347		B3	C	85										
		B3	C	80	1									
350		B1	B	40	2									

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET 9 OF 34 HOLE No. 480

NOTE: These are the new Golder forms to be used.

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
350	nil	J_2	C	80	1					
		J_2	W	25	1					
		B_3	C	85				10/120	4/20	
		B_1	B	45	3					
		B_2	C	65	3					
357		J_2	C	0						
	nil	B_3	C	75	1					
		B_1	B	45	8					
360		B_2	B	50	4			105/120	8/120	
		B_3	C	75	2					
		B_2	B	60	1					
367										
	Nil lost	B_2	C	65	2					
370		B_1	B	40	6			62/120	7/120	
		J_2	B	45						
		B_2	B	40						

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Golder Associates

Hole No. 440
SHEET 10 OF 34

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 15 10 5	PERMEABILITY
		B_1	3	50	1						
		B_4	B	50	4						
377											
		B_1	B	55	2						
380		B_2	B	55	2						
		J_2	M	40	2						
		J_1	W	40	2				100/120	7/120	
		J_4	~~W~~	40	1						
		J_4	W	15	5						
		B_1	B	55	3						
387											
		B_2	C	60	2						
		B_1	B	45	1	sck.					
		B_3	C	85	1						
390											
		B_1	B	50	4				100/120	5/120	
		J_2	C	40	2						
		B_2	C	65	2						
397		B_3	–	–							
		J_2	W	40	1						
		B_1	B	45	2						
400											

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Golder Associates

Hole No. 440

SHEET 11 OF 34

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
400										
		B_3	C	80	2			115/120	7/120	
		B_4	W	45	1					
		B_1	B	45	5					
407		B_3	C	85	2					
		J_2	C	50	1					
		B_1	B	55	3					
410		B_2	B	55	1			111/120	6/120	
		B_3	C	85						
		J_2	C	50	1					
		B_2	B	55	2					
		B_1	B	55	3					
		J_2	W	40	1					
417		B_1	B	50	2			107/120	11/20	
420										
		B_2	B	50	3					
		B_1	B	50	7					

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Golder Associates

Hole No. 440

SHEET 12 OF 34

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		PERMEABILITY
		J	W	40	2								
		J_4	W	40	2								
427													
		J_2	C	40	2								
430													
		B_1	B	45	4					114/120			
		B_2	B	45	2								
		B_3	C	–									
		J_1	C	40	2								
		B_2	B	60	2								
		B_3	C	50	2								
437													
		B_1	B	45	1								
440													
		J_1	C	40	1					102/120	4/120		
		B_3	C	70									
		B_2	B	45	4								
		J_2	C	40									
		B_1	B	45	2								
447													
		J_2	W	40	2								
450		B_4	B	50	7								

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Golder Associates

Hole No. 440

SHEET 13 OF 34

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
450		B_2	B	80	4						
		B_1	B	50	2				80/120		
	6" lost										
		J_4	C	40	1						
		B_3	C	85	1						
		B_3	C	80	6				4/12		
460	1.5' lost					coal					
463											
	6" lost	B_1	B	50	4	coal			10/12	4/12	
		B_2	B	75	9						
468											
470									47/120	?	
	1' lost	B_2	B	65		occasional sch					
		~~B_1~~									
		J_1	B	30	2						

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Golder Associates

Hole No. 440

SHEET 14 OF 34

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	PERMEABILITY
478	5% 95%	B_3	B	80	7			0	0?	
480		B_2	B	65	3					
	1½ lost	B_2	B	55	3			34/84	8?	
		B_3	C	80	4					
487										
490	6% lost	B_3	C	85				14/20	3/120	
		B_1	B	45	3 ssk					
		J_1	B	15	1					
		B_1	B	45	2 ssk					
		B_3	C	80	4					
		J_2	B	35	2					
		J_1	C	5	2					
497	nil	B_3	C	55	4					
		B_1	B	45						
500										

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Golder Associates

Hole No. 440

SHEET 15 OF 34

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	PERMEABILITY
500	69%	J_2	B	65	7			68/120	3/120	
		J_2	B	70	3					
		B_1	B	45	2 sdc					
507		J_2	W	35	2					
		B_3	C	85	4			89/120		
510		J_2	W	35					2/120	
		B_1	B	50						
		J_2	W	35	3					
		J_1	W	40	1					
		B_3	C	80	3					
517		B_3	C	85						
		J_2	C	35	4			114/120	7/120	
520		J_1	C	35	4					
		B_1	B	45						
		J_1	C	35						

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Golder Associates

Hole No. 440

SHEET 16 OF 34

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG (BRECCIA/SOUGE, BROKEN CORE)	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5	PERMEABILITY
		J_2	W	35	2					
		J	C	50	1					
527		B_4	C	85						
		B_1	B	45	2					
		B_3	C	80	2			45/60	2/60	
	mil	B_2	B	55	1					
530		B_1	B	55	2					
		J_2	W	35	1					
532										
		B_3	C	85	7					
	mil							30/60	1/60	
		B_1	B	50	1					
		B_3	C	85	3					
537		B_2	B	65	3					
		B_3	C	80	2					
		B_1	B	55	3					
		B_3	C	80				96/120	3/120	
540		B_2	B	55						
	mil	B_3	C	—	2					
		B_3	C	80	5					
547										
	mil	B_3	C	85	8					
550		B_1	B	45	1					

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Hole No. 440

SHEET 17 OF 34

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	1' mil	J_1	B	85	2						
		B_3	C	85	2				38	3	
		B_2	B	50	2				126	120	
		B_3	C	85	3						
557		B_3	C	85	2						
		B_2	B	55	5						
		B_1	B	50							
560		B_3	C	80	8				120	4 / 120	
		B_2	B	50	2	small amount broken core					
	6' lost	J_1	B	75		ssk					
		B_1	B	50	1	ssk small amount broken core					
567		B_1	C	40	2						
		B_3	C	80							
		B_2	B	50	3				70 / 120	9 / 120	
570	1' lost	B_1	B	50	1						
		J_1	C	50	5						
		J_4	C	50	4						
		B_1	C	50	1						
		J_2	W	50	2f						

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Golder Associates

Hole No. 440

SHEET 18 OF 34

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
		B_2	B	60						
577										
					coal					
580	2.5' lost	J_1	B	55	3			27/120	120 (3 broken core)	
		B_2	B	55	3					
		B_1	B	55						
		B_3	C	-	5					
587										
		B_3	C	60	4			32/120	3/72	
	1' lost	B_1	B	55	3					
590		B_2	B	65	2					
593		B_3	C	-	2					
		B_3	C	55						
		B_1	B	55	2				8/108	
	1' lost	B_3	C	65	3			42/108		
		J_1	C	40	3					
		B_1	B	50	3					
600										

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Golder Associates

Hole No. 440

SHEET 19 OF 34

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
		B_3	C	–	3					
		B_2	B	55	3 small amount broken core					
602	1/4 lost	B_2	B	60	3			4/60	0	
		B_3	C	80	3					
607		B_1	B	55°	-8 – coal seams ½"			68/120	8/20	
		B_3	C	90°	-10					
		B_4	B	55°	10					
610	nil	J_4	W	50°						
		J_2	B	50°	3					
617		B_3	C	85°	-11			87/120	3/20	
		J_1	(K)	50°	-3					
620	nil									
		J_4	W	20°	2					
625										

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PROJECT No. _____

Golder Associates

Hole No. 440

SHEET 20 OF 34

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
		B_3	C	85-90	-9					
								105/120	0/20	
630	Nil									
		J_4	W	15°	-2					
		J_2	C	12	-3					
		J_2	C	55°	-3					
635		J_1	W	35°	- 170° to bedding					
		B_2	C	55	-8					
		J_2	B	28°	4			113/120	4/20	
					B9 - 55°					
640	Nil	J_4	W	55°						
645		B_1	B	54	-3					
	4"/130							102/130		
		J_2	C	40°	-8					
					B9-68°					
650		J_4	W	32°	-4					

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Golder Associates

Hole No. 440

SHEET 21 OF 34

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
		B_2	B	60°	-170° to Joints							
	NIL											
655.5												
		B_1	B	88°	-4 } minor coal seams							
		B_9	B	65°	8							
		J_4	C	20°	-4					113/120	4/120	
660	NIL											
		J_2	C	90°	-2							
		J_4	C	90°	-2							
					B9 - 60° @ 180° to J_2							
665.5												
		B_1	B	50°	-12 } minor coal seams							
		B_4	B	50°	-17							
		B_3	B	90	-5					81/114	14/120	
670		J_1	W	60	180° to Bedding							
	NIL	J_4	W	60	-4							
675		J_1	(K)	16°	-1 60° to long axis of face							

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Golder Associates

Hole No. 440

SHEET 22 OF 34

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
		B_3	C	87°	-9	B9-50°		50/84	0	
	9/84	B_2	C	55°	-5					
680										
682		J_1	(K)	18°		(K) 40° to long face of J_1				
		B_3	C	80-90	25			26/120	10/120	
	0/120									
		J_1	(K)	50°	-9					
		B_1	B	50°	-1					
690										
692		J_1	(K)	60°	-2					
		B_2	C	55°	-7			45/60	6/60	
	2/60	B_4	(K)	55°	-1					
		B_3	C	90°	-1					
		J_1	W	30°	-3					
		J_4	W	30°	-2					
697		B_3	C	90						
	NIL	B_2	B	60						
700										

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Golder Associates

Hole No. 440

SHEET 23 OF 34

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 10 5)	PERMEABILITY
		J_1	W	40	3				82/120	10/120	
		J_2	W	40	3						
		J_4	W	40	7						
		B_1	B	60	7						
		B_2	B	60	4						
						small amount broken core					
707		B_3	C	90							
		B_1	B	60	2						
		B_2	B	60							
		J_1	B	5	2	ssk 10° from ⊥ with core long axis			40/96	5/96	
710						small amount broken core					
		J_4	W	20	6						
		B_1	B	60							
		B_2	C	60	5						
		J_2	C	40	2	small amount broken core					
		B_3	C	–	3						
715		B_3	C	–	2						
		J_1	B	35	2						
		J_1	W	20	1				41/72	5/72	
		B_2	B	55	1						
720		B_2	B	60	3						
		J_1	B	0	2	ssk 10° from ⊥ with long axis					
721		B_3	C	–	2						
	nil	J_1	B	0	2	some ssk.					

LOGGED BY: AS

DATE: 26/10/74

PROJECT No.

Golder Associates

Hole No. 440

SHEET 24 OF 34

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 (15 10 5)	PERMEABILITY
	nil	B_1	B	60	6	sck ~ parallel to stroke.			77/120	10/120	
		B_2	B	60	3						
		J_6	3	25	6						
		J_1	3	20	1						
		B_2	B	60	5						
730		B_1	B	60							
731		B_2	B	65	3						
		B_3	C	80							
	nil	B_1	B	55	3				93/120	6/120	
		B_2	B	55	4						
		J_2	C	45	2						
		~~J~~		~~10~~							
		J_4	3	20	12						
		J_1	3	10	1						
740		J_1	3	0	2						
		B_3	C	85	2						
741		B_3	C	85							
		B_2	C	50	2				57/60	0/60	
		B_3	C	85	2						
	nil	B_2	B	50							
		B_3	C	85	2						
746		B_3	C	85							
	1 ft lost	J_1	B	0							
		B_1	B	60	2				10/108	12/108	
		B_3	C	88	6						
750		B_1	B	60							

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 440

SHEET 5 OF 34

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
					small amount broken core					
		J_1	B	0	2					
					broken core					
		B_2	B	60						
		B_3	C	85	3					
		B_1	B	60	4					
		J_1	C	55	2					
757	1 ft 60%	B_3	C	–	2			2/36	2/36	
		B_1	B	60	2					
		B_3	C	–						
760	2 ft 0%	B_1	B	60	2			8/36	2/36	
		B_2	B	60	1					
		B_3	B	–	1					
763	3½ ft 0%	B_3	B	–	1					
		B_2	B	60	2					
		B_3	B	–	1					
767	3 ft 0%	J_1	B	10	1	set 10° from ∥ with longaxis				
770		B_1	B	60	3					
		B_2	B	60						
		J_2	B	50						
774										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 26 OF 34

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 (15 10 5)	PERMEABILITY
	1.9 ft / 10%										
777		B_1	B	60	3				67/120	11/120	
		B_2	B	60	2						
		J_1	B	25							
	6" lost	B_1	B	60	8						
		B_2	B	60	2						
		J_1	B	45	2						
		B_2	B	60	3						
		B_3	B	85							
787		B_1	B	60	5				17/24	5/24	
		B_2	B	60	2						
		J_2	C	40							
789		B_2	B	60	3						
		B_1	B	60	2						
		B_3	B	80	2				74/96	6/96	
		B_1	B	60							
		J_4	B	10	1						
		B_2	B	60	2						
		B_1	B	60							
		J_1	B	40	2						
		B_3	C	85	1						
797		J_1	W	45							
		B_2	B	60							
		J_2	C	40							

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 440

SHEET 21 OF 34

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 (15 10 5)	PERMEABILITY
800	nil	B_2	B	60					110/120	6/120	
		J_1	W	40	3						
		J_2	C	40							
		B_2	B	60							
		J_1	B	35	2						
		B_2	B	60							
807	nil	B_3	C	85	2				68/96	7/96	
		B_2	B	60	2						
		J_1	B	45							
		B_2	B	60							
810		J_1	B	40							
		B_2	B	60							
		B_1	B	50							
		J_1	W	5	3						
		B_1	B	50							
		B_3	C	85	3						
		J_2	C	40	1						
815	nil	B_3	C	45	2				38/60	2/60	
		B_1	B	45	1						
		B_2	B	45							
		J_2	W	40							
		J_1	W	40							
		B_3	C	85							
		B_2	B	45							
		B_3	C	85	2						
820	1.5 ft lost	J_1	C	40					30/84	10/84	
		B_2	B	60	2						
		B_2	B	55	4						
		J_1	W	25	8	ssk 10° from ⊥ with langacis					

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 440

SHEET 4 OF 34

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 (15 10 5)	PERMEABILITY
		B_1	B	60							
		B_3	C	–							
		B_2	B	55	2						
		J	C	35	2				36	7	
		B_1	B	60	3				72	72	
830		J_1	C	40	2						
		B_3	C	–							
		B_2	C	55	2						
		J_2	C	15	2						
		J_2	C	40							
		J_1	C	40	2						
		B_1	B	60	2	broken core					
		J_2	C	40					89	9	
	nil								120	20	
		B_1	B	60	2						
840		B_2	B	60	2						
		B_1	B	60	3	smooth surfaces.					
		B_3	C	85	2						
		B_2	C	60							
843		B_2	B	60	2				33	5	
		B_1	B	60					48	48	
		B_2	B	60	2						
	nil	B_1	B	60	4						
847											
		B_2	B	60							
		B_4	B	60	2						
		B_1	B	60	3						
850											

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 440

SHEET ~~28~~ 29 OF 34

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
850		B_2	B	60	2
		B_1	B	60	2
		B_2	B	60	3
		B_3	C	90	3
		B_1	B	60	3 ssk // to longaxis of face, curved.
		B_3	B	90	
		B_2	B	65	4
857		B_2	B	55	
		B_3	C	85	2
		B_1	B	60	3
860	3 ft lost	B_1	B	65	6
		J_1	B	40	2
		B_1	B	60	2
		B_2	B	60	2
866		B_2	B	60	4
870	2 ft lost	J_1	B	45	2
		B_1	B	60	5 ssk // to long axis of face
874					

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION (75 50 25): 85/120; 30/108; 13/108

NATURAL FRACTURE FREQUENCY (15 105): 8/120; 13/108

PERMEABILITY

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 440

SHEET 30 OF 34

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 (15 10 5)	PERMEABILITY
		B_1	B	60	2 ssk // to long axis					
		J_1	B	15	2 ssk 70 to core axis			5/72	7/72	
		B_2	B	60	10					
880		B_1	B	60	3 smooth surfaces curved.					
		B_1	B	60						
		B_2	B	60	4			20/72	3/72	
		B_3	B	85	3					
		J_2	B	50						
		B_3	B	85	2					
		B_2	B	60	4					
		B_2	B	60	2					
		B_3	C	85	small alongside barrel core					
887		B_1	B	60	2					
		B_2	B	60	3					
		B_1	B	60	3					
		B_1	B	65	ssk 10° from ⊥ to long axis					
890		J_1	B	80	ssk multiple			63/120	13/120	
		B_1	B	60						
		B_2	C	60	4					
		B_1	B	60	3					
		B_2	B	60	2					
		J_1	B	45	4					
		B_4	B	85	multiple					
		B_2	B	65	3					
		B_3	C	90						
897		B_3	C	–	2				0	
		B_3	C	85						
		B_2	C	70	2					
900										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 440

SHEET 30 OF 34

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 (15 10 5)	PERMEABILITY
900		4								
		3								
		B_2	C	60				117/120	0	
	nil	B_2	C	70	3 curved.					
		B_2	C	60	3					
		B_2	C	75	2 curved.					
907		B_3	C	85						
		J_1	B	75	smooth surface.					
910		B_1	B	60	5 smooth surface			114/120	8/120	
	nil	J_1	B	75						
		B_1	B	60						
		B_2	C	curved						
		B_3	C	80						
		B_2	C	50						
917		B_3	C	80						
		B_3	C	80						
		B_1	B	70	2					
920		B_4	B	65	6			95/120	6/120	
		B_2	B	70	4					
	nil	B_2	B	60	2					
		B_1	B	60						
		J_2	C	45						
		B_2	C	85						
		B_2	B	60						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 460

SHEET 32 OF 34

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 (15 10 5)	PERMEABILITY
		B_1	B	60	3					
		B_2	B	60	2					
		B_3	C	80						
		B_4	B	60						
927		B_3	B	60	3					
		B_4	B	60	2					
		B_1	B	60	4					
930		B_1	B	60	2					
		B_1	B	60	3					
		J_1	C	50				96/120	14/120	
		J_2	C	50						
		B_2	B	60						
		B_2	B	50						
		J_2	B	50						
		B_1	B	50	4					
937		B_3	C	80						
		J_2	C	50						
		B_2	B	55	2					
940		J_2	C	45				97/120	9/120	
		B_2	B	50						
		B_1	B	45	curved surface					
		B_1	B	50						
		J_1	C	55						
		B_1	B	60	3					
		B_2	B	60	2					
		J_1	C	55						
		B_2	C	60	2					
		B_1	B	60	2					
947		B_2	C	60	~~60~~					
		B_2	C	60	2					
950										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 440

SHEET 32 OF 38

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
~~950~~		B_1	B	60	3			110/120	6/120	
		J_2	C	40						
		B_2	B	60	2					
		B_3	C	85						
		B_2	B	60						
		B_1	B	60	3					
		J_2	C	40	1 ssk 10 from ‖ with long axis					
957										
					END 440					
960										
970										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 440

SHEET 34 OF 34

K- FORDING 76(3)A-2

319

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	PERMEABILITY
64	15/30							5/29		
66		B_2	C	87°	B_2 - A			31/44	5/44	
70								9/10	2/2	
71		B_2	C	87°	B_2 - B			32/32	0/72	
77	100%							35/48	1/48	
		J_1	Q	35°	½" thick					
		B_2	C	80°	"					
81		B_1	C	70°	- SLK'					
		B_4	C	90°						
		B_2	C	90°	B_2 - B .					
85										

LOGGED BY: ABC

DATE: Oct 1

PROJECT No.

Golder Associates

Hole No. 441

SHEET 1 OF 37

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
85	24	J_1	W	12°	J_1 - 3			23/24	1/24	
					B9 @ 86' is 70°					
87		J_2	C	40°						
88½ 89										
		J_1	W	0°				71/96	9/96	
		J_2	T	10°	J_2 - 4					
		B_2	C	85°	B_2 - 9					
					B9 at 92' is 73°					
97	22/30	J_1	C	28°				5/30		
		B_2	C	87°	B_2 - 3					
					99.6 - 112.4 coal					

LOGGED BY: RSC
DATE: Oct 2/76
PROJECT No.

Golder Associates

Hole No. 941
SHEET 2 OF 37

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
114		B_2	C	60°	B_2 - 10
119		B_2	C	80°	B_2 - 5
		J_1	C	11°	
123		B_2	C	85°	B_2 - 4
		B_1	C	90°	
		B_2 B_1	B	83°	B_1 - 3
		B_2	C	80°	B_2 - 4
127		J_1	C	45	
		B_1	B	75°	
128		J_1	C	12°	
		B_2	C	90°	B_2 - 5
130		B_1	W	85°	B_1 - 8
		J_1	C	12°	J_1 - 2 B_g 85°
		J_1	W	10°	(134) ssk at 75°, W. B_g 76°

GRAPHIC LOG: BRECCIA/GOUGE ▩ BROKEN CORE ▨

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25): 43/79; 22/48; 59/84; 5/13; 0/2; 57/72

NATURAL FRACTURE FREQUENCY (15 10 5): 7/29; 3/48; 11/84; 3/12; 13/72

PERMEABILITY

LOGGED BY: A.S.
DATE: 7/10/76
PROJECT No.

Golder Associates

Hole No. 141
SHEET 3 OF 37

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
35										
134		B_1	B	85°	B_1 - 11					
		B_2	C		B_2 - 4					
		S								
		J_1	C	20°					2 / 72	
143		B_2	C	90	B_2 - 10			18 / 36	12 / 36	
		B_2	W	90						
45		J_1	W	10	J_1 - 3					
146		J_1	C	10	J_1 - 1					
		B_2	B·M	80				48 / 120	6 / 12	
		B_2	C	80	B_2 - 10					
50										
					B_9 - 70°					
155		J_1	C	70°	J_1 - 4					
156.5										
		B_1	B	80						

LOGGED BY: A.S.

DATE:

PROJECT No.

Golder Associates

Hole No. 441

SHEET 4 OF 37

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
		B_3	C		B_3-2						
		B_2	C	75-85	B_2-13				66/72	6/72	
		J_1	C	65°	J_1-7						
167		B_2	C	80°	B_2-16	B_9-73°					
		J_8	W	20°	J_8-3				77/120	3/120	
						B_9-80°					
177	10%	J_9	W	8°	J_9-2				81/120	3/120	
		B_2	C	90°	B_2-20	~~B_9~~ B_9-75°					

LOGGED BY: A.S.
DATE: 2/10/76
PROJECT No.

Golder Associates

Hole No. 44 1
SHEET 5 OF 37

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
18.75					4-8 inch Coal						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 6 OF ____

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
210.5		B_2	C	63°	B_2 - 7			23/54	2/54		
		J_1	W	12°	J_1 - 2						
215		B_2	C	85°	B_2 - 6						
		J_9	40°	40	- opp directions			39/48	2/48		
		J_1	C	15°	J_1 - 2						
					218' bedding 70°						
219		B_1	A	85°	B_1 - 2						
		B_2	B	85°	B_2 - 10			81/96	1/96		
		J_1	C	16°							
					223' B9 = 80°						
					226' B9 = 80°						
227		B_2	C	75°	B_2 - 10						
					230' B9 = 70°			120/120	2/120		
		J_1	C 35	20	- opp directions						
		J_9	W	20°							

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 7 OF 37

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		PERMEABILITY
235											
237											
		B_2	C	74°	B_2-18 (B_3?)						
		B_1	B	72°	B_1 - 3 B9 72°						
242	0 %							82/120		4/120	
		J_4	W	25°	J_4 - 2 245' B9 = 70°						
		B_2	B	78°							
247											
		B_1	B	66°							
250		B_2	C	80°	B_2-14 B.9 = 66°					5/120	
		J_4	W	10°	252' B9 ~ 58°			84/120			
	0 %										
257		J_1	C	45°							
		B_2	C	75	B_2-5			51/60		3/60	
		B_1	C	65	B_1-2						
260											

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 8 OF 37

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
260										
262		B_2	C	85	B_2 10			9/60	10/60	
	0									
264		B_2	C	30	B_2 7					
		B_1	B	70	coal B_1 - 9				9/120	
270	0							76/120		
274		B_2	B	83	B_2 - 9 B_2 - 376					
276	0							88/120	2/120	
		B_1	C	83						
		J_1	C	32						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 9 OF 37

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
285					B_9 - 85°						
287		B_2	B	85°	B_2 - 19						
290											
	0							71/120	3/120		
		J_1	C	5°							
					B_9 - 75°						
297		B_2	C	85							
					B_9 - 80			70/120	4/120		
	0										
		J_1	C	12							
305											
					B_9 - 85						
307											

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 10 OF 37

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		PERMEABILITY
304											
306		B_1	B	80	B_1 - 4						
		J_1	W	15							
		B_2	B	70	B_2 - 6	B_g - 85°			7/100		
		B_2	M	80				96			
	D							83/100			
		J_1	C	45	J_1 - 3						
		B_2	C	60	B_2 - 3						
316						B_g - 65°					
318		B_1	C	70	B_1 - 4	B_g 70°					
320		B_2	C	85	B_2 - 7				6/120		
		J_1	C	15	J_1 - 2			117/120			
						B_g 70°					
324		B_4									

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 11 OF 37

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		PERMEABILITY
320											
330		B_2	C	60	B_2 - 9			91/120	6/120		
		B_1	B	70	B_1 - 4						
		J_1	C	35	J_1 - 2						
		J_1	C	25							
340		J_1	C	35	J_1 - 2						
					coal			coal average size 2½"			
350					coal						

B_3 70

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 941

SHEET 12 OF 37

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
35					coal						
		J_1	B		J_1 - 5.						
					coal			average 2-7 inches.			
356											
359											
360		B_2	C	75	B_2 - 10						
								67/96	3/96		
		B_1	B	85	B_1 - 2						
		B_1	B	75							
364		B_2	C	75	B_2 - 2						
		J_1	C	45	J_1 - 2						
370	J	J_4	C	30							
		B_2	C	40	B_2 - 7			76/120	6/102		
		B_1	B	75	B_1 - 4						
					B_9 - 70°						
374											

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 13 OF 37

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
377.		B_2	C	85	-10			92/120	3/120	
		B_1	C	85	-B					
		B_2	C	85	-7					
		J_2	C	60						
		J_1	C	60	B_9-65°					
387	18/36							12/36	1/96	
		B_2	C	90°	B_2-3					
	36/96							19/96		
397					B_9-85°					
400	0%	B_2	C	83°	B_2-6					

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 14 OF 37

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
400		J_1	W	5°	J_1-4			84/120	5/120		
407											
410		B_1	B	70°	½" coal seams - 6						
		J_4	W	25°	⅜" wide						
		J_2	C	27°	J_2-2				8/120		
		B_2	C	85°	-9						
					415' several minor coal seams in mudst.			81/120			
417		B_2	B	75°	B_2-5						
	70%	B_4	B	90°	B_4-3 coal seams ¼" NO breaks in core			47/60	13/60		
420		B_1	C	85°	B_1-3 B_9 85°						
422		J_4	B	15°				41/59			
		B_2	W	85°	¼-½" coal seams 7						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 94 1

SHEET 15 OF 37

7 B1

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
425	0%	B_2 / J_4	B / ~~B~~	83 / 13°	B_2 - 6 @ 424' Coal					11 in good core.		
430		B_4	B	80°	1/4" coal seams unbroken core. 5							
432	have 43" in 120"	B_2	B	83°	B_2 - 3 core loss due to misalign				32/48 most of core in large pieces	2		
		B_3	C	~~B~~	B_3 - 6 - due to core grinding; inclin. & footages unsure.							
440					B_4 - 90°							
442		B_1	B	62°	B_1 - 7 mon minor coal seams				45/60	7/60		
		B_4	B	62°	B_4 - 13 " " " unbroken							
447		B_2	C	85°	B_2 - 2				27/30			
	loss 8'/10'	B_2	B	70°	B_2 - 3							
450												

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 16 OF 37

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		B_1	B	85°	B_1 - 9 Coal Seams in weak zones				13/60	9/60	
		B_9	B	80-90	Coal seams NOT BROKEN numerous B_9 - 449' 66° 455 80°				29/31	2/32	
457											
460									91/120	6/120	
	0%				B_9 90						
		J_1 J_1 J_9	W C W	5° 30° 30°	} perpendicular to each other.						
467											
470		B_2	C	85-90°	B_2 - 19				62/120		
		J_1	C	8°	continuous from core 469 - 473.5' ; well defined jointing thru this core					15/120	
475											

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 491

SHEET 17 OF 37

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
475										
477		B_2	C	80°	B_2-14					
		B_4	W	70°				90/20	6/20	
480	0%									
487		J_1	C	6°	J_1-2 Pyrite lenses in broken zone 3" thick					
		B_2	C	85°	B_2-1					
490		B_1	B	80°	- organic seams 4			110/20	4/120	
	lost 3"	B_3	BC	80°						
					B_9 75°					
497		B_4	B	80°	B_4-4					
500										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 18 OF 37

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
		B_1	B	70	B_1 - 7						
		~~B_1~~	~~A~~								
		J_1	C	4							
		Ja	B	10	J_4 - 4			89/120	9/120		
	0	B_4	B	70	B_4 - 4						
		B_1	A	70							
507											
507		B_1	B	75							
	30	B_2	C	75	B_2 - 6			19/36	1/36		
		B_3	—	—							
510											
1 ft lost		B_1	B	70	B_1 - 3						
		B_2	B	75	B_2 5			113/120			
		J_1	B	20					9/120		
		B_1	B	75	B_1 - 7			97/120	8/120		
	0	B_2	W	40							

LOGGED BY: _____

DATE: 5/10/86

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 19 OF 37

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		PERMEABILITY
	0	J_1	C	10							
		B_2	C	80	B_2 - 5						
530.6											
		B_2	C	80	B_2 - 10						
		B_1	B	75	B_1 - 3						
		B_1	W	75				99 / 120		5 / 120	
		J_1	C	10	- J_1 2						
		J_4	W	30	- J_4 - 3						
540.6		B_3	-	-	B_3 - 2						
		B_2	C	80°	B_2 - 8						
	6" loss	B_1	B	80°	B_1 - 4			98 / 132		4 / 132	
		J_4	B	90°	J_4 - 5						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 20 OF 37

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		PERMEABILITY
551		B_3	–	–	B_3 – 3						
		B_2	C	80	B_2 – 13			37/72		2/72	
		J_4	W	10	J_4 – 2						
		B_1	B	85	B_1 – 2						
554											
		B_3	–	–	B_3 – 2						
		B_2	C	80	B_2 – 8			95/120		3/120	
		B_1	B	80	B_1 3						
		J_3	C	–							
56.4											
		B_2	C	45	B_2 – 8						
40	D	B_1	B	80	B_1 – 7			100/120		7/120	

LOGGED BY: _____

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PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 21 OF 37

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
575											
577	11/2'	B_3	-	-	B_3 - 2			5/24			
579		B_2	C	85	B_2 - 2						
580	11/8'				Coal			21/96			
								average 5/3 2"			
585											
587		J_1	C	10							
590	4/10'							average 5/7 42"			
					coal						
	11/4'							15/48			
600											

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 22 OF 37

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
600					
601	1.4/6	B_1	B	70	B_1 - 6
		B_2	C	85	
		J_1	C	10	
607	1'/6.6'	J_1	C	10	
613.6					
615		B_1	B	75	B_1 15
		B_2	C	65	B_2 - 2
620		J_1	C	20	
		J_4	W	12	J_4 - 2

GRAPHIC LOG: BRECCIA/GOUGE ■ BROKEN CORE ▨

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25): 29/42; 84/120

NATURAL FRACTURE FREQUENCY: 6/72; 17/120

PERMEABILITY

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 13 OF 37

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	PERMEABILITY
6		B_3	-	-	2.					
		B_2	C&B	75	8					
	0	B_1	B	65	5			83/120	6/120	
633		J_1	B	15						
	D	J_1	B	70	8.			89/120	6/120	
		B_2	C	80	14					
		J_4	W	10	3					
		J_1	B	80	2					
644		B_3	-	-						
		~~B_1~~	~~B~~	~~75~~						
643		B_1	B	75	2					
	6" loss	J_4	W	15	2			28/48	2/48	
		B_3	-	-						
647										
6										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 441

SHEET 14 OF 37

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
		B_1	B	80	4								
		B_2	C	85	5								
	0	J_1	C	25	3			3	58 / 102	7 / 102			
		J_4	W	10	2								
	655.5	B_4	W	10									
		J_1	B	50	1					12 / 120			
		B_1	B	80	11			2	79 / 120				
	6	B_2	C+B	80	11								
	655.5	J_4	B+M	15									
		B_1	B	75	5			2	66 / 96	5 / 96			
		B_2	C+B	85	13								
		B_3	-	-	2								
	653.5	J		30									
	10 ft loss	B		75									
		J_4		10				1					

core to 6" average 2"

cool

GEO BY _____ DATE 7/10/Mo

SHEET 5 OF 7 HOLE No. 441

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
680	6" loss				coal — chunk size average 2"			1					
683.6													
					coal — largest 17" average < 4"			1	36/90				
691													
					coal — largest 12" average < 4"			R1	86/96				
		B1	B	80	4								
		B2	C+B	75	4			R3		4/48			
699													
	6" loss	B1	B	80	2								
		B1	C	75	6			R3	86/108				
		B2	C	85						7/108			
		d1	B	5	1								
708													

GGED BY _____ DATE 7/10/76

COLDER ASSOCIATES

SHEET 1 of 2 HOLE No. 4A

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR POOR FAIR GOOD EXCEL. 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
710		B_2	C	80	6								
	0	B_1	B	80	2			R5	94/108	2/108			
717		B_1	B	80	3								
720		B_2	C	80	4			R4	113/120	4/120			
	0	J_1	C	10									
727		B_1	B	85	4								
		B_2	B	85	3			R4	112/120				
		B_2	C	85						6/120			
		B_2	B	65	2								
		B_1	B	65	2								
		J_4	W	10	2								
737		B_3											

GGED BY _____ DATE 7/10/76 GOLDER ASSOCIATES SHEET 17 OF 37 HOLE No. 441

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
~~340~~	0	B_2	C	80	7								
		B_1	C	80	4				102/120				
		J_1		20									
~~347~~		B_1	B	85	10								
		J_1	C	10	1								
	0	B_2	C	85	9				85/120	15/120			
		B_2	B	65	1			R4					
		B_1	C	85	7								
~~357~~													
~~357~~		B_2	B	80	2				106/120	14/1			
	0	B_1	B	80	8			R4		8/120			
~~367~~		B_2	C	85	2								
~~367~~	1 X X X	B_1	B	80	4			R4 + R2	167/48	5/48			
		B_2	B	85	3								

LOGGED BY _____ DATE 7/10/76 COLDER ASSOCIATES SHEET 26 OF 37 HOLE No. 441

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
770		J1	B	60		
		B1	B	80°	-8	
		B2	C	85°	2	
		B2	B	85°	-5	
		J1	B	35°	-2	
		J1	B	45°		
		J4	W	5°	1/4" wide	
780					7 798-784 coal, crumpled.	79
781	8/24					81
783		B1	B	85°	-3	83
	Nil	J1	B	63°	-2	84
787	18/84	B4				
		B4	B	75°	3 - 1/2" coal seams	
		B1	C	90°	-10	
790		J1	B	42°	-2	
794		B4	B	70°	1/4" coal seam.	94
		B2	B	72°	-6	95.5
		B2	C	85°	-2	
	Nil	B3	C	90°		
800						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
770			R1					
					10/20			
			R2	61/120				
			R2					
780								
781								
783			S1					
			R2	35/36	9/36			
787								
			R2½	32/84	9/84			
790								
794								
			R3	29/72	7/72			
800								

LOGGED BY _____ DATE _____

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
800													
	Nil	B_2	C	90	-7								
		B_2	B	88	-2				109/120	7/120			
		B_1	C	90°	-6			R_3					
810		~~J_1~~			2			R_3					
	0	J_1	C	22	1								
		B_1	B	80	2			R_2	81/84	3/84			
		B_2	C	70	4								
		B_3	-	-	1								
817		J_4	C	22	15								
820		B_1	C	82	2								
	0	B_2	C	75	4			R_3	115/120	2/120			
		B_2	B	75	2								
827													
		B_1	B	85	3								
		B_2	C	80	7								

LOGGED BY [illegible] DATE _____ GOLDER ASSOCIATES SHEET 30 OF 37 HOLE No. 941

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
830	0	B_3	-	-	4
		J_4	W	10	
837					
		B_1	B	85	1
840	0%	B_2	C	60	1
		B_2	C	85	6
		B_3	-	-	1
		J_1	W	15	1
		J_4	W	15	5
847					
		B_3	-	-	3
850	8%	B_2	C	90	12
		B_1	C	80	1
		J_4	W	20	1
		J_4	W	0	1
857					
860					

ENGINEERING LOG

DEPTH	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
830		R_3	100/120	3/120			
837							
840		R_3	109/120	2/120			
847							
850		R_3	85/120	1/120			
857							
860							

GGED BY LG DATE 12/10/76

GOLDER ASSOCIATES

SHEET 31 OF 37 HOLE No. 441

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
860	0%	B_1	B	85	6 - 2 ssk							
		B_2	B	85	1							
		J_1	W	10	3		R_4	99/120	10/120			
		J_4	W	10	1							
		B_1	B	70	1							
		B_4	B	80	1							
867		B_1	B	62	3 ssk							
							R_4	92/120				
870		B_1	B	75	3							
		~~J_1~~	~~C~~	~~20~~	~~1~~				6/120			
		B_2	C	85	9							
		~~J_4~~	~~W~~	~~20~~	~~7~~							
877		J_1	C	20	1							
880		B_1	C	80	1							
		B_2	C	88	8		R_4	115/120	6/120			
		B_1	B	73	4							
887		J_4	W	20	7							
890												

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET 32 OF 37 HOLE No. 441

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
880		B1	B	85	3
		B2			2
	0%	J1	B	25	7
		J4	W	90	1
		B1	B	85	7
897					
		B2	C	85	12
		B1	B	75	10
900					
		B3	-	-	2
		B4	W	65	
	0%	J4	W	10	
907					
		B3	-	-	
		B1	C	80	1
910		B2	C	80	5
	0%	J1	W	20	3
		J4	W	20	8
917					
		J1	C	20	3
920		J4	W	15	3

ENGINEERING LOG

DEPTH	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
880–897		R4	104/120	11/120			
897–907		R3	76/120	10/120			
907–920		R4	117/120	4/120			

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GOLDER ASSOCIATES

SHEET 33 OF 37 HOLE No. 441

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
920		B_1	B	80	10
		B_4	W	40	1
		B_2	B	80	3
	0%				
925		B_2	C	80	5
927					
		B_1	C	70	2
930					
		B_2	C	80	8
	0%	J_1	C	5	2
937					
		B_1	B	70	8
		B_1	B	70	2
940					
		B_2	C	85	8
	4%	B_2	C	70	3
					coal average size < 3"
947					
949.5	0%				coal
950					

ENGINEERING LOG

DEPTH	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
920–925		R_5	98/120	13/120			
927–930			104/120				
930–937		R_3		4/120			
937–940			54/120				
940–947		R_3		6/120			
947–949.5		S_2					
949.5–950		S_2					

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GOLDER ASSOCIATES

SHEET 34 OF 37 HOLE No. 941

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS
950	6" lost				
957					average size <2"
960	1 ft lost				coal
965					
970	2 ft lost				
973.5					
979	3 ft lost				

ENGINEERING LOG

DEPTH	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL. 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
950									
957									
960									
965									
970									
973.5									
979				R1					

GGED BY [illegible] DATE 13/10/76

GOLDER ASSOCIATES

SHEET 35 OF 37 HOLE No. 441

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
980	24 / 105					
983	24 / 105	B1	B	65	3 ssk	
	24 / 105	B2	C	85	1	
987		B1	B	80	6	
		B2	B	80	3	
990	0%	B2	C	80	2	
		B2	C	70	1	
		J1	W	10	1	
997		J1	W	30	3	
		J1	W	40	2	
1000	0%	B2	C	80	3	
		B2	B	80	2	
1007		B1	B	85	3	
1010		B2	B	85	3	

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
980								
983				10/48	3/48			
			R2					
987				104	1			
990			R2	120	120			
997								
1000			R4	116/120	5/120			
1007								
1010								

GGED BY 5 DATE 13/10/76

GOLDER ASSOCIATES

SHEET 36 OF 37 HOLE No. 441

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
1010	0%	B1	C	70	2				R4	105/120	10/120			
		B2	C	70	2									
		J1	W	25	5									
		J4	W	10	1									
1017					end hole.									

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GOLDER ASSOCIATES

SHEET 37 OF 37 HOLE No. 441

K. FORDING 76(3) A-2

319

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 4)	PERMEABILITY
95					0-99' tricone			17/108		
		B_3	C		B_3 9 odd angles (inconsist.)					
100		B_2	C	70°	B_2-7					
	5'/105' / 108'	J_1	C	5°	J_1-2			7/108		
									3/60"	
		J_4	W	20°	- stylolites					
108										
	0%	B_3	C	80°	B9-60°			48/48	1/48"	
110		J_1	C	75°						
		J_4	W	58°	J_4-4					
112		B_2	B	70°	B_2-6 B9-65°					
		B_2	C	60°	B_2-4			35/60	6/60"	
	0%	J_1	F	28°	J_1-3					
117		B_2	B	85°	B_2-4			28/36	2/36	
120					B9-78°					

LOGGED BY: RS

DATE: Oct / 70

PROJECT No.

Golder Associates

Hole No. 442

SHEET 1 OF 33

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
120	6/72				Coal; 2-3" pieces					
123										
	0%				Coal 2-3" pieces					
130										
131	12"/48									
					Broken core <3" pieces Fe oxide present. consistancy of mud			0		
135										
		J, F		30°	J, - 2					
		B2	B	60°	B2-6			38/48	4/48	
					B9-75°					
140		B2	B	74°	B-6					
	8"/60"				B9-75			36/60	4/60"	

LOGGED BY: FSC
DATE: Oct /76
PROJECT No.

Golder Associates

Hole No. 442
SHEET 2 OF 33

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
145					
146		J_1	F	7°	J_1 - 2
		B_2	B	77°	B_2 - 11
		B_2	C	80°	B_2 - 2
	3%				
0					B9-68°
152					
		B_2	B	85°	B_2-10
		J_1	F	10°	J_1-3
		J_9	B	33°	
	0%				
158					
		B_2	B	80°	B_2-8
160		B_2	C	83°	-6
		J_1	F	24°	-6
	0	J_9	F	20°	-9
					B9-77°
168					
170					

GRAPHIC LOG — BRECCIA/GOUGE ■ BROKEN CORE ▨

HARDNESS (4 3 2)

ROCK QUALITY DESIGNATION (75 50 25): 35/72; 99/72; 88/120

NATURAL FRACTURE FREQUENCY (15 10 5): 13/72; 6/72; 11/120

PERMEABILITY

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 442

SHEET 3 OF 33

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
130		J1	F	25°	B2 2					
		J1	B	40°				62/120	10/20	
	7"	B2	B	86°	-12					
		J4	C	10°						
138		B2	B	80°	6.					
140		J4	W	35°	1					
		B2	C	90°	5					
	NIL	B4	B	70					5/120	
								75/120		
188					B9 @ 78°					
190					B9 @ 75°					
	NIL									

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 442

SHEET 4 OF 33

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 15 10 5	PERMEABILITY
195		B2	B	58°	→3 B9 @ 75°					
		B2	C	80°	→9		3½	63/120	3/120	
198										
200		JA	W	12°	B9 @ 68°					
		B2	C	75°	-7	N4	3½	104/120	1/120	
	NIL									
					B9 @ 78°					
208										
		B2	C	80°	-7					
	5/120"									
		B2	B	78°	-5		3	87/120	6/120	
218										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 442

SHEET 5 OF 33

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
120		B_2	C	80°	-6						
		B_1	C	85°	-13						
	6"/108"	J1	C	26°	-1						
227											
230											
	90				90% Less than 4"						
					COAL						
240											

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 442

SHEET 6 OF 33

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
10										
20					Coal mostly crumpled.					
252					252'					
		B_1	B	90°						
	6" / 20"	B_4	B	90°	coal seams ~ 1/8"			35" / 60	6 / 60	
		J_1	C	34°	-2					
70		B_2	B	85°	-6					
262		B_2	C	90°	4			4/13"	15 / 30	
		J_1	C	58°	-2					
	18" / 108	B_1	C	90°	-6			52 / 108	6 / 108	
		J_4	W	5°	-1					
280		B_2	B	85°	-3	B9 -70°				

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 442

SHEET 7 OF 33

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
270					
	0	J_1	C	10°	-4
		B_2	C	85	-3
		B_1	C	85	-4
278					
280		J_4	W	10°	½" wide
281		B_2	C	85	4
	1	B_1	C	80	1
		J_1	W	5	1
		J_4	W	10	
		J_4	C	30	
		B_3	-	-	
288					
290		B_1	C	70	1
		J_4	W	10	4
		J_1	W	10	
	0	B_2	C	80	5
296					
300					

ENGINEERING LOG

DEPTH	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS
270								
				R_4	45/72	3/72		
278				R_4				
280					2/24	5/24		
281								
				R_3	56/120	2/84		
288								
290								
				R_3	21/9	2/96		
296								
300								

GGED BY _____ DATE _____

GEOLOGIC LOG								ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY	~~DOUBLE SHEAR~~	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
300	6"	J_4	W	10	2								
		B_1	B	80	2								
		J_1	W	10	1				65	3			
		B_4	B	80				R3	120	120			
		B_2	C	85	15								
306		J_4	B	25	7								
		J_1	C	30	1								
	D	B_2	C	85	9			R3	13 / 84	4 / 39			
		B_3	-	-									
		B_1	B	85	3								
313													
	1' lost												
318	6"	J_1	B	45	3			R3	6 / 24	3 / 24			
320		B_4	C	75	3								
		B_1	B	75	3								
		J_1	C	5									
		J_4	W	5					84 / 96				
	D	J_1	C	10				R3		9 / 96			
		J_4	W	10									
		B_1	B/M	80	3								
		B_2	C	85	4								
		J_1	C	30									
328								R3					

LOGGED BY _____ DATE _____

SHEET 9 OF 33

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS
330		J1	W	20°	-2
		B2	C	85°	-8
	NIL				
					B9 - 85°
338					
		B2	C	85°	-6
340		J1	C	30°	3
		J1	C	30°	
	NIL	J4	C	30°	1
					Some calcite veining thru core parallel to axis
					B9 - 85°
348	6/60	J4	C	8°	-2
350		J	C	5°	- BREAKAGE DUE TO BAD
353		B1	C	80	Jointing & B1's
		B2	C	78°	-10
	6"/120	J4	W	5°	-5
					B9-78°
360		B1	B	80°	6

ENGINEERING LOG

DEPTH	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS
330				R2	109/120	2/20		
338				R3				
340				R3	105/120	4/20		
				R3				
348					24/24			
350				R 2½				
				R 2½	67/90	7/90		
360								

LOGGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET 10 OF 33 HOLE No. 442

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
360					B9-70°	
362	18" / 89	J,	W	5°	BROKEN RK. Badly FRACTURED @ N5°. BREAKS // to bedding all FRESH - pieces ~2-3" long.	
370						
	-Nil-	J,	W	5°	5	
		J,	C	30°	-3	
		B,	B	86°	-13	
		B2	C	85°	-3	
378	29 / 36	J,	C	10°		
380						
381					Coal 5-6" pieces	
	18 / 72					
387					Coal	
390						

ENGINEERING LOG

GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
			R 2½		16 10 5			
			R 2½					
			R2	41 / 96	2 / 96			
			R2	0/36				
			R 1.0					

SHEET 11 OF 33 HOLE No. 442

LOGGED BY DATE

GOLDER ASSOCIATES

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PH FORMATION MATERIAL
390					Coal - 3-5" pieces								
400													
403	12"/108	J1	A	8°	-2	403							
		B1	C	90°	-11								
		B3	C	60°	-2			R3	66/108	V2/84			
		J1	A & W	9°	-3	B.9 - 70°							
410		J2	C	0°	1			R3					
		B1	B	90°	2 - ½" coal seam								
412		B1	C	87°	-5					8/30			
	36/120	B1	B	82°	-3				38/120				
					Breakage due to coal seams & soft rk.	414.5							
					Coal	417.6		R1					
420						419.3							

broken along major joints

SHEET 12 OF 33 HOLE No. 442

DATE 12/10/86

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
420		J,	C	5°	-3 Breakage due to joints & ground core
422		J,	A	10°	-1 @ 45° to one another
		B,	C	85°	-4 B9-90°
		B3	C	90°	-7 Badly ground core from 422-430 ground core edges
	18/96	J,	C	5°	-2
		B4	B	70°	1" coal seam
430		B2	C	85°	-5
		B2	B	75°	-80° Broken on Carbon. partings
		J,	C	22°	
	6"/120	J,	C	6°	
		B2	B	80°	-6
440					Coal 438–444, 2-4" pieces
441	18/96				
		B,	B	75°	-9
		B4	B	75	-7 - Coal seams Minor
		B2	B	80	-2
448					
450					

ENGINEERING LOG

DEPTH	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY (15 10 6)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
422				R2	51/96	9/96			
				R3					
432				R2					
				R2		10/96			
438					47/120				
				R1					
				R2	17/48	9/48			
448									

LOGGED BY [illegible] DATE 12/10/76

SHEET 12 OF 22

GEOLOGIC LOG						ENGINEERING LOG						
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
450	Nil	B_2 B_1 J_1	C B W	90° -7 90° -2 12°	B9 - 75°		$R3\frac{1}{2}$	103/120	9/120			
458					B9 - 80°		$R3\frac{1}{2}$					
460	18°/89	B_1	C	85° -12					12/84			
465		B_2	B	80°			R3	55/84				
470	Nil	B_2 B_2 J_1 J_4	B C C W/O	85° -7 85° -5 12° 5° - sub // to J_1 -2	B9 - 85°		R3	110/120	5/120			
475							R3					
480	6/120	B_2	B	80° -9/10	B9 - 85°		$R3\frac{1}{2}$	106/120	6/120			

GGED BY _____ DATE 12/10/26

GOLDER ASSOCIATES

SHEET 14 OF 33 HOLE No. 442

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
480													
		B_1	C	85°	-2								
485								R2					
	15/120	B_2	B	70°	-4				24/38	21/38			
		B_2	B	83°	-2		488.4	R2					
490						Coal 1"-24" Pieces; 488.4 / 499.2		R1					
		B_2	B	75°	-4			R2	17/21	2/21			
496		B_1	B	75°	-6						all fractures within 496-497		
		J_4	C	0°	-2	B9 - 90°				6/120			
		B_2	C	85°	-7			R2					
500	NIL								107/120				
								R2					
506		J_1	C	8°									
		B_2	C	80°	-6								
	NIL	B_3	C	52°	-2	B9 - 64°		R4	109/120	2/120			
510													

LOGGED BY _____ DATE 12/6/76

GOLDER ASSOCIATES

SHEET 15 OF 33 HOLE No. 442

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
510		J_4	W	9°	-8								
	N/C	B_2	B	65°				R4					
516		J_1	W	5°	-2			R4					
		J_9	W	3°	-4 B9 - 70-75°			R2					
		B_1	C	85°	-11								
520	N/V	B_2	B	80°	-2			R2	109/120	11/120			
		J_1	W	8°	-1			R4					
		J_9	W	8°	-1 B9 - 77°								
526													
		B_1	C	85	-1								
530		B_2	C	80°-85°	-8			R4	93/120	4/120			
	N/V	B_2	B	85°	-2								
		J_3	C	20°				R4					
536	18/132	B_2	B	70°	-13								
		B_1	C	85-90°				R3	66/132				
540													

GGED BY RC DATE Oct 13/76

GOLDER ASSOCIATES

SHEET 16 OF 33 HOLE No. 442

GEOLOGIC LOG							ENGINEERING LOG						
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
540		J1	W	8°				R3		14/120			
		J4	W	6°	-3 B9 -83°								
		B2	B	85°				R4					
547		B2	B	78°	-3								
	3"/60°	B4	B	70°	- ¼" coal seam				34/60	5/60			
550		B1	C	85-70°	-5			R3					
552		B1	B	74	-5 - along minor coal seams								
		B2	B	75°					102/120	12/20			
		B1	C	85	-4			R3					
		B4	B	75°	-4								
	NIL	J1	C	16	-2								
560								R3					
562													
		B1	B	70	-75° -6								
		B4	B	75°	-3				91/120				
		B2	C	85°	-4			R3		14/120			
	NIL	J1	W	6°	-3								
570		B2	C	80-85°	-5								

LOGGED BY [illegible] DATE 13/10/76

GOLDER ASSOCIATES

SHEET 17 OF 33 HOLE No. 442

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
570	NIL								R3					
572		B_2	B	80-85°	-B									
		J_1	C	0°										
		J_1	C	10°					D	8/20	20			
	NIL								R2					
580									R3					
					B9-80°									
582		J_4	C	25°	-2									
		B_2	B	80°	-6					16/20				
		B_2	C	80°	-4				R2					
	NIL	B_1	B	80°	B9-83°						21/20			
590		B_1	C	85°	-1" seam.									
592		J_4	C	25°	2									
		B_4	B	80°	-2									
		B_1	B	75°	-2 - ¼" coal seam.									
		J_1	C	40°	5 B9-85°				R3	93/120	8/120			
	NIL	B_2	C	82°	-6									
		J_4	W	10°	2									
		B_3	C	-	3	598.5			R3					
600						600								

GGED BY _____ DATE 13/10/76

GOLDER ASSOCIATES

SHEET 18 OF 33 HOLE No. 942

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
600												
602		B_2	B	85°	4		R3					
		B_2	C	85	3 129-85°							
	9/120	J_1	C	6°	-3		R3	89/120	7/120			
		J_4	C	7°	-2							
610												
612		J_1	B	10°								
		J_1	C	13°	-4		R2	25/34	3/34			
		J_4	C	10°	-1							
	5/72	B_2	C	87°								
618					BROKEN DUE TO BAD FRACTURES 3-5" fragments of core.							
620		B_1	B	17°	4- Coal seams.							
	2"/120	B_2	B	65°			R2	69/84	14/84			
		B_1	C	90°	-9							
628		J_1	C	28								
630												

LOGGED BY _____ DATE 19/10/76

GOLDER ASSOCIATES

SHEET 19 OF 33 HOLE No. 442

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
630	36/120	B_2	C	85	90° -10	
		J/B	C	22°		
		J,	C	2°	-2	
638		B_4	B	75°	-3 - 1" & 4" coal seams.	636.5
		B_1	B	85°	-3	
640	38/120				COAL	
648					Crumbled broken.	
650	18/60					
653						
	6/60				3-5" pieces.	
658						658
660						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
630			$R2\frac{1}{2}$	52/02	6/102			
638			R_1					
640								
648			R_1					
650								
653								
			R_1					
658								
660								

LOGGED BY _____ DATE 19/10/76

GOLDER ASSOCIATES

SHEET 20 OF 33 HOLE No. 442

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
660	4/120	B_1	B	75-85°	-21			R_2	66/120	24/120			
		B_4	B	75-85°	- innumerable small ¼" coal seam interbeds								
		J_4	W	6°	-1 B9 -78°								
668		B_4	B	70°	-5			R_3					
		B_1	B	70°	-3								
		B_2	C	70°	-2 B9.-85°								
670	5/120	B_2	C	80-85	-8			R_4	110/120	1/120			
		B_1	C	80°	-1								
		J_4	W	6°	B9..85°								
678		B_2	B	80-85°	-12			R_3					
680	NIL	B_2	C	80-85°	-3			R_3	85/120	10/120			
		B_1	B	75°	5- along minor coal seams								
688	NIL	J_1	C	15-20°	-5								
690													

LOGGED BY RSC DATE 19/10/76

GOLDER ASSOCIATES

SHEET #21 OF 33 HOLE No. 442

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
690		B_2	B	72°	-11 - SKL on 2	
		B_1	B	70°	-4 - coal seams	
	NIL	B_4	B	70°	-2	
		J_1	C	22°	4	
		J_1	C	12°	4	22° 12° ~45° to each other
		J_4	C	12°		
698		B_3	C	90°	-2	
700	NIL	B_2	B	78°	-2	
		B_1	B	72°	-½" coal seam.	
702		B_3	C	75°		
		B_2	B	75 80°	-12	
		B_2	B	78°	-8 } coal seams.	
	4"/120	B_4	B	75°	-8	
		B_3	C	75°	-2	709
					Broken Due to soft core & drilling 1-2" pieces	710
710						711
712	15/132				Coal - 3-5" pieces good core - vitrain	
					Coal	
720						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR FRACTURE FREQ (15 10 5)	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
690		R_3	98/120		12/20		
		R_2					
698							
700		R_3	45 48	48			
702							
		R_2	48/120	8/20			
710							
712		R_1					
720							

LOGGED BY _____ DATE 8/10/76

GOLDER ASSOCIATES

SHEET 22 OF 33 HOLE No. 442

GEOLOGIC LOG						ENGINEERING LOG						
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
720											15 10 5			
723					Coal, mostly vitrain 3-5" pieces				R1					
	NIL													
730									R1					
733					coal reduced to consistancy of mud.				S1					
	30/20	B1	B	70°	-6" coal seam.	736.7								
740		B2	C	85°	-5				R3	66/78	1/78			
					B9 - 75 @ 742 90° @ 742.5									
743		B1	B	85°	-4 coal seams									
		B2	B	70-80°	-5 - very shiney				R2					
		B4	B	80-85	- innumerable coal seams					93/120	9/120			
	NIL													
750		B2	C	80-85°	-6 B9 750'-80°				R3½					

GGED BY _____ DATE 18/10/76

GOLDER ASSOCIATES

SHEET 23 OF 33 HOLE No. 442

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
750	NIL	Jq	W	0°	3						16 10 6			
753		J1	C	3°	-3									
		B2	B	80°	-5									
		B2	C	80°	-3									
	NIL	Jq	W	12°	3 B9-80°				R3	112/120	3/120			
760														
763									R3					
		B2	B	85-90°	-7									
	NIL	B1	B	82°	-2 - minor coal									
		Bq	B	80°	-1					112/120	3/120			
		B2	C	85°	-2				R2½					
770														
773														
		B2	C	82°	-13°				R2½					
	NIL	B1	C	82°	-4					109/120	5/120			
		Bq	C	80°	-4 - areas of weak bedding B9-81°									
780		J1	W	11°	-2				R4					

GGED BY _____ DATE 18/10/76

GOLDER ASSOCIATES

SHEET 24 OF 33 HOLE No. 442

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
780												
783		B_2	B	78-82 -5	B9 - 74°		R4					
		B_1	C	78 -4								
	N/L	B_4	C	78 -3				55/60	4/60			
		B_2	B	78°	SKN SIDED		R4					
788		J_1	W	6°								
790												
		B_2	B	75-80° -3	intensive jointing in 2 directions @ 90° to each other.							
		J_1	W	6° -7								
		J_4	W	12° -6								
		B_2	C	80° -2		792	R4	83/120	13/120			
	N/C	J_4	W	6½ 12° -5								
798							R4					
		B_2	B	71° -5	B9 - 72°							
800	4/84	J_1	B	25° -4	SKN. at 75° on joint face		R4					
		J_4	C	10°				49/84				
		J_1	B	10° -3					8/84			
					FAULT? SKN intense jointing & Bedding fract.							
805		~~J_1~~	~~B~~	~~25°~~			R2½					
	8/120	J_4	C	10° - 2 perp. direct.	10° 10°							
		B_2	B	75-80° -11				63/120	7/120			
		~~B_1~~	~~B~~	~~90°~~ ~~-5~~			R3					
		J_1	B	80° -2								
810												

GGED BY _____ DATE 18/10/76

GOLDER ASSOCIATES

SHEET 25 OF 33 HOLE No. 442

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG (FAULT, BROKEN CORE, WATER LOSS, CEMENT)	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
810		B,	B	80° -5	due to minor coal seams	813	R3		15 10 5			
815												
	NIL	B,	B	70° -5			R3	109/120	5/20			
		B4	B	lenses - minor coal seams -9								
820		B2	B	75° -6								
		J,	C	0°			R3					
		J4	C	0°								
825												
		B2	B	75-80° -6			R3	102/120	1/120			
		J2	B	45° -3								
830	NIL											
		B2	C	85° -9			R3½					
835												
	NIL	B3	C	80	B9-70°		R3½	18/48	1/48			
		J	C	40°								
839		J4	W	10°								
840												

GGED BY _____ DATE 18/10/76

GOLDER ASSOCIATES

SHEET 26 OF 33 HOLE No. 442

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
840	3/108	B_2	C	85°	-2	
		J_4	W	11°	-2	
		J_1	C	23°	3	
848		J_1	W	11°	-4	} at 90° to each other
		J_3	C	48°	-	
850		B_2	C	76°	-3	B 9-28°
	NIL	B_2	B	73°	-3	- slkn. - perpend. to dip on Bedding surface.
		J_1	C	4°	-2	853.5 – 854.5
					B 9.-65°	
		J_4	C	5°	-2	
858		B_3	C	90°		
		J_4	C	0°	-4	
860		J_1	B	50°	-3	B 9-75°
	NIL	B_2	B	65°	-3	862 – 863.5
		J_1	C	10°		
		J_4	W	10°	-2	
		B_1	B	70°	-2	
868						
870						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
840			$R3\frac{1}{2}$	100/108	7/108			
848			$R3\frac{1}{2}$					
850			$R3$	109/120	5/120			
858			$R2\frac{1}{2}$					
860			$R3\frac{1}{2}$	105/120	9/120			
868								
870								

GGED BY _____ DATE 18/10/76

GOLDER ASSOCIATES

SHEET 27 OF 33 HOLE No. 442

GEOLOGIC LOG							ENGINEERING LOG						
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
	NIL	B_2 J_1	C W	83° 0°	-8 -3			R½	98/120	3/120			
878		B_2 ~~B_1~~ B_2	B ~~B~~ C	85° ~~85°~~ 70	-2 ~~-2~~ -6			R½					
	NIL	B_1 J_1 J_4	B W W	70 0° 0°	-11			R4	94/120	4/120			
888		B_4 J_4 J_4 B_1	C C W B	irreg. - lots. 7° 0° 70 & 90 - breaks along irreg. dist. minor coal seams (¼")	-17			R4					
	NIL	B_4 J_1 B_3	B W C	irreg.; innumerable from 884-894 4° 85°	-2			R4	97/120	19/120			
898	195/168	J_4 J_1	C C	13° 13	B-9 - 87°			R4	17/168	N/A			

GGED BY _____ DATE 19/10/76

GOLDER ASSOCIATES

SHEET 28 OF 33 HOLE No. 442

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR POOR FAIR GOOD EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
900					N/A. lost core due to ~~core-lock~~			R4	Not applicable lost core	N/A.			
					Core tube not latching — all breaks are B_3, drill ground.			R4					
912	21/24		N/A		lost core				0/24 N/A	N/A			
914													
	NIL	B_2	C	80	-2			R3	114/120	0/120			
920													
		B_2	B	65°	-3			R4					
924													
	NIL	B_2 B_1 B_4 J_4	B B B W	70-75° 75° 70° 20°	-11 6 -11 -4			R4	85/120	6/120			
930					- minor coal seams								

GGED BY _____ DATE 21/12/76

GOLDER ASSOCIATES

SHEET 29 OF 33 HOLE No. 442

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR POOR FAIR GOOD EXCEL) (25 50 75 90)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
930								R4					
	NIL							R3½					
		B_3	C	85	-3								
934		J_1	W	37°									
		J_4	W	8°	-2								
		B_3	C	90°	3			R3					
		B_2	B	75°	SKN. @ 90° to dip of bedding surface i.e. irreg. bedding				111/120	3/20			
	NIL	B_2	B	65-80°	-9			R4					
		B_1	B	78°	-2 B-9 - 74°								
								R3					
		J_4	W	8°	2								
944		J_4	W	6°	3								
		B_3	C	85°									
	NIL	J_1	W	5°	2 (K) parallel to dip				97/120	10/120			
		B_2	C	85°	-2			R3					
		B_2	B	75°	-8 B9 - 68°								
50													
		B_1	(K)	75°	6			R3					
		B_1	B	78°	-2								
954		B_2	B	78°	-7 B-9 irregular								
	6/120 5%	J_4	W	5°					103/120	0/120			
		B_2	C	87°	-7			R3					
960													

GGED BY _____ DATE 21/10/76

GOLDER ASSOCIATES

SHEET 30 OF 33 HOLE No. 142

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
96						
964		B_2	C	80	3	
	NIL	B_2	B	80°	-3	
970		J_1	(k)	25°	(k) at 3° down dip face	
974		B_1	13	75°	-13 - minor coal seams & fractures in coal	
	42/120	B_1	B	80°	B9 80°	
980					break due to numerous bedding & drill induced	
984		B_1	B	70°	-46	
	12/120	J_1	B	40°	-3	
99						

971.7

Coal 1-2" pieces

~3" pieces

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
96								
964			R3		0			
970			R2½	8/120	19/120			
974			R2½					
980			R1	9/120	N/A			
984					40 30 20 ~40%			
99			R1	16/120	49/120			

GGED BY _____ DATE 22/10/76

GOLDER ASSOCIATES

SHEET 31 OF 33 HOLE No. 947

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
99					B 9 - 75°	
994					Coal	
	90/120	B_3		90°	drill induced breakage	
100						
					Mostly 1-2" pieces	
1004						
	11/120	B_2	B	72°	-12	
		B_2	C	75	2	
					B 9 - 74°	
1010		J_1	W	45	-2	
		J_4	W	45	-3	
		J_2	C	5°	-1	
1014						
	8/120	B_2	C	72°	-4	
		B_1	B	70°	- coal seam - -1	
		B_3		78°		
		J_4	W	45°	3	
1020		J_1	(C)	25°	-2 45° dip on joint face	

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL. 25 50 75 90)	FRACTURE FREQUENCY (40 30 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
99								
994			R_1					
			R_1	0/120	N/A			
100								
			R_1					
1004					15 10 5			
			R_2	84/120	2/120			
1010								
			R_2					
1014								
			R_3	69/120	6/120			
1020								

LOGGED BY _____ DATE 22/10/76

GOLDER ASSOCIATES

SHEET 32 OF 33 HOLE No. 142

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (15 10 5)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
20		B_2	B	20°	-3				R_2					
1024														
30														

GGED BY [illegible] DATE 22/10/76

GOLDER ASSOCIATES

SHEET 33 OF 33 HOLE No. 442

K-FORDING 76(3)A-2

319

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
0					TRICONE					
12	1ft lost	B_1	F	70	2			62/108	5/108	
		B_2	B	70	4					
		J_1	F	25						
		J_1	F	10						
		B_2	B	70	4					
		B_1	F	70						
		B_2	B	70	6					
20										
21		B_2	B	75	3			51/72	26/72	
		B_1	F	75	2					
		J_1	F	0						
		B_1	F	75	2					

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 1 OF 37

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 15 10 5	PERMEABILITY
		J1	F	0	10					
		J1	F	10	5					
		B1	F	75	6				35%	
27										
		J1	F	0	5					
		J1	F	10	5					
		B1	F	80	10					
		B2	B	80	3					
30									47	
		J1	F	40				42		
		J2	C	50				120	120	
		B1	F	75	2				40%	
		B2	B	75	2					
		J1	F	0	10					
		B1	F	75	7					
		J1	F	10	7					
		B2	B	75	2					
37										
		B2	B	75	2					
		J1	F	30	2					
40		B1	F	75	2			40	15	
		B2	B	75	2			90	90	
		J2	B	50						
		J1	F	0	5					
		B1	F	75	6					
		J2	C	50						
44.5										
		B3	C	90						
		B1	F	75						
		J1	F	25					7	
		B2	B	75				87	126	
								120		
		J1	F	10	2					
		J1	F	20						
50										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 2 OF 37

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
		B_2	B	75	4					
		B_1	B	75						
		J_1	F	45						
		B_2	B	75	5					
55										
		B_2	B	75	4					
		B_1	F	75	2					
		B_2	B	75	5			81/120	2/120	
60		J_2								
		J_2	W	25						
		B_2	B	80						
65		B_2	B	80	3					
		B_4	M	75				21/24	1/24	
67		B_1	B	80						
		B_2	B	70	5					
					Broken core ssk surfaces.					
70		J_2	C	50	2 ssk			78/96	0/96	
		J_1	C	15						
		B_2	B	75	5					
75										

LOGGED BY: _____

DATE: _____

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Golder Associates

Hole No. 444

SHEET 3 OF 37

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		PERMEABILITY
		B_2	B	75	4								
		B_1	B	75	1								
		B_2	B	75						105/120		4/120	
80													
		B_2	B	75	7								
		B_1	B	75	2								
		J_1	F	10									
85													
		B_1	F	75	4								
		J_1	F	10	3					20/48		9/48	
		B_2	B	75	3								
		J_2	F	10	2								
89													
90		J_1	F	10									
		B_1	B	75	3								
		B_2	B	75	10					75		3/96	
		J_1	F	10									
97													
		B_2	B	75	2								
100													

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 4 OF 32

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
	nil	B_4	F	75				108/120	9/120		
		B_2	B	75							
		B_1	F	75	3						
		J_1	F	10	2						
		B_1	F	70							
		B_1	F+B	75	2						
		B_2	B	75	2						
107											
110	9 ft lost	B_2	B	75	6			5/120	7		
117		J_1	B	25							
120	5 ft lost	J_1	B	25							

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Golder Associates

Hole No. 444

SHEET 5 OF 37

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	PERMEABILITY
127										
	1" lost	multiple		B_3						
129										
130	mil	B_1	B	80	5					
		B_2	B	80	10			8/48	10/48	
		J_1	C	5						
		B_2	B	75	3					
	1" lost	B_2	B	75	5					
	mil	J_1	B	45						
		B_2	B	75	2			17/48	1/48	
		J_2	B	45						
137		J_2	B_1	15						
		~~B_2~~	~~B~~	~~75~~	~~5~~					
140										
	mil	~~J_1~~	~~B~~	~~45~~						
		B_3	C	90	2			91/120	4/120	
		J_1	F	10	2					
		B_1	B	75	2					
		B_2	B	75	4					
147		J_1	F	25	2					
		B_2	B	75	3					
		B_1	B	75	1					

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Golder Associates

Hole No. 444

SHEET 6 OF 37

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		PERMEABILITY
150		B_2	B	75	3								
		B_3	C	90									
		J_2	C	20						62/120	52/120		
		B_3	C	90									
		J_1	C	25	2								
		B_2	B	75	4								
157													
		B_3	C	90									
		B_2	B	75	3								
160										49/84	0		
		B_2	B	75									
		B_3	C	90									
		J_2	B	60	3								
		B_2	B	75									
		J_2	C	10									
164		B_3	C	90	2								
		B_2	B	75	2								
		J_2	B	60	3								
		B_2	B	75	3								
									67	49			
		J_2	C	40							2/26		
		B_2	B	75	3					67/126			
		J_2	W	20									
		B_2	B	75	4								
		J_1	C	5	2								
		B_3	C	90									
		B_2	B	80	4								
174.6		J_2	C	5	3								

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Golder Associates

Hole No. 444

SHEET 7 OF 37

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
		J_2	W	05	
		B_1	B	75	4
		B_4	M	80	2
		B_1	B	80	
		B_2	B	80	5
180		J_1	C	5	2
	nil	B_2	B	80	4
		J_1	C	5	
183					
		J_1	C	D	multiple
185		B_2	B	80	
		J_1	C	5	2
		B_2	B	80	2
		J_1	C	5	
	nil	B_3	C	90	3
190		B_1	B	75	3
		B_2	B	75	2
		J_1	B	30	2
		B_2	B	75	8
		B_1	B	75	
195					
	nil	B_2	B	75	3
197		B_4	M	75	
	nil	J_2	B & M	30	2

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

NATURAL FRACTURE FREQUENCY

PERMEABILITY

63/144

8/114

50/120

9/120

18/24

0

LOGGED BY: _____

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Golder Associates

Hole No. 444

SHEET 4 OF 37

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 15 10 5		PERMEABILITY
200													
	nil	B_2	B	80	5					93/120	30		
		J_2	W	10									
		B_2	C	80	5								
207													
	nil	B_1	B	80						87/120	4/120		
		B_2	B	80									
		B_2	B	75	2								
		B_2	B	85	3								
		B_3	C	90									
		B_1	B	80									
		B_2	B	85	3								
		B_1	B	85	2								
		B_2	B	85	2								
		B_3	C	90									
217													
	nil									84/96	0		
		B_2	C	70	2								
		B_2	B	75	3								
		J_2	C	5									
225		B_2	C	90									

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Golder Associates

Hole No. 44 4

SHEET 9 OF 37

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		PERMEABILITY
226												
		B_2	B	75	8							
									103/120	0		
230	nil											
		B_2	B	80	4							
		J_2	W	20								
		J_4	W	5	2							
235												
		B_2	B	75	10							
									99/120	0		
240	nil											
		J_2	W	20	3							
		J_4	W	5								
245												
		B_2	C	80	2							
	nil	B_1	B	75	2				107/120	2/120		
250		B_3	C	90								

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Golder Associates

Hole No. 444

SHEET 10 OF 77

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
250											
		B_2	C	80					102/120	2/120	
		B_3	C	90							
255											
		B_2	B	80	4				160/84	4/84	
260		J_1	C	5	3						
		B_2	C	90	3						
		B_3	C	80							
262		J_1	B	45							
		J_1	B	45					—	—	
		B_3	multiple								
	1.5 ft / 10 ft										
267											
		B_2	B	80							
		J_1	B	35							
270		B_1	B	80	6				5/72	3/72	
	1 ft / 10 ft	J_1	B	35	3						
		B_1	B	80	3						
		B_2	B	80	6						
		J_2	B	35							
273						Broken core					
		B_3				multiple			—	—	
275											

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PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 11 OF 37

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
	1 ft loss	J_1	B	35	3			D	—	
		B_1	B	80	5					
278										
		B_1	B	80						
280		J_1	B	35	2					
					broken core					
	2 ft loss	J_1	B	35	2			16/120	6/120	
		B_3	C	90	3					
					broken core					
		B_1	B	80						
					broken core					
288		B_2	B	85						
		J_1	B	30	2					
		J_1	B	35	2					
		B_2	B	80	5					
290										
		B_2	B	80	3			83/120	4/120	
		B_3	C	90						
		B_2	B	75						
		J_2	C	5						
297										
		B_1	B	80						
		B_2	B	80	4					
300										

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Golder Associates

Hole No. 444

SHEET 12 OF 37

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		PERMEABILITY
	nil	J_2	C	15					85/120	4/120		
		B_3	B	80	3							
		J_1	C	35								
		B_1	B	85	2							
		B_2	B	80	2							
307												
	nil	B_2	B	–		[illegible] angular			67/120	6/120		
		B_2	B	80	5							
310		J_2	C	30								
		J	C	45	3							
		B_2	B	80								
		B_2	B	80	3							
		B_3	C	90								
		J_2	C	30								
		B_2	B	80								
		B_3	C	90								
317	nil	B_2	B	80	2				80/120	4/120		
		B_1	B	80	3							
320		B_2	B	85	4							
		B_1	B	80								
		J_2	C	65								
		B_2	B	85	4							
325												

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Golder Associates

Hole No. 444

SHEET 13 OF 37

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		PERMEABILITY
327											
		B_3	C	90							
		B_2	B	85	3						
330		J_2	C	30							
		B_2	B	85	3			103/120	1/120		
	nil	B_1	B	80							
		B_2	B	85							
		B_3	C	90	3						
337											
		B_3	B	–	angular						
		B_2	B	70							
340		B_2	B	80							
		B_2	C	90	2			90/120	2/120		
		B_2	B	85	2						
	nil	J_2	W	5							
		J_1	C	35							
		J_2	O	5	2						
		J_4	C	5							
		B_3	C	90	2						
		B_1	B	85							
347		B_2	B	80							
		B_2	B	80	3						
350											

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Golder Associates

Hole No. 444

SHEET 14 OF 37

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		PERMEABILITY
350		J_2	B	65							
		B_2	C	80	4			113/120	1/120		
		B_1	C	80							
357		B_2	B	85							
		J_2	C	0							
		J_1	C	45							
360		B_2	B	80	2			76/120	6/120		
		B_2	B	75	2						
		B_1	B	75	2						
		B_2	B	75	2						
		B_2	B	75	3						
367		B_2	B	-	angular						
		B_2	C	80	3						
370		B_1	B	75	4			71	4/120		
		J_2	C	0							
		B_3	C	90	2						
		B_2	B	85	2						
		J_2	C	50							
		B_3	C	90							

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Golder Associates

Hole No. 444

SHEET 15 OF 22

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
		B_2	B	70	*					
		B_2	B	85	4					
		J_2	B	0						
377		J_4	W	0						
		B_2	B	70	2					
		B_1	B	70						
380		B_3	C	90				84/120	1/120	
		B_2	B	80	7					
		B_2	C	–	angular					
		B_3	C	90						
387		B_2	B	85	2					
		B_3	C	85						
390		B_2	B	80	2					
		J_2	C	30						
		B_3	C	85				86/120	1/120	
		J_2	C	30						
		B_1	C	80						
		J_2	C	30	2					
		B_3	C	90						
		B_2	B	85						
397		J_2	C	30						
		B_2	B	80	3					
		B_2	B	85	2					
400										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 16 OF 37

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
400		B_1	B	85						
		B_2	B	85						
		B_3	C	90				105/120	7/120	
		B_1	B	85						
		B_2	B	90						
407		B_2	B	80						
410		B_3	C	90				70/120	3/120	
		B_2	B	80						
		B_1	B	80						
		B_4	M	80						
		B_2	B	75						
		I_2	C	30						
		B_3	C	90						
		B_1	B	80						
		I_1	C	40						
417		B_1	B	80	change to NQ core					
		B_2	B	80						
420		I_1	C	7				56/120	11/120	
		B_1	B	80						
		B_1	B	80						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 19 OF 37

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
425		B_3	C	–	curved 3					
		B_3	B	85						
427		B_2	B	80						
		I_2	C	20						
		B_2	B	85				100/120	3/120	
430		B_3	C	~~curved~~ 75	curved 2					
		B_1	B	75	3					
		B_2	B	75						
		B_3	C	85	2					
437		B_2	B	75	6					
440								106/120	0/120	
		B_3	C	90						
		I_3	C	angular						
		B_3	C	90						
		B_2	B	75	3					
		I_2	C	0	2					
447										
		B_2	B	80	2					
450										

LOGGED BY: _____

Golder Associates

Hole No. 444

SHEET 18 OF 37

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 15 10 5	PERMEABILITY
450													
		B_3	C	90									
		J_2	C	30							74/120	3/120	
		B_1	B	80	3								
		B_2	B	80									
		B_3	C	90	9								
457		B_3	C	90	14								
		B_2	B	85								1/120	
460											92/120		
		B_2	B	85	2								
		B_1	B	85									
467		B_2	B	85	3							3/120	
470		B_2	B	85	5						100/120		

LOGGED BY: _____

Hole No. 444

SHEET 19 OF 37

Golder Associates

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	PERMEABILITY
		B_1	B	85	3						
		B_2	B	85	3						
477											
		B_3	C	90	9						
		B_2	B	85	2						
		B_2	C	85	4						
480		B_1	C	85							
	nil	B_3	C	90	2				65/120	1/120	
		B_2	C	85	7						
487		B_3	C	90	3						
		B_3	C	90	11						
		B_2	C	85	2						
		B_3	C	90	2						
490		B_2	C	80	5				10	0/108	
	nil	B_3	C	90	2				96/108		
		B_2	C	80	6						
		B_2	B	80	1						
		B_2	C	80	3						
496		B_2	B	80	3						
		B_3	C	90	3						
500											

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 20 OF 37

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	PERMEABILITY
500	nil	B_2	B	80	3			114/120	0/120	
		B_3	C	85	2					
		B_2	C	85						
506		J_2	C	20				43/120		
		B_2	B	75	3					
		B_3	C	90	3				0/120	
510	2 ft loss	B_2	B	75	13					
		B_3	C	90	8					
		J_2	C	20	2					
516		B_2	B	75	5			37		
		B_3	C	80	3				0/120	
		B_3	C	90	10					
520	nil	J_3	C	20						
					broken core					
		B_3	C	90	3					
		B_2	B	75	4					
		J_2	B	0	2					

LOGGED BY: AS
DATE: 8/12/76
PROJECT No.

Golder Associates

Hole No. 444
SHEET 21 OF 37

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
526										
	2 ft lost	B_2	B	80	multiple stem and run.			4/84	0/84	
		J_2	B	45	multiple					
530										
533										
	2 ft lost.	B_2	B	80	multiple			0		
		J_2	B	55	multiple					
539										
540										
	3 ft lost	J_2	B	55	multiple			0		
		B	B	80	multiple					
543										
	6" lost.	J_2	B	55	11			9/72	2/72	
		B_2	B	85	4					
		B_2	B	85	5					
549		J_1	B	70	2					
550		J_2	B	70	2					

LOGGED BY: _____

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Golder Associates

Hole No. 444

SHEET 22 OF 37

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	PERMEABILITY
550	1 pt lost	B_3	B	90	6				15/60	0/60	
		B_2	B	75	5						
554	1 pt lost	B_2	B	75					19/36	0	
		J_2	C	40							
		B_3	B	90							
		B_2	B	75	5						
557		J_2	C	10	5				67/120		
		B_1	B	75	2						
560		B_2	B	80	2					5/120	
	nil	B_2	B	75	2						
		B_1	B	75	3						
		B_2	B	75	4						
567		B_2	B	80	3				91/120		
570	nil	B_1	B	80	4					7/120	
		B_2	B	75	3						
		J_2	W	40							

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 23 OF 37

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	INFILLING	INCLINATION		DESCRIPTION AND REMARKS
		B_1	B	75	3	
		B_2	B	85	2	
577		B_3	C	90	4	
		B_1	C	75	3	
580		B_2	B	75	3	polished surfaces.
	nil	B_2	B	75	9	
587		B_2	B	75	3	
		B_1	B	80	3	
590		B_2	B	80		
	nil	B_1	B	80	3	
		B_2	B	80	6	
		B_3	C	90	2	
		B_2	B	80	4	
		J_2	B	45	4	
597		B_1	B	75	3	
		B_2	B	75	3	
		J_2	B	45		
600						

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

NATURAL FRACTURE FREQUENCY

PERMEABILITY

94/120

3/120

56/120

6/120

47/120

4/120

LOGGED BY: _____

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Golder Associates

Hole No. 444

SHEET 24 OF 37

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	PERMEABILITY
600		B_2	B	75	4			47		
		J_2	B	45						
					broken core					
	14% 100%								4/120	
		J_2	B	45						
		B_1	B	75						
		B_2	B	75	2					
		J_2	B	45	5					
607										
		J_2	B	45	9			0		
	15% 100%	B_2	B	75	4					
610										
		J_2	B	45				0		
		J_2	B	10	3					
		J_2	B	0						
	44% 100%	B_2	B	80	2					
		B_2	B	80	8					
616										
		B_2	B	75	2			61/120		
		J_2	B	45						
	14% 100%	J_2	W	0	2					
		B_2	B	80	7				5	
620										
623										
		B_2	B	85	4					
		J_2	B	25	2					

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Golder Associates

Hole No. 444

SHEET 25 OF 37

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		PERMEABILITY
625		J_1	B	45	3				104/120			
		B_2	B	75	2							
		J_2	W	45						3/120		
		B_2	B	75	4							
633		B_2	B	75	7				95/120			
		B_1	B	75	2					2/120		
		B_3	C	90	2							
		B_2	C	75								
		B_3	C	90	2							
		B_2	B	80	3							
643		B_2	C	80	4				95/120			
		B_2	B	80						0/120		
		J_2	B	45	polished							
650		B_2	C	85	3							

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Golder Associates

Hole No. 444

SHEET 26 OF 37

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		PERMEABILITY
	nil									0/120		
653												
	nil	B_2	C	85	3				48/48	0/48		
657		B_3	C	85	3				105			
	nil	B_2	C	85	4					0/120		
		B_3	C	90	2							
		B_2	B	85	2							
		J_2	C	10								
		B_2	B	85	2							
667		B_2	B	75	7				104			
										2/120		
	nil	B_4	C	80								
		B_2	B	85								
		B_2	B	75	3							

LOGGED BY: _____

DATE: _____

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Golder Associates

Hole No. 444

SHEET 27 OF 37

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		PERMEABILITY
		B_1	B	85								
677		B_3	C	90								
	nil								108			
		B_1	B	70	2							
		B_2	B	85	3					2/120		
~~677~~												
		B_2	B	80	2							
		B_2	B	75	3							
		B_2	B	75	2							
687	nil											
									84			
		B_1	B	75	2					4/120		
~~687~~												
		B_2	B	80	3							
		J_2	B	55	5							
		B_2	B	80	7							
		B_1	B	80	4							
697												
		B_1	B	80	2							
		B_2	B	80	5							

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DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 444

SHEET 28 OF 37

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		PERMEABILITY
		J_2	C	50				85/120			
		B_3	C	80	1						
		B_1	B	75					4/120		
		J_2	C	50	3						
		B_2	B	80							
		B_2	B	70							
		B_1	B	75							
		B_2	B	75	2						
		J_2	C	50	Polished 2						
707		B_3	C	90				90/120			
		B_2	B	85							
		B_2	B	75							
		B_1	B	75							
		B_1	B	85	2						
		J_2	C	50					4/120		
		B_2	B	70							
		B_1	B	75							
		B_2	B	80							
		B_3	C	90	3						
		B_2	B	75							
707		B_1	B	80				105/120	1/120		
		B_3	C	90							
		B_2	B	75	3						
		B_2	C	80	6						

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Golder Associates

Hole No. 444

SHEET 29 OF 37

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	PERMEABILITY
727										
		B_1	C	70	2			102/120		
		B_2	B	70	2					
		B_1	C	88					3/120	
		B_3	C	85						
		B_2	C	80	4					
737										
		B_3	C	85	5			108/120		
									0/120	
		B_2	C	80	2					
		B_2	C	85	2					
		B_2	B	80	2					
747		B_2	B	85						
		B_3	C	90						
		B_2	C	80	6					

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Golder Associates

Hole No. 444

SHEET 30 OF 37

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
		B_1	C	80	2				101	2/120		
		B_2	C	85								
		B_2	C	75	2							
		B_2	B	80								
		B_2	C	80	2							
		B_3	C	90								
757												
		B_2	C	75	2				101			
		B_2	C	75	8					0/120		
		B_3	C	90	4							
767												
		B_3	C	90	4				38		0	
		B_2	B	80	4							
771												
		B_2	B	80	4				50		0	
		J_2	B	50	2							

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Golder Associates

Hole No. 444

SHEET 31 OF 37

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
775		B_2	B	75	2					
776		J_2	B	55	4			86/120	1/20	
		B_2	B	80	2					
		J_2	B	60	2					
		B_1	B	80						
		B_2	B	85						
		J_2	B	60						
		B_2	B	80	3					
		J_2	B	55						
786								74/120		
		B_1	B	75						
		B_2	B	80	2				3/120	
		J_2	B	50						
		J_2	B	65						
	1ft lost	B_2	B	85	4					
		B_1	B	80	2					
		J_2	W	0						
		B_2	C	85	4					
797		B_2	C	85					0/120	
800										

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DATE: _____

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Golder Associates

Hole No. 444

SHEET 32 OF 37

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		PERMEABILITY
800		B_3	C	85						95	0/120		
		J_2	C	20	2								
		B_2	C	85	3								
		B_3	C	90									
		B_2	B	85									
807		B_1	C	80	2					71			
		B_2	C	80									
		J_2	W	20									
		B_2	C	80	2						2/120		
		J_2	C	40	4								
		B_2	C	80	2								
817		B_2	B	85	3					104	0/120		
		B_3	C	90									
		B_2	B	85	6								
		B_3	C	90									
826		B_3	C	90	4								

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Golder Associates

Hole No. 444

SHEET 33 OF 37

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		PERMEABILITY
825											
27											
		B_3	C	90	3			98/120			
		B_2	C	80	6				1/120		
		B_1	C	80							
		B_2	C	80	3						
		B_2	C	80							
837		J_2	W	5							
		B_1	B	80				120/120			
		B_2	B	80	4				3/120		
		B_1	B	80	2						
		B_3	C	90	2						
		B_2	B	80	8						
847											
		B_3	C	90	2				0/120		
850		B_2	B	80							

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Hole No. 444

SHEET 34 OF 37

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION		DESCRIPTION AND REMARKS	GRAPHIC LOG (BRECCIA/GOUSE, BROKEN CORE)	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY		PERMEABILITY
850		B_3	B	90	3				84/120	0/120		
		B_2	B	80	2							
	nil	B_3	C	90	8							
857		B_2	B	80								
		B_3	C	90	2							
		B_2	B	80					43/120	1/120		
		B_1	B	80								
		B_2	C	80	2							
		B_2	B	80	4							
		J_2	B	60	5							
	1 ft 10%											
867												
867									0	0		
		J_2	B	40								
		B_3	B	90	3							
		B_2	B	80	10							
	2 ft 10%											
		J_2	B	60	6							
872												
	4 ft 10%											
875												

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Hole No. 444

SHEET 35 OF 37

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 15 10 5		PERMEABILITY
875											
477	nil	B_1	B	80	3			0			
		J_2	B	60	16						
483		B_2	B	80	9			0	0		
	5 ft 10 ft	J_2	B	40	2						
		J_2	B	60	9						
		B_2	B	80	19						
493		B_3	C	85	5			18	0		
	1 ft 10 ft	B_2	B	80	3						
496	nil	B_2	B	80	4				0		
500		J_2	C	60	5						

LOGGED BY: _____

DATE: _____

PROJECT No: _____

Golder Associates

Hole No. 444

SHEET 36 OF 37

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
905		B_2	B	80	3			57	0	
		J_2	B	40						
		B_3	C	86						
906		B_2	B	80	3					
907		B_2	B	80	3			8	0	
926'										

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

36/900

Hole No. 444

SHEET 37 OF 37

K - FORDING 76(3)A-2

319

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
					Tricone					
30										
32										
	NIL	J_1	F	24°	-2			58/72	2/72	
		J_2	C	41	} 90° (Az) to each other					
		J_2	C	60	-3					
		B_3	C	85°	-5					
		B_2	C	73°	-2					
38										
40		J_4	W	26°	-4					
		B_3	C	85°	-9			79/120	6/120	
		B_4	W	71°	-4					
	NIL	J_2	W	60°	-5					
		J_4	W	38°						
		B_4	F	79°	-6					
		J_4	W	0°						
48										
		J_4	W	20°	-3					
50		J_1	F	8°	} 80° (Az) to each other					

LOGGED BY: RSC
DATE: 16/11/76
PROJECT No.

Golder Associates

Hole No. 447
SHEET 1 OF 48

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
50	5/120	B_2	W	68°	-3			105/120	1/120	
		J_2	W	22°	-4					
		B_3	C	90°	-2					
		B_2	C	71	-4					
					B9 - 68°					
		J_4	W	22°	-4					
58	NIL	J_2	W	45°	-9 } ~90° (AZ) from each other			76/120	0/120	
60		J_2	W	19°	-4					
		J_4	W	18°	-1					
		J_2	F	3°	-3					
		B_3	C	90°	-2					
		B_2	C	76°	-13					
					B9 - 70°					
68	NIL	J_4	C	9°				81/120	0/120	
70		B_3	C	85°						
		B_2	C	72°	-13					
		B_2	W	70°	-2					
		J_2	W	29°	-2					
		J_4	W	28°	-2					
					B9 - 74°					

LOGGED BY: RSC
DATE: 16/11/76
PROJECT No.:

Golder Associates

Hole No. 447
SHEET 2 OF 48

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
78		B_3	C	–						
80										
	NIL	J_4	W	29°	-1	39-74°		108/120	2/120	
		B_1	(K)	70°	–	K at 10° to long axis of face				
		B_2	C	73°	-15					
		B_3	F	irregular						
		J_1	F	5°						
88		J_1	F	5°						
90		B_2	C	70°	-15			111/120	2/120	
	NIL	J_2	C	0°	-3	89-70°				
		J_1	F	5°						
98		B_2	C	70°	-2					
100										

LOGGED BY: _____

DATE: 16/11/76

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 3 OF 48

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
100		B_2	C	72°	-7						
	NIL	J_1	F	21°				106/120	2/120		
		J_2	C	66°	-3	89-74°					
		J_4	C	38°							
		J_2	C	38°	-3						
		J_1	F	16°							
108											
		J_1	F	35°	-4						
110	48/120	J_1	F	22°	-3			52/120	8/120		
		B_2	C	75°	-9	89-73°					
		J_1	F	10°	-1						
		B_3	C	85	-1						
118										30 25 20	2 change scale
		B_1	B	25°	-3						
		J_1	B&M	51°	-2						
120	12/120	B_3	C	90°	-1	120/121 Coal		45/120	31/120		
		J_1	B	28°	-2						
		B_1	B	71°	-24						
		B_4	B	70°							

LOGGED BY: _____

DATE: 16/11/76

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 4 OF 48

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 20)		PERMEABILITY
128											
130	20/60	B_1	B	73°	-11	Coal lost ~16%		19/60	14/60		
		B_4	B	73							
		J_1	B	47°	.3						
133		J_1	B	48°	-5						
	10/72	B_1	B	70°	-16			23/72	23/72		
		J_1	B	5°	-2						
139						138.5			15 10 5	change scale	
140	N/C	B_2	C	72°	.3	B9-70		89/108	2/108		
		J_1	F	6°							
		J_4	F	6°							
		B_3	C	52°							
		B_1	B	56°							
148		B_3	C	80°	-9						
150		B_1	B	65°	-1						

LOGGED BY: _____

DATE: 16/11/70

PROJECT No: _____

Golder Associates

Hole No. 447

SHEET 5 OF 48

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 (15 10 5)	PERMEABILITY
156		B_2	C	70°	-4	B9-70°					
		B_2	B	73°	-4						
	N/C	J_1	F	5	-2				117/120	7/120	
		J_4	F	5	-2						
		J_1	F	58							
		J_3	C	71							
		J_2	B	45							
158		B_1	B	70	-3						
		B_2	B	80	-4						
160		J_1	B	50					103/120	3/120	
	N/C	J_4	wsp	19°							
		J_1	F	19°	-2	B9-75°					
		B_1	B	85							
		B_4	W	85°							
168											
170		J_4	W	9°					105/120	4/120	
	N/C	B_2	B	74°	-9						
		B_1	B	85°	-4	} coal seams					
		B_4	B	85°	13						

LOGGED BY: _____

DATE: 16/11/76

PROJECT No. _____

Golder Associates

Hole No. A47

SHEET 6 OF 48

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
	N/C	~~B1~~	~~B~~	~~75°~~	-3					
178										
180	48/120	B_1	B	62°	-4			43/120	5/120	
		J_2	W	13°	~~B9~~					
		J_4	W	13°						
		B_2	B	80°	-2					
		J_1	B	46°	K at 15° to being parallel to long face					
		J_4	W	45°						
188										
190	108/120	J_1	C	18°	drill induced breakage; core lost due to tube not latching			9/120	N/A	
		B_3	C	irregular and ground						
196										
198		B_3	B	90°	-3					
200										

LOGGED BY: _____

DATE: 16/11/76

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 7 OF 48

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 (15 10 5)	PERMEABILITY
200		J_4	W	3°	-2					
		J_2	C	20°					0	
	20/120				B9-72°					
		B_2	C	72°	-7			65/120		
		B_3	C	85°	-11					
208										
		J_2	C	21°	-4					
210		J_4	C	21	-1					
	NIL							107/120	2/120	
		B_3	82°	C	-5					
		B_1	(K)	72°	-2					
		B_2	B	72°	-9	(K) at ~12° to axis of long face				
218										
		B_2	B	88°	-9					
220		B_4	B	88°	-3			113/120	0/120	
	NIL	J_2	C	18°	-2					
		J_4	C	18°	-1					
		J_2	C	28°	-1					

LOGGED BY: _____

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PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 8 OF 48

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		PERMEABILITY
	NIL	B_3	C	80°										
228		B_2	C	65°										
230		J_2	W	10°	-2	B9 66°								
		J_4	W	10°	-2									
	NIL	J_2	C	47°							111/120	0		
		B_2	B	72°	-4									
		B_3	C	85°	-2	B9 70°								
238		J_2	W	11°	-2									
		J_4	W	11°	-2									
240		B_3	C	85°										
		B_1	(K)	81°		(K) sub parallel to long face								
	NIL	J_2	W	23°	-6	at AZ 80° to bedding					108/120	1/120		
		J_4	W	23°	-2	B9-70°								
		B_2	C	66°	-4									
		B_2	B	70°	-3									
		B_2	B	83°	-5	B9 - 83°								
248														
		B_2	D	70°	-2									
250														

LOGGED BY: _____

DATE: 17/11/76

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 9 OF 48

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 15 10 5	PERMEABILITY
250		B_2	B	72°	-10						
	N/C				B9-72				107/120	0	
		B_3	C	85°							
258		B_3	C	85°	-3						
260		B_2	C	76°	-2						
	28/120	J_2	C	28°					68/120	5/120	
		B_1	B	78°	-5						
		J_2	C	18°							
268		B_1	B	70°	-10						
270	26/120	B_3	B	90	-3				49/120	9/120	
		J_1	B	40	-5						
		J_1	B	62°	-4						

268.

lost Core = 51"/1.74 = 25%

Coal!

LOGGED BY: _____

DATE: 17/11/76

PROJECT No. _____

Golder Associates

Hole No. 947

SHEET 10 OF 98

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
					Coal					
278		B_3	B	85	-2					
	6/36	B_1	B	72°	-6			0	6/36	
280										
281		B_1	B	70°	-8					
	19/72	J_2	C	38°	-2			27/72	18/72	
		J_2	C	50°						
		B_2	C	73°	-5					
					B9-73°					
287		J_2	C	35°	2					
					B9-75°					
		B_2	C	72-75°	-16					
	6/20	B_1	C	75°	-2			67/120	2/20	
290										
		J_2	C	16°						
		J_2	C	5°						
					B9-73°					
297		J_2	C	3°	-2					
	NIL	B_3	C	78°	-2			102/120		
300		B_1	K	72°	3- K at 20° to ~~long~~ axis of long face					

2825

LOGGED BY: _____

DATE: _____

PROJECT No: _____

Golder Associates

Hole No. 947

SHEET 11 OF 48

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
300										
	Nil	J_2	c	16°	-2				3/20	
		J_4	c	16°						
		B_2	c	68°	-6					
307										
		J_1	k	62°	-	k at 10° to axis of long face				
310		B_2		72°	- 5			108/132	3/120	
		B_4	w	70°						
	12/132	J_4	c	25°	-3	B9-63°				
		B_2	c	62°	-4					
		J_1	c	25°	-2					
318										
320		J_2	c	38°	-	- at opp. direction to bedding		82/120	0	
	Nil	B_2	B	58-62°	-15					
		J_2	c	5°	-1					

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 497

SHEET 12 OF 48

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
	NIL	B_3	C	80°	-2				0	
328										
		J_2	C	16°	-4					
		B_3	C	irregular	-9			80/120		
		J_2	C	38°	-3				0	
	NIL	J_2	C	0°						
		B_3	C	80	-2					
		B_2	B	56°	-9					
338		J_2	B	30°	-2					
340		B_3	B	83°	-6			38/120		
	36/120									
		J_1	B	26°	-4	342			10/120	
		B_1	B	60°	-6					
						Coal, lost 6.5'/13' ~50%				
348		B_2	B	75°	-7					
350		J_1	B	3°						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 13 OF 48

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
350	42/120	B_2	B	70°	-2			21/120	13/120	
		S_1	B	55°	-4					
		B_1	B	70°	-9					
		B_3	C	85°	-5					
358		B_3	C	90°	-6					
360		B_2	B	82°	-6			29/120	9/120	
		J_1	C	34°	-2					
	N/A	J_2	C	16°	-2					
		B_2	B	68°	-5					
		B_1	B	68°	-2					
368		B_1	B	70						
		B_3	C	90						
370		B_1	B	70				91/120	4/120	
		B_2	C	70						
		J_1	W	15						
		B_2	C	70						
	N/A									
		B_2	B	80						

Coal

355

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 14 OF 48

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 15 10 5	PERMEABILITY
		B_2	B	90									
		B_3	C	85									
		J_2	C	15									
		B_2	C	80	4								
379		J_1	C	0									
380		J_2	C	25									
		B_2	B	80									
		B_1	B	75	5						94/108	12/88	
		B_2	B	75									
		B_1	B	70	2								
		J_1	C	35									
		B_2	B	75									
		B_1	B	70	4	polished surfaces							
388		B_1	B	85	3	" "							
389		B_2	C	75									
		B_1	W	45	2								
		J_2	W/C	10		very angular surface					102/120	3/120	
		J_2	C	35		angular surface.							
		J_1	B	50									
		B_2	B	80									
		B_1	C	85									
		B_2	B	80									
		B_1	B	80	2								
398		B_3	C	–									
		J_1	C	25									
400		B_1	B	75	2								

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 147

SHEET 15 OF 48

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)	PERMEABILITY
400	14% 135%	J_1	C	5	2			73/120	7/120	
		B_2	B	85	2					
		B_2	B	90						
		J_2	C	30						
		J_1	B	40						
		J_1	B	90						
		B_2	B	80						
		B_2	C	85						
408		B_4	W	50	5					
		J_2	C	0						
		B_2	B	80	3			95/108	0	
		B_2	B	80	3					
		B_2	B	80	3					
		J_4	W	0						
417										
420	14% 105%	B_2	B	80	5			68/132	5/132	
		J_1	C	10						
		J_1	C	0						
		J_2	C	20						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 16 OF 48

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
		B_2	B	80							
		B_4	B	80	3						
		B_3	B	85	3						
428											
430	1 ft lost	B_3	B	90	6				23/84	4/60	
		J_1	B	35							
		B_1	B	80	2						
		J_1	B	35							
435											
	1.5 ft lost	B_3	B	90	2						
		B_1	B	80	6	coal					
		B_2	B	80	5				0	6/60	
						broken core					
440		B_2	B	80	3						
	3 ft missing	B_3	B	90	12						
		J_2	B	10							
		J_1	B	35					0	13/96	
		B_1	B	80	8						
		B_2	B	80	4						
		J_1	B	35	4	small amount broken core					
448											
450		B_1	B	90	6						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 12 OF 48

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 15 10 5		PERMEABILITY
450		B_2	B	80	5								
		J_2	C	0						25/120	8/120		
		B_2	B	80	2								
	nil	B_2	C	90									
		J_1	C	35									
		B_1	B	85									
		B_2	B	80	3								
458		J_2	C	35									
		B_3	C	-	curved								
460		B_2	B	80	3					107/120	1/120		
	nil	B_1	B	80									
		B_2	B	85	2								
		J_2	C	5									
		B_4	W	85									
468		B_3	C	85	2								
470		B_2	B	85	3					114/120	0		
		J_4	W	0									
	nil	B_2	B	80									
		J_2	C	75									

LOGGED BY: _____

DATE: _____

PROJECT No: _____

Golder Associates

Hole No. 447

SHEET 8 OF _____

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	PERMEABILITY
		B_2	C	85	2						
		I_2	C	25						0	
		B_2	[illegible]	65							
475											
		B_4	W	75							
480		B_2	B	75							
		B_2	B	75	4				114/120	2/120	
		B_1	B	80	2						
		I_2	B	55							
		B_2	B	80	2						
488											
		B_2	B	75	2						
490		B_2	B+M	75	3				~~112~~ 70/84	2/84	
		B_2	B	75							
		B_1	B	85							
		B_2	B	85							
		B_1	B	80							
		B_2	B	65							
		B_2	B	75	3						
495											
		B_2	B	85	3						
		B_1	B	75	2					5/120	
		B_2	B	80	2				84/120		

LOGGED BY: _____

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Golder Associates

Hole No. 447

SHEET 19 OF 48

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
	nil	B_1	B	65						
		B_2	B	70	2					
		B_1	B	60	2					
		B_2	B	75	4					
505										
		B_1	B	80						
		B_2	B	75	2					
								80/120	3/120	
510	1.5 x 1 105	B_2	B	70	3					
		J_2	B	15						
		B_2	B	75	4 broken core					
		B_2	B	80	5					
		B_2	B	75	2					
516										
		B_2	B	70						
		J_2	C	35	2					
		J_2	C	15						
		J_2	W	0						
520		B_2	B	80	3			82/120	3/120	
		B_1	B	70						
		B_1	B	40						
		B_2	B	40	5					
		B_1	B	80						
		B_2	B	80	3					

LOGGED BY: _____

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Golder Associates

Hole No. 447

SHEET 20 OF 48

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 15 10 5		PERMEABILITY
526		B_2	B	75	5							
		B_2	B	80	6							
		B_1	B	80								
		B_2	B	80	2				90	3		
		J_1	C	15	2							
530										120		
		B_2	B	80	10							
536		B_1	B	80	2							
		B_2	B	80	2					3		
540		B_2	B	75					104/120	120		
		J_2	C	10								
		B_1	B	75	1							
		B_2	B	80	5							
		J_2	B	65								
		B_3	C	-	2							
546		B_3	B	80								
		B_3	B	80	3					0		
		J_2	W	10								
		J_4	W	0								

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Golder Associates

Hole No. 997

SHEET 21 OF 48

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
		B_2	B	80	4					
		B_2	B	75	4			100/120	0	
		B_2	B	80	5					
556										
		B_2	B	70				46		
		B_2	B	85	4			105/120	0	
560	NIL	J_2	C	8°						
		J_2	B	62°	-3					
		B_2	B	85°	-5					
		B_2	B	72°	-3					
566										
		B_2	B	73	-6			60/108		
570	18/108	J_2	B	55°	-3				0	
		B_3	C	85°	-7					
		J_2	K	53°	- K at 80° to long face					
575		J_2	C	10°	-1	573.5				

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Golder Associates

Hole No. 447

SHEET 22 OF 98

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 (25 20 15)		PERMEABILITY
		J,	B	45°							
		B1	B	65°	-15			39/84	22/84		
	NIL										
		B,	B	85°	-5						
580					Coal						
		J,	B	3°	-4						
582											
		B1	B	70°	-4			4/72	11/72		
		J,	B	44°	-4						
	NIL	J,	B	20°	-3						
		B2	B	85°	-3						
588									15 10 5	← change scale	
	6/48	J,	B	20°				18/48	3/48		
590		J,	B	40°	-2						
		B2	B	85°	-3						
591.3		B2	B	74°	-5						
592											
		B,	B	82°	-2						
	14/48										
		B2	B	80°	-10			97/120	2/120		
	NIL										
		J2	C	42							
600		J2	C	21							

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Golder Associates

Hole No. 147

SHEET 23 OF 48

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
600										
602		B_1	B	80	-9					
		B_2	B	80	-6			69/72	9/72	
	NIL									
608		J_2	[illegible]	38°						
610		B_1	B	75°	-3			87/120		
		B_2	B	80°	-13				4/120	
	NIL	J_1	B	0°						
		B_3	C	90°						
618										
620		B_2	B	80°	-8			79/120	0	
	NIL	B_3	C	90°	-3					
		B_2	C	80°	6					

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Golder Associates

Hole No. 497

SHEET 24 OF 48

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 (15 10 5)	PERMEABILITY
628		J_2	C	48°	-2				0	
		B_2	C	85°	-10					
630		J_2	K	45°	-3	K ∥ to long face axis				
		J_2	W	15°					0	
		J_4	W	10°						
		B_2	C	23°	-2			111/120		
	NIL									
		~~B_2~~	~~B~~	~~63°~~						
		~~J_2~~	~~C~~	~~40°~~						
438		B_2	C	90	-12					
40										
		B_2	B	83°	-8	B9-75°		112/120	0	
	NIL									
		B_2	B	63°						
448		J_2	C	90°						
		B_2	B	85°	-2					
50		B_2	B	75°	-1					

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Golder Associates

Hole No. 447

SHEET 25 OF 48

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
650		Jq	w	10°	B9-82°					
		B2	B	86°	-7			103/120	1/120	
	NIL	B1	B	78°						
					B9-85°					
458										
		B2	B	75°	-4					
660		B2	B	82-85	-12			96/120	0	
	NIL									
					B9-82°					
668										
					B9-82					
670		B2	B	80°	-5					
	NIL	B2	B	70°	-3			109/120		
		J2	c	60°	B9-71					

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Golder Associates

Hole No. 447

SHEET 26 OF 28

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
	N/C	B_2	B	75-80°	-8				0	
678		B_1	B	70°	-4					
		B_1	B	65°	- coal seam.					
680		B_2	B	60°						
		J_2	B	33°					15/120	
		B_2	B	80	-2			47/120		
	1/120									
		B_1	B	76-80	-9					
		B_2	B	76-80	-5					
		B_3	C	irregular						
		J_1	B	30°	-1					
688										
		J_1	B	3°						
690		B_2	B	75-80°	16					
	5/120	B_1	B	70°	-20			81/120	21/120	
		J_2	C	12°						
		J_2	C	33°	-3					
		B_3	B	irregular	-2					
698										
		B_2	B	83°	-5					
700		J_1	B	5°	-1					

LOGGED BY: _____

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PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 27 OF 48

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 .5 .0 5	PERMEABILITY
700		J_1	B	48°	-4					
		J_4	C	48°	-1					
	23/108	B_2	B	78°	-3			31/108	5/20	
		B_2	B	82°	-13					
707		J_2	C	2°	-2					
710		B_2	C	78-82°	-7			117/120		
	NIL	J_4	C	0°					0	
717		J_4	C	4°						
		J_4	W	4°	-2	B9 85°				
		J_2	C	73°						
720	NIL	B_2	C	75°	-5			115/120	0	
		B_2	C	82-86	-6					

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Golder Associates

Hole No. 447

SHEET 28 OF 48

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
727										
732	NIL	J_4	W	2°	-2			108/120	0	
		J_2	C	66°	-2					
		B_2	B	75-80	-12					
					B9-82					
737		B_2	B	80°	-5			92/120		
740	NIL	B_2	B	72°	-3				2/120	
		J_1	B	50°	-2					
		J_2	[illegible]	5°	-2					
747		B_2	C	86	-6					
		J_4	W	0°	-2					
		B_2	C	78°						
750		B_1	B	72°						

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Golder Associates

Hole No. 447

SHEET 29 OF 48

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 15 10 5	PERMEABILITY
750		B_1	B	65-72°	-8 - 100' 300mm S						
		B_4	B	N70°	-6				110/120	9/120	
	NIL										
		B_2	B	85°	-4						
757											
		B_1	B	75°	-8						
760		B_2	B	75°	-6				98/120	8/120	
	NIL	B_2	B	84°	-4						
		J_2	B	48°	-1						
		J_2	C	5°	-3						
767		B_2	C	80°	-1						
		B_3	C	80°	-6						
770	NIL								101/120	0	
		B_3	C	90°	-10						

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Golder Associates

Hole No. 847

SHEET 30 OF 48

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 (15 10 5)		PERMEABILITY
777											
		B_3	C	90°	-17						
780								108/120	0		
	NIL	J_2	C	37°							
		J_2	C	46°							
787											
		B_3	C	86°	-8						
		B_2	B	70	-2			87/120	12/20		
790											
	NIL	B_1	B	73°	-10						
		J_1	B	71°	B9- irregular.						
		B_2	B	82°	-3						
		J_1	C	31°							
797											
		B_2	C	82	-2 B9-82°						
800											

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Golder Associates

Hole No. 447

SHEET 31 OF 48

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 (15 10 5)		PERMEABILITY
800		B_2	C	82°	-13			11/120	4/120		
	N/C	J_1	B	70°	-2						
					B9-84°						
		J_1	C	0°							
		J_1	B	53							
807		J_4	B	53					20 15 10	change scale	
	20/108	B_1	B	85°	-7	8085		24/108	29/120		
810		B_2	B	85	-2						
		J_1	K	44°	-18 K at 8° to long face. Coal						
		J_1	B	45°	-10						
					lost: 8'/25', N 33%						
		J_1	B	66°	-2						
816											
		J_1	B	60°	-2						
		B_1	B	81	-10						
820	48/120	J_1	B	65°	-4			6/120	N/A		
		J_1	B	54°	-3						
		J_1	B	14°	-5						

LOGGED BY: _____

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Golder Associates

Hole No. 447

SHEET 32 OF 48

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
826		B1	B	80°	-9					
		J1	B	48°	-3			67/132	13/132	
830	30/132	B2	C	85°	-3	~~Ba - wavy & highly irregular~~				
		J1	B	58°						
						832 ~~833.5~~				
						Ba - wavy & highly irregular				
837										
		B2	C	86	-2	838				
		B1	B	74	-4				19/120	
842		J1	B	65	-2	Coal lost 30"/66 ~48%				
	30/120	J1	B	73				45/120		
						843.5				
		B1	B	72	-3					
		B2	B	85°	-5					
847										
		B1	B	85°	-7					
850										

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Golder Associates

Hole No. 947

SHEET 33 OF 48

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION		DESCRIPTION AND REMARKS
850		B_1	B	85°	-2	
		B_2	B	70	-6	
		B_2	B	86	-3	
	NIL					
		J_1	B	60°	-3	
		J_2	C	0°		
858		J_2	B	68°	-3	
860		B_2	B	82°	-10	B9-80°
		B_2	B	74°	-3	
	NIL					
		J_2	C	0°		B9-78°
868						
	NIL	B_2	B	73°	-6	
870		J_1	B	62°	-2	
		B_3	C	90		
		B_2	C	84°	-9	

GRAPHIC LOG — BRECCIA/GOUGE ☐ BROKEN CORE ▨

HARDNESS 4 3 2

ROCK QUALITY DESIGNATION 75 50 25

NATURAL FRACTURE FREQUENCY -5 -0 5

PERMEABILITY

LOGGED BY: _____

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Golder Associates

Hole No. 447

SHEET 34 OF 48

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
878		B_2	C	85°	
880		B_1	B	84°	-2 B9-81°
		B_2	B	84°	-10
	NIL	J_1	C	5°	
		J_2	W	5°	2' long
		J_3	C	60°	
888					
890		J_2	C	5°	-2
		B_1	B	85°	-5
	NIL	B_2	B	85°	-7
		B_3	C	90°	-4
		J_3	C	62°	
898		J_4	B	54°	
		B_2	B	82°	
900					

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

NATURAL FRACTURE FREQUENCY: 15 10 5

PERMEABILITY

97/120

2/120

75/120

5/120

LOGGED BY: _____

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Golder Associates

Hole No. 447

SHEET 35 OF 48

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 15 10 5	PERMEABILITY
900										
	4/120	J_2	B	71°						
		B_2	B	76°	-8			92/120	1/120	
		B_2	B	80°	-7					
908		J_2	C	0°	18" long					
		B_2	B	86	-4					
910		B_1	B	86	-6			72/120		
		B_3	C	90°	-1					
	NIL	J_3	C	60°	-1				15/120	
					913					
		J_1	B	71°						
		J_1	B	20°						
918		B_1	B	85°	-7					
					Coal ~ 100% recovery					
920		B_1	B	86°	-9					
	NIL	J_2	B	52°	-8				10/120	
		B_2	B	86°	-11			48/120		
		J_1	B	2°						

#5 Seam

LOGGED BY: _____

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Golder Associates

Hole No. 447

SHEET 36 OF 68

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 (B A S)	PERMEABILITY
928										
930	NIL	J_1	B	8°	12" long			58/120	2/120	
		J_2	B	28°	-3					
		B_1	B	83°	-4					
		B_2	B	83°	-12					
		J_2	B	56°	-5	934.5				
938										
940	NIL	B_2	C	85	-9					
		B_2	B	85°	-5	B9 - 87°		108/120	0	
		J_2	W	16°	6" long					
948										
		B_2	B	85°	-8					
950										

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PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 37 OF 48

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
950	NIL	B_2	C	85°	7			95/120	0	
		B_2	C	81°	-6					
		J_2	C	91°						
958		J_2	C	2°	-2					
		J_2	K	91°	-	K at 75° to axis of long face				
960		J_2	C	31°						
	NIL	J_4	C	5°	-			101/120	0	
		B_2	C	83°	-4					
						B9 - 74°				
		B_2	B	74°	-7					
968										
970		J_2	W	32°	-2					
		B_2	B	80-82	-10				0	
	NIL	J_2	C	66°				99/120		
		J_2	C	22°	-3					

LOGGED BY: _____

DATE: 23/11/70

PROJECT No. _____

Golder Associates

Hole No. 947

SHEET 38 OF 48

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 (15 10 5)	PERMEABILITY
		J_4	C	15°						
978										
		J_2	C	90°	-3					
980		J_2	C	30°	-2					
	10/120	B_2	C	83°	-5					
		B_1	B	78°	-4	B9-72°		64/120	4/120	
		B_4	B	75°	-3					
988										
		J_1	B	50°	-2					
990		B_2	B	68°	-3	B9-68°				
	NN	B_3	C	81°	-9			103/120	2/120	
		J_2	C	26°						
		J_2	C	0°						
998										
		J_2	C	25°	-2					
1000										

LOGGED BY: _____

DATE: 23/11/76

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 37 OF 48

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
1000										
	4/120	B_2	B	73°	-6			73/120	0	
		B_3	C	40	-5					
		J_2	C	20°						
		J_2	C	46°	-2					
1008										
		J_2	C	64°						
1010	8/120	B_1	C	75°	-5			60/120	5/120	
		J_2	C	50°	-3					
		B_3	C	80°	-10					
1018										
	32/36	B_1	B	83°	-1			0	N/A	
1020										
1021		J_2	C	0°	-2					
	18/36	J_4	W	9°				9/36	N/A	
		J_2	C	46°						
		B_3	C	80°	-8					
1024		B_3	C	90°						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 497

SHEET 40 OF 48

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
		J_4	W	15°	-2					
		B_2	C	80°	-7			109/120	0	
1030	NIL									
		J_2	C	76°						
		J_2	C	60°						
1034										
								96/120		
	NIL	B_2	C	80°	-14					
		J_2	C	0°	18" long				0	
1040										
		J_2	C	62°	-2					
		B_2	B	76°	-1					
1044										
		B_1	B	66°	-7					
		J_4	W	20°	-3				3/120	
	NIL	B_2	B	73°	-3			116/120		
		J_2	C	0°						
1050										

LOGGED BY: _____

DATE: 29/11/76

PROJECT No. _____

Golder Associates

Hole No. 947

SHEET 41 OF 48

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES TYPE	INFILLING	INCLINATION		DESCRIPTION AND REMARKS
1050						
	NIL					
		B_3	B	86°	-2	
1054						
		B_3	C	90	-2	
	NIL	B_2	B	70°		
		B_2	B	48°	-2	
1057						
		B_2	C	66°	-3	
1060						
		B_2	C	83°	-4	
	NIL					
		S_2	K	62°	-2	K at 5° to axis-long face
1067						
		B_3	C	90°		
		B_3	C	90°	-3	
	12/32	S_2	C	22°		
1070						
		B_1	K	76°	-2	K at 80° to long face axis
		J_4	W	22°	-2	
		B_2	C	81°	-14	

GRAPHIC LOG — BRECCIA/GOUGE ▨ BROKEN CORE ▧

HARDNESS 4 3 2

ROCK QUALITY DESIGNATION 75 50 25: 34/36; 113/120; 106/132

NATURAL FRACTURE FREQUENCY 15 10 5: 0; 2/120; 2/120

PERMEABILITY

LOGGED BY: _____

DATE: 24/11/76

PROJECT No. _____

Golder Associates

Hole No. 947

SHEET 42 OF 48

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
		J_2	C	5°					0	
1078										
		B_2	C	80°	-7	B9 - 74				
1080										
								105/20		
		J_4	W	20°						
	NIL	B_2	B	62°	-6	B9 - 58-60°			2/20	
		B_2	B	76°	-2	B9 - 76°				
1088										
		J_1	B	48°	-2					
1090										
		B_2	B	76°	-3				2/120	
	NIL	J_4	W	10°	-2			119/20		
		J_2	C	19°	-2	B9 - 72°				
		B_2	B	87°	-3	B9 - 87°				
		J_2	C	10°						
1098										
									0	
1100										

LOGGED BY: _____

DATE: 29/11/76

PROJECT No. _____

Golder Associates

Hole No. 997

SHEET 43 OF 98

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
1100					B9 usually approx 78°			108/120		
	NIL	B_2	B	75-80°	-19				0	
1108		B_2	B	66°						
		B_1	B	64°						
1110		S_2	W	4°	15" long					
	NIL	S_4	C	4°	- 30" long.			95/120	7/120	
		B_2	B	80°	-10					
		B_1	B	80°	-3					
		B_1	B	62°	-3					
1118		B_2	B	62°	-3					
		B_1	B	58°	-3					
1120		B_1	B	71°	-3					
		B_4	B	irregular	- N20				6/120	
	NIL	B_2	C	75-80°	-12			88/120		

LOGGED BY: _____

DATE: 24/11/76

PROJECT No. _____

Golder Associates

Hole No. 997

SHEET 44 OF 48

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 15 10 5		PERMEABILITY
	NIL										
1128											
1130		B2	C	80°	-15			75/120	3/120		
	NIL	B1	B	72°	-2						
		B1	B	83°	-1						
		J2	C	20°	-4						
		J2	C	61°							
1138		B3	C	90°	-3						
1140		B2	C	80-85	-13	B9 - 84°		81/120	0		
	NIL										
1148								58/60			
1150	NIL					B9 - 83°					

LOGGED BY: _____

DATE: 26/11/76

PROJECT No. _____

Golder Associates

Hole No. 497

SHEET 45 OF 48

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
1150	NIL	B_2	B	84°						
		B_2	B	87°	-3				0	
		J_4	W	16°						
		J_4	W	0°						
1153										
		J_1	B	61°	-3			61/96	1/96	
	12/96									
		B_2	C	80-85	9					
		B_2	B	76°	-2					
		B_3	C	90°	-2					
1160										
1161										
	12/24	B_2	B	85°	9			0	0	
1163										
		B_2	B	82°	-10					
		J_1	B	40°						
		B_2	B	90°	-2					
	19/79							9/79	2/74	
	12/78	J_2	B	65°	-4					
		J_1	B	56°						
1169										
1170	6/36	J_1	B	46						
		J_1	B	35				4/36	N/A	
1172										
		J_1	B	54°						
		J_2	B	46°	-4					
		J_1	B	18°	-2					

1161 Coal

pulverized

LOGGED BY: _____

DATE: 25/11/76

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 46 OF 48

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
	24/120	B,	B	82°	-11			29/120	19/120	
1180					lost 5'/34', N15%					
1182									30 25 20 ← change scale	
		J,	B	55°	-3					
		B,	B	85°-80°	-19					
	18/120	J,	B	60°	-3			28/120	27/120	
		J,	B	28°						
1190										
1192		B,	B	65°	-1					
		J,	B	54°	-3					
		B,	B	80-85°	-20					
	NIL	J2	B	23°		1195'		40/120	23/120	
		B2	B	76°	-9					
1200		J2	C	0°	-29"/ong.					

LOGGED BY: _____

DATE: 29/11/76

PROJECT No. _____

Golder Associates

Hole No. 447

SHEET 47 OF 48

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 20)	PERMEABILITY
1200		J_2	c	39°						
		J_2	B	61°						
1202		B_2	B	85°	4					
		J_2	c	36°	-6					
		B_2	B	75°	-8					
	N/C							115/120	0	
		J_2	w	2°	-6 °/ons.					
1210		J_4	w	2°	-2					
		J_2	c	71°						
1212		T.D.			T.D.					
1220										

LOGGED BY: _____

DATE: 29/11/76

PROJECT No. _____

Golder Associates

Hole No. 47

SHEET 48 OF 98

455

K-FORDING 76(3)A-2

GEOLOGIC LOG							ENGINEERING LOG											
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
0														
5														
6.0		J1	B	60	chert arenite, grey, coarsegrained		✓		R3	✓				
10														
11.0		J1 J1	F C	30° 10							5/3			
14.0		B1 J1 J1 J1 B1	C C F C,F F	60 10 10 10										
15														

319

GGED BY KAK, WHS DATE MARCH 10/76

GOLDER ASSOCIATES

SHEET 1 OF ___ HOLE No. 455

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
15														
18.0		J1	C	90						✓	2/5			
20		J1	W	20										
23.0										✓				
24.0														
25										✓	1/4			
28.0		J1	F	10										
30														

LOGGED BY DATE SHEET 2 OF HOLE No. 155

GEOLOGIC LOG							ENGINEERING LOG											
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
30										✓	3/5			
32.0					blocky					✓				
		J1	C	15										
		J1	C	0										
35		B1	S,W	60										
37.0		B2	C	57										
40														
42.0														
45		J1	M	10	mudstone, blocky, with silt interbeds									

CORED BY DATE CORBETT ASSOCIATES SHEET 3 OF ____ HOLE No. 455

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
45														
41.0														
		J1	F	20						FAIR / GOOD	6/5			
		J1	F	15										
50		J1	F	10										
52.0		J1	F	12										
		J1	C	20										
		B1	B	70						FAIR / EXCEL.	12/5			
		J1	C	20										
		B1	B	70										
55		J1	W	40										
		J1	C	0										
		J1	W	40										
57.0		J1	C	0										
		B1	W	70						GOOD	9/5			
		J1	W	70										
		B1	C	70										
60		J1	C	10										

SHEET 1 OF HOLE No. 455

GEOLOGIC LOG								ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
60.0		J1	W	20						✓	4/3			
		B1	W	80										
		B1	W	80										
62.0														
65		B1	B	60										
		B1	C	60										
68.0														
70		B1	B	70										
		J1	B	15										
75														

GGED BY _____ DATE _____ SHEET ___ OF ___

GEOLOGIC LOG								ENGINEERING LOG																						
DEPTH	PERCENT CORE LOSS				FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT	BROKEN CORE	WATER LOSS	CEMENT	HARDNESS	ROCK QUALITY DESIGNATION					FRACTURE FREQUENCY					DOUBLE SHEAR				OTHER TEST RESULTS	PIEZOMETER INSTALLATION
	25	50	75		TYPE	INFILLING	INCLINATION								V. POOR	POOR	FAIR	GOOD	EXCEL.	5	10	15	20							
75					J1	C	25							R2			✓					10/5								
					J1	B	5																							
					J1	C	30																							
78.0					B1	C	50																							
					B1	C	65									✓						7/5								
80																														

K - FORDING 76(3)A-2

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER
15					oxidized to 97.0 t siltstone, c.q.								
18.8		J1	W	45°					V	C.P. / 1.5			
20													
21.0		J1	W	50°	bedding calcite infilled 65°								
		J1 J1	W W	5° 30°					V	28/5			
25													
26.0		J1 B1	F C	2° 42°	bedding - 54°								
									V	19/5			
30													

319

GGED BY WHSKAK DATE MARCH

GOLDER ASSOCIATES

SHEET 1 OF MANY HOLE No. 456

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER
31.0		J1 31	F C	50 18	20°						25			
					broken crushed to - 32-34									
35 36.0		B1	F	55°						V	15			
40														
41.0		51 J1	F C	60° 20°							17 15			
45		B1	B	60°						V				

GGED BY _____ DATE _____ **GOLDER ASSOCIATES** SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
45														
48		J1	C	5°										
		J1	S	50°										
		J1	F	20						14				
50														
50					Crushed Zone 50-50.0					52-51				
		J1	C	50										
		J1	C	50	Crushed Zone 52.5-55.3 SS.									
55														
60														
		J1	C	18°						15				
		J1	O	18°						30				
		J1	C	70°						V				
		J1	C	37°										

GGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG								ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
		J1	P	28°						✓	5/5			
		J1	F	45°										
6														
Bad Core					Crushed.									
		B1	P	48°										
		J1	W	22°						✓	11/5			
10														
12														
		J1	S	38°	+13°		→			✓	10/5			
14														

GGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG								ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
75'														
77.0		J1	N	66°										
										2	12/5'			
80.		J1	F	15°										
		J1	C	0°										
		BL	C	41°										
82.0		J1	F	10°										
		J1	F	64°										
										1	12/5'			
85														
87.		J1	F	5°										
		J1	F	33°										
		J1	F	0°										
90														

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER
12		J1	W	11°										
		31	C	20°	Fe rich soft						12/5			
15		J1	C	0°						V	10/5			
17		J1	W	15°										
18		J1	F	43°										
		B1	F	62°						V	14/5			
102.0		J1	F	40°										
105														

GGED BY _____ DATE _____ **GOLDER ASSOCIATES** SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
105														
		B1	C	56°						✓	7/5			
106.0		J1	S	51°										
		J1	S	49°							∞			
		B1	S	73°						✓				
110 / 110.0														
		B1	S	56°										
		J1	F	0°						✓	∞			
		J1	F	32°										
		~~J1~~	~~F~~	~~0°~~	~~slickensides oxide @ 22°~~									
115 / 116.0		J1	F											
		J1	F	34°						✓	∞			
		J1	F	0°										
120														

GGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS
120												
121.0												
		J1	W	46°					✓	9/5		
125												
126.0												
		J1	W	21°					✓	13/5		
		J1	F	6°								
		J1	F	29°								
130												
131.0												
132.10									✓	0/5		
		J1	W	31°								
		B1	S	79°								
135												

LOGGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ___ OF ___ HOLE No.

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
136		Jl	W	10°							B/ST			
#1										✓				
(5.0)														
140														
142		Bl	C	42°										
145														
		Jl	W	41°										
147.0		Jl	F	25°										
		Jl	F	29°										
		Jl	F	4°										

CCED BY DATE

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
150														
		B1	C	56°							13/5			
152.0														
		B1	C	56°						✓	9/5			
155.0														
157.0														
		J1	F	19°										
		J1	C	39°										
		J1	F	29°										
160		B1	C	70°						✓	6/5			
162.0														
		J1	F	29°										
165														

LOGGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
165		JI	W	29							11/5			
		JI	CW	16°										
167.0														
		JI	F	26°										
170		h	F	90										
172.0														
175														
177.0														
178.0	✓	BI	B	55°										
180														

CSED BY DATE

GOLDER ASSOCIATES

SHEET ___ OF ___ HOLE No. ___

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
180		B1	B	60°							21/5			
185		B1	B	60°										
1870														
190										✓				
1920		~~H1~~	~~C~~	~~21°~~										
195		H1	C	21°										

GGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG										
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER
195											8/5			
190										✓				
200														
		B1	B	71°	blocky									
202		J1	S	0°						✓	16/5			
		J	S	0°										
205		J1	S	3°										
										✓	—			
207.0		J1	S	4/60										
		B1	B	65°										
210														

LOGGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
210		J1	B	3°										
		J1	C	12°										
211.6														
										✓	30/5.1			
215		J1	F	27°										
216.5														
		J1	C	21°										
		B1	C	60°										
220.0		J1	W	30°							D			
		B1	W	68°						✓				
											9/15			
		B1	C	64°						✓				
		J1	C	4°										
225.0														

LOGGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
225														
	✓	J1	C	0°	angulate					✓	8			
		B1	C	20°										
229.10														
230		J1	I	0°										
		B1	C	61°						✓	9/5			
2320														
		J1	C	0°										
		J1	C	28°										
235										✓	8/5			
237.10														
		B1	B	62										
		J1	C	50										
240														

GGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
24.0		J1	B	60							26/5			
24.0														
		B1	B	31							2			
		J1	B	26						✓				
21														
24.5														
										✓				
25.0	✓													
		J1	C	6°										

GGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL. 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
253.0		Bl	C	4										
[illegible]		Jl	B	20										
262.0		[illegible]		2							9/5			
[illegible]		Bl	C	70°										
267.0		Jl Jl	C C	45° 4										
[illegible]														

GGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG								ENGINEERING LOG											
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
[illegible]					nothing			[illegible]	✓				
275			C	[illegible]									
			C	79									
		30	C	39									

GGED BY _____ DATE _____ **GOLDER ASSOCIATES** SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG								ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
315														
317.0		J1	W	19°										
		B1	C	59°						✓	6/5			
320														
322.0		B1	C	71°										
		J1	W	34°						✓	8/5			
325														
327.0		J1	W	12°							5/5			
		J1	C	41	+7+0					✓				
330														

DATE SHEET OF HOLE No.

GEOLOGIC LOG							ENGINEERING LOG										
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
330										✓	12/5			
335		B1	c	61										
337.0		J1	c	33										
340		J1	c	12						✓	9/5			
342.0		J1	c	3										
345		J1 J1	W c	21 4 33						✓	9/5			

LOGGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
345		Bl	C	67										
347.0														
		Jl	C	6							7/8			
350		Bl	C	59										
352.0														
											7/5			
355		Bl	C	74										
357.0														
		Bl	B	61										

CGED BY _____ DATE _____

GEOLOGIC LOG							ENGINEERING LOG										
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
360										✓	18/9			
362.0		Jl	C	6										
365		Jl	C	22						✓	9/5			
367.0		Jl	W	14										
370		Bl	C	69						✓	14/5			
		Jl	W	29										
372.0														
375		Bl	C	49						✓ 1	10/4			

CRED. BY DATE SHEET OF HOLE NO.

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
375														
376.0											5/8			
		B1	C	78						✓				
380.0											9/2			
										✓				
382.0		B1	C	57										
		J1	C	27										
385											15/5			
										✓				
		B1	B,S	64										
387.0														
390		B1	C	67										

SHEET ____ OF ____ HOLE No. ____

DATE

GOLDER ASSOCIATES

GEOLOGIC LOG							ENGINEERING LOG										
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
390										✓				
392.0														
		J1	C	14						✓	18/5			
		B1	C	72										
395														
397.0														
										✓	15/5			
400		B1	S	77										
402.0		B1	C	80										
		B1	C	68						✓	17/5			
405														

CSED BY DATE SHEET OF HOLE NO.

GEOLOGIC LOG								ENGINEERING LOG															
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
405													
406.5		Bl	C	90									
									✓	15/5			
410													
411.5		Bl	C	87									
									✓	18/4			
415													
415.5		Jl	S	72									
		Jl	S	60						12/5			
									✓				
420					419.5 - 423.0 broken core slickensides								

LOGGED BY DATE

GEOLOGIC LOG							ENGINEERING LOG										
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
~~420~~ 420.5										✓				
422.0														
		J1	B	59						✓	6/5			
425														
427.0		J1	B	40										
		J1	S	32						✓	1/5			
430														
432.0		J1	C	30										
									R5	✓	12/5			
~~435~~														

DATE

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG								ENGINEERING LOG											
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
435													
437.0													
		J1	C	25					V	15/5			
440													
442.0		J1	W	25									
										12/5			
444		B1	S	52									
		J1	W	19									
		B1	W	58									
447.0		J1	C	0°									
		B1	C	54									
450		J1	W	62									

LOGGED BY _____ DATE _____ SHEET _____ OF _____ HOLE No. _____

GEOLOGIC LOG								ENGINEERING LOG																						
DEPTH	PERCENT CORE LOSS				FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT	BROKEN CORE	WATER LOSS	CEMENT	HARDNESS	ROCK QUALITY DESIGNATION						FRACTURE FREQUENCY				DOUBLE SHEAR				OTHER TEST RESULTS	PIEZOMETER INSTALLATION
		25	50	75	TYPE	INFILLING	INCLINATION								V. POOR	25	POOR	50	FAIR	75	90 GOOD EXCEL.										
450					J1	W	27												V			8/5								
					J1	C	0																							
452.0					B1	C	90																							
455																														
457.0																														
460																					V	2/5								
					J1	C	37																							
462.0					B1	B	76																							
					J1	C	29																							
465																														

COED BY DATE SHEET OF HOLE NO.

GEOLOGIC LOG								ENGINEERING LOG																
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
465		B1	S	40		1			R3		✓	10/5		
		B1	W	69										
467.0		J1	C	38										
		J1	C	15										
		J1	C	13						✓		7/5		
		J1	C	0	from 468 to ~471.5									
470														
470.5		J1	W	19										
											✓	4/5		
475														
476.5		J1	W	20										
		J1	C	0										
		J1	W	21										
					471-478 broken zone					✓				
480														

DATE

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG										
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
480														
481.5		B1	W	71										
485		J1	S	31	calcite stringers 485-487					✓	∞			
487.0														
490										✓	4/4			
492.0		J1	WS	2	slickensides 56									
495		J J1	C C	20 4						✓	✓	16/5		

DRILL HOLE NO. DATE SHEET OF

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
495														
497.0														
		J1	W	65						✓	19/5			
		B1	QW	65										
500														
502.0		J1	W	2										
		B1	QW	54						✓	12/5			
505														
507.0														
		J1	W	57						✓ 1	17/5			
510														

LOGGED BY DATE SHEET OF HOLE NO.

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
510														
512.0														
515										✓ (FAIR)	9/5			
517.0		J1	C	26										
520		B1 J1	W e	66 0						✓ (POOR)	19/5			
522.0														
525										✓ (GOOD)	17/5			

LOGGED BY DATE SHEET OF HOLE No.

GEOLOGIC LOG								ENGINEERING LOG											
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
525													
527.0		J1	W	8									
		B1	C	60					✓	17/5			
		J1	W	30									
530													
		J1	B	20									
532.0													
		J1	W	29					✓	18/5			
535													
537.0		J1	C	3									
									✓	5/5			
540													

CODED BY DATE SHEET OF

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
540		J1	W	7									
		B1	W	56									
542.0					broken run.								
545					543-547- J1 C 0 $\frac{8}{4}$				✓				
547.0		J1	W	31									
550		B1	W	72					V	$\frac{72}{5}$			
552.0					S				✓				
555		B1	C	56	J1 W 0° 552-557					$\frac{8}{5}$ $\frac{1}{5}$ drilling			

CSED BY DATE SHEET OF

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
555														
557.0					557 - 559.5 J1 N O									
					559.5 - 562 - brokencore. J1 W O					✓	1/5			
560														
562.0														
		J1	B	27										
		J1	W	28						✓	9/5			
565														
		B1	C	65										
		J1	C	22						✓	12/5			
567.0														
		B1	S	62										
570		J1	C	16										

GGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
570														
		J1	W	26										
		B1	S	66										
572.0														
		B1	S	65						✓	11/5			
575														
		J1	W	21										
		B1	S	72										
577.0														
		B1	S	69										
		J1	S	55						✓	8/5			
580														
582.0		B1	S	73										
										✓	4/5			

LOGGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

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GEOLOGIC LOG							ENGINEERING LOG										
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
0					4SA				R4					
4.0					broken core, mechanical									
5									R4					
7.0														
		B1	C	70°	fractures are oxidized					✓	14/5			
10		J1		0°										
10					bedding 65°									
10														
		J1	20	35°	→ 55° apart.						15/5			
15														

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LOGGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
15						
		J1	C	6°		
17.10		J1	C	6°		
		J1	C	60°		
20						
		J1	F	8°		
		J1	[illegible]	6°		
21.5		J1	F	30°		
	2-	J1	C	20°	140 apart	
25						
		J1	F	3°		
26.5		J1	W			
30						

ENGINEERING LOG

FAULT / BROKEN CORE / WATER LOSS / CEMENT

HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
R3					
R3		12/4.5			
		8/5			
R4		10/5			

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
30														
31.5					SOS.									
											4/5			
35														
36.5		B1	S	75	SOS.									
											5			
40														
41.5											9/5			
45		B1	C	65°										

LOGGED BY DATE SHEET OF NO.

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
45													
46.0		Jl	N	20°						8/5			
		Bl	C	20°									
		Jl	W	70									
50													
51.0		Jl	C	35	+0°					18/3			
		Bl	C	60°									
55													
57.0					slickensides @ 56° min								
		Jl Bl	F S	30° 60°									
60													

LOGGED BY _____ DATE _____ SHEET _____ OF _____ HOLE No. _____

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
60						
61.0		JI	W	0°		
		JI	S	65°		
		JI		40°		
65						
66.5		BI	S	71°	broken core. semi-fissile shaly -66-67.5	
70						
72.0		JI	W	0°		
75						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
60								
61.0			R2		12/5			
65								
66.5					∞			
70								
72.0								
75								

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
75		Jl	W	43		
77.0		Jl	C	90		
		Bl	S	79°		
80						
		Jl	S	45°		
		Jl	S	15°		
82.0		Jl	W	2°		
		Jl	W	40°		
		Jl	W	0°		
85						
		Bl	BS	75°		
87.0						
		Bl	C	65°		
		Jl	C	0°		
90						

ENGINEERING LOG

FAULT	BROKEN CORE	WATER LOSS	CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR / POOR / FAIR / GOOD / EXCEL; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
						8/5			
						10/5			
						12/5			

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ h No. _____

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
90	28%					
		Jl	W	0°		
92.0						
	80%				93.0-95.0 - highly fractured. (drilling)	
95.0						
	85%					
97.0		Bl	S	50°		
					97.0-99.4 zone of slickensides	
100		Jl	W	50°		
102.0						
		Bl	S	75°		
		Jl	W	0°		
105						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
90								
92.0								
95.0								
97.0								
100								
102.0								
105								

GGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
105													
		B1	S	58°						M/S			
107.10													
		J1	C	16°									
		J1	W	2°	110'-112- jointing calcite infilling quartz								
110									V	11/S			
		B1	Q ~~W~~	70									
110		J1	C	20°									
		J1' B1°	C C	00 81°					V	G/S			
115													
		B1	W	56°									
		J1 B1°	W N	20° 81°									
117.10													
		J1	C	60°									
120													

GGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ H No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
120														
122.10														
		J1	S	32°										
125														
		B1	C	87							2/5			
127.10														
		B1	S	81°										
130														
		B1	C	68°							9/15			
		J1	W	12°										
132.10		B1	C	68°										
		B1	W	85°										
135		J1	W	0°										

LOGGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL. 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
135														
		B1	W	88°										
137.0														
		B1	W	70°										
		J1	W	14°										
140														
142.0														
		J1	W	10										
145														
		B1	W	68°										
		J1	C	10										
147.0														
		J1	W	12°										
		B1	WG	62°										
150														

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
150						
152.0		Jl	Q	15° +11°		
		Jl	W	0°		
		Jl	W	11°		
		Bl	W	81°		
		Jl	NQ	20° +11		
155						
		Jl	W	2°		
157.0						
160						
		Jl	C	3°		
		Bl	C	80°		
162.0						
		Jl	W	10°		
165						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
150			R22					
152.0					5			
					15			
155								
157.0								
160					4			
162.0								
165								

LOGGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
165						
		Bl	W	90°		
167.0						
170		Bl	W	82°		
		~~Jl~~	~~S~~	~~30°~~		
172.0						
		Jl	S	32°		
		Jl	W	7°		
		Bl	C	58°		
175						
177.0						
		Bl	W	90°		
180.0		X	C	20°		

ENGINEERING LOG

FAULT / BROKEN CORE / WATER LOSS / CEMENT / HARDNESS

ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)

FRACTURE FREQUENCY (5 10 15 20)

DOUBLE SHEAR

OTHER TEST RESULTS

PIEZOMETER INSTALLATION

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
180.0						
		Jl	W	14°		
182.0		Jl	W	22°		
		Jl	W/Q	0° + 40°		
185.0						
187.0						
		Jl	C	52°		
		Jl	C	66°		
190						
		Jl	W	16°		
192.0						
		Jl	Q	5°		
195						

ENGINEERING LOG

FAULT / BROKEN CORE / WATER LOSS / CEMENT / HARDNESS

ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)

FRACTURE FREQUENCY (5 10 15 20)

DOUBLE SHEAR

OTHER TEST RESULTS

PIEZOMETER INSTALLATION

GGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
175		JI	W	45°						30/5			
190					*								
200										40/5			
200.0		FI	WQ	51°						42/5			
205													
207.0		JI	WQ	14°	// to bedding.								
210										42/5			

GGED BY _____ DATE _____ **GOLDER ASSOCIATES** SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
20													
20.0													
21.5										21 / 15			
21.0		Jl / Bl	C / S	50° / 65°									
22.0													
22.0		Jl	W	16°						13 / 15			
22.0		Jl / Bl	W / C	0° / 72°									
23													

GGED BY _____ DATE _____ **GOLDER ASSOCIATES** SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
225														
226.0		Jl	W	0°										
		Jl	C	5°							13			
230														
		Jl	C	14°										
		Jl	S	45°										
		Bl	C	88°										
232.0		Jl	W	20°										
		Jl	C	40°										
235														
		Bl	C	70°							R			
237.0														
240														

LOGGED BY _____ DATE _____ **GOLDER ASSOCIATES** SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR POOR FAIR GOOD EXCEL. 25 50 75 90)	FRACTURE FREQUENCY (5 10 15)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
240								R3					
		B1	C	85°						16			
242.10		J1	C	10°						15			
		B1	C	72°									
		J1	C	10°									
245.0													
247.10										15			
										18			
250.0										12			
252.0													
254													

LOGGED BY _____ DATE _____

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. _____

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GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
0														
5														
8.0														
8.5		J1	B	24					23		5/3.5			
		B1	C	90°						29/42				
10		J1	F											
		B1	F	90										
12.0		B1	B	77										
		B1	C	78										
		B1	C	78										
		B1	C	59	BIS 78 -4					49/62	12/5			
		J1	F	16	-3B1 J1									
15.0														

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
15		B1	C	77	1-B1				33	70/80	2/5			
17.0		J1	C	9	2-B1, 1-J1									
					~~1-B1,~~									
		B1 ~~2B1~~	S	~~89~~	2-B1,					35/60		19/5		
20		J1	C	42	2-B1, 1-J1									
		B1	S	85	4-B1									
22.0		J1 B1	F W	0 90	5-B1, 1-J1									
		B1	C	85	~~5-B1~~					31/60	13/5			
					2-B1									
25					1-B1									
					2-B1									
27.0		J1 B1	C C	0 72	2-B1, 1-J1									
					~~1-B1~~									
		B1 J1	C C	64 0	1-B1									
31.0														

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
30		B1	C	58	
					0-B1
		J1	F	24	-2-B1
32.0		B1	C	80	4-B1
					2-B1
		J1	F	24	~~4-B1~~
		J1	F	0	7 B1
35					
37.0		B1	C	86	6-B1
		B1	C	90	2-B1
					0-B1
40	90%				1-B1
					4-B1
42.0		B1	C	85	1 B1
					3-B1
45					

ENGINEERING LOG

GRAPHIC LOG: FAULT; BROKEN CORE; WATER LOSS; CEMENT

HARDNESS: 33

ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90): 15/60; 33/90; 28/60

FRACTURE FREQUENCY (5 10 15 20): 5/5; 15/3; 13/5

DOUBLE SHEAR

OTHER TEST RESULTS

PIEZOMETER INSTALLATION

Fault: 31.7–33.2; 43.3–44.5

GGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
45						
					3-B1	
47.10		B	C	87	~~2 B1~~	
					1-B1	
50						
					2-B1	
					0-B1	
52.10		B1	S	95	~~2 B1~~	
					3 B1	
					1 B1	
55					1 B1	
					3 B1	
57.10					1 B1	
		J1	C	0	0 B1	
					1 B1	
60						

ENGINEERING LOG

FAULT / BROKEN CORE / WATER LOSS / CEMENT

HARDNESS: B3

ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90): 45/60; 42/60; 43/60

FRACTURE FREQUENCY (5 10 15 20): 1 per; 13/5

WATER LOSS: 49.5 / 49.9

DOUBLE SHEAR

OTHER TEST RESULTS

PIEZOMETER INSTALLATION

LOGGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
610					2-B1								
					8-B1								
620					0-B1								
					1-B1				38/48	4/5			
					0-B1								
65													
		J1	C	8	2-B1								
660		B1	C	FF	2-B1								
		J1	W	0	4-B1								
					2-B1				42/66	12/15			
	15				1B1								
70					3B1								
715		J1	C	40	4-B1				6/54				
					2-B1								
					1-B1								
75													

GEOLOGIC LOG							ENGINEERING LOG							
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
75		JS	N	0	3-B1			R4					
76.0					4-B1								
78.0		J1	C	10	3-B1								
					0-B1				42/66				
					2B1					12/55			
80		J1	C	21	~~2B1~~								
		JS	W	0	3B1								
81.5					1-B1								
		JS	26+	50	2-B1 2-JS				47/54	14/45			
		J1	C	0	2B1								
85		J1	DM	11	3B1								
86.0		J1	C	0	1-B1								
					0-B1								
					0-B1				49/66	5/55			
90		J1	C	3	0-B1								

CORED BY DATE SHEET OF HOLE No.

GEOLOGIC LOG / ENGINEERING LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
90		J	W	6	2-B1									
91.5		J1	C	22	0B1									
		B1	S	48	2-B1									
		J5	W	55	4-J5 bedding 47°									
		J5	W	59	0-B1 2-J5									
		B1	W	52										
		J5	W	48	2-B5 · 5J5 slump structure									
		B5	W	50	2B1									
95					2B1 bedding 40°									
					J5 hairline.									
					bedding 0 to overturned.									
96.0					thrusting west assuming east dip of bedding fractures.						10 20 30 40 Scale change			
		B1	S	79				98.8						
		J1	W	24	bedding 55									
100		B1	W	74	2B1									
		B1	S	69	→ movement.									
		J5	W	18	1B1									
		B1	C	70	B5 N 50 J5 W 42 ⊥ to B5									
					4B1									
					⊖ net slip E-W									
		B1	S	70	3B1 S5 - downdip									
105					0B1									

LOGGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET OF HOLE No.

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
105		JS	W	17	B-B1, B5	
					SB1	
107.0		J5	C	0		
		B1	S	71	2B1	
		J5	C	S	3B1	
					3B1	
110					2B1	
					2B1	
		J1	W	96		
					2B1	
		B	C	82	3B1	
					0B1	
115					0B1	
					4B1	
117.0					1B1	
					3B1	
120					2B1	

ENGINEERING LOG

FAULT / BROKEN CORE / WATER LOSS / CEMENT / HARDNESS

ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)

FRACTURE FREQUENCY (10 20 30 40)

DOUBLE SHEAR

OTHER TEST RESULTS

PIEZOMETER INSTALLATION

94/120

23/40

96/120

28/40

DATE

GOLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (10 20 30 40)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
120					3B1				R3					
					2B1									
					~~3B1 B5~~									
		J1	W	O	2B1									
					1B1									
125					3B1									
		J1	W	19										
		J1	W	5	2B1 25									
127.0														
		5	C	O	1B1									
					4B1									
		J1	C	O	4B1					88				
130										120				
					1B1									
		B1	C	88	1B1									
					1B1									
					1B1									
135					1B1									

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL; 25 50 75 90)	FRACTURE FREQUENCY (10 20 30 40)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
135					6B1				R3					
		J1	S	44	4B1						24/2			
132.0					1B1									
		J1	W	0										
		J1	W	41	B1					11				
					1B1					12				
140					3B1									
		J1	W	0	6B1						22/2			
					8B1									
		J1	W	18										
		B1	W	81	2B1									
					1B1									
145		J1	C	3	0B1									
					0B1									
147.0					5B1									
		J1	C	11	4B1									
		J1	C	9										
150					1B1									

GEOLOGIC LOG

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES: TYPE	FRACTURES: INFILLING	FRACTURES: INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG
10				1B1		
				4B1		
				3B1		
				4B1		
15						
15½						
16						

ENGINEERING LOG

DEPTH	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.; 25 50 75 90)	FRACTURE FREQUENCY (10 20 30 40)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
10			R2	50/120	24/7			
15								
15½								
16								

COED. BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

K-FORDENG 76(3)A-2

319

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
0					tricone					
71					71					
		J1	C	45°				3/24		
	60/84				pulverized & oxidized coal, loss 6'/8.5' = 70%				N/A	
78										
		J3	C	22°	-3					
80		J2	B	58°	79.5					
		J2	C	0°						
	18/120	B3	C	80°	-3			53/100	0	
		B3	C	85°	-9					
88		J2	C	5°	-2					
	NIL	J2	C	52						
90		J2	C	12	-2				0	

LOGGED BY: RSC.
DATE: 3/11/76
PROJECT No.

Golder Associates

Hole No. 471
SHEET 1 OF 33

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 (15 10 5)	PERMEABILITY
90		J_2	c	65°	-3			19/48		
	N i c	B_3	c	85°	-2				0	
92		B_3	c	86°	-5					
		J_2	c	22°	-2.					
	N i 4	B_2	c	62°	-2.			56/120	0	
		B_3	c	90	-3					
100		B_2	c	72°	. 14					
		J_2	c	33°						
102		J_4	w	6°	B9-56°					
	72/120									
		B_2	c	60°	-2.			33/120	0	
110										
		J_2	E	30°	-2.					
112		B_3	c	90°	-3					
					1.5' pulverized core.					

LOGGED BY: RC
DATE: 3/11/76
PROJECT No.

Golder Associates

Hole No. 471
SHEET 2 OF 33

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
	15/120	B_2	B	60°	-2			68/120		
		I_4	wit	3°	B9 - very irregular					
		B_2	B	75-80°	-3				0	
120		I_2	C	5°	-2					
122		B_2	B	60°	-2.					
	54/120	B_2	B	70-74°	-10			22/120		
					B9-76°				N/A	
		I_2	C	5°	-2					
130										
132		B_3	C	90°	-3					
		I_1	B	20°	-					
	36/72	I_2	F	0°				NIL		
		B_2	B	70°					N/A	
138										
	Nil	I_2	C	20°	-2.			NIL	N/A	
140 140		B_2	B	72°	-6					

LOGGED BY: BC

DATE: 3/11/76

PROJECT No.

Golder Associates

Hole No. 471

SHEET 3 OF 33

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
140		B_3	C	90°						
	24/96	B_2	C	69°	-4.			22/96	2/96	
		J_2	K	10°						
		B_2	C	65°						
		B_3	C	85°	-3					
		J_4	I'w	30°						
		J_1	F	32°	-2.					
148		J_1	F	0°	12" long.			11/36		
	NIL	B_3	C	85°	-2				1/36	
150		B_2	C	71°	-4					
151		J_2	W	80°	-2					
		B_2	C	63°	-9					
	4/74	J_1	F	16°	-3			37/74	6/74	
		J_4	C	5°						
		J_2	C	55°						
		B_1	B	65°	-3					
158					core is pulverized					
160	30/36							0	N/A	
161		B_1	B	83°	-5					
		J_1	(K)	20°	K at 15° to long face axis					
	NIL	B_2	F	52°				18/84		

LOGGED BY: BC
DATE: 3/11/76
PROJECT No.

Golder Associates

Hole No. 471
SHEET 4 OF 33

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 15 10 5	PERMEABILITY
		B_2	B	63°	-6				6/64	
		B_2	B	86°	-4					
		J_2	C	0°						
168										
170	24/120	J_2	C	10°	-2			92/120		
		B_3	C	80°-75°	-8				0	
		B_2	B	65°	-4					
		B_3	C	90	-3					
		J_4	W	30°						
		J_2	F	39°	-1					
178		B_3	C	87	-3					
180		J_2	C	35°						
		B_2	C	70°	-6			56/120		
	NIL								0	
		B_2	C	62°	-5					
		J_4	C	10						
		J_2	C	37						
188		B_2	C	85°	-2					
		B_2	C	58	-3				0	
190										

LOGGED BY: _____

DATE: 3/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 5 OF 33

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
190		B_2	C	56° -3						
		B_3	C	85° -7						
		J_2	C	40°						
	NIL	J_2	C	48° -2				91/120	0	
198										
	18/24	J_1	B	10° -2	Coal					
		J						0	N/A	
200		J_2	C	6°						
		J_2	C	40°						
	NIL	B_2	B	70° -10				55/120	0	
		J_4	W	28°						
		J_2	C	40°						
208		B_3	C	85-90 -4						
		J_2	C	0						
210		J_2	C	16 -3						
	NIL	J_2	C	30 -3						
		B_2	B	68 -6				79/120		
		B_2	B	65 -5	B9=66°					

LOGGED BY: _____

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Golder Associates

Hole No. 871

SHEET 6 OF 33

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
		B_3	B	85					1/120	
218		S_1	F	16						
		S_1	F	30 + 2						
220		S_2	C	55				68/120		
		S_1	F	8 + 2					4/120	
	NIL									
		B_3	C	85/90 + 5						
		S_4	3	32°						
		B_2	B	63 + 8						
228		S_2	C	50 + 2						
230					B-9 62°					
		B_3	C	85 + 2				82/120		
	NIL	S_2	3	2° + 2					0	
		S_2	3	2° + 2						
		S_4		64°						
		B_2	B	68 + 18						
		S_2	3	20°						
		S_2	C	21 + 2						
238										
240		B_3	C	87						

LOGGED BY: _____

DATE: 7/12/76

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Golder Associates

Hole No. 471

SHEET 7 OF 33

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
240	60/120	J_2	C	45° ± 3	241.5 - 249 Coal pulverized. Lost ~~[illegible]~~ 7½' 67%			27/120	N/A	
		B_2	B	72° ± 4						
248	9/120	B_2	C	75° ± 6				71/120		
		B_2	B	70° ± 9	B - 9 - 70°					
258		B_3	C	80° ± 2						
260	NIL	J_2	C	3° ± 2	B9 - 72°			69/120		
		B_3	C	90° ± 4						
		B_1	B	70° ± 3						
		B_4	B	70° ± 2						
		J_2	C	26° ± 2						

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Golder Associates

Hole No. 471

SHEET 8 OF 33

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
	Nil	B_2	B	68	-10					
		J_4	W	34	-2				3/120	
268										
		J_2	C	0°	-2			92/120		
270		J_2	B	52°	-2					
		J_1	B	32°	-2					
					B-9 - 68°					
	Nil	B_2	B	68°	-9				2/120	
		B_3	C	80°	-2					
278										
		B_3	C	90						
282								91/72		
	Nil	B_2	B	66°	-2				0	
		B_2	B	75°	-11					
284										
		B_2	B	65°	-12					
	Nil							85/94	0	
		B_3	C	90°	-3					
290		J_2	C	18°	B9-66°					

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Golder Associates

Hole No. 471

SHEET 9 OF 33

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
290											
292											
	Nil	B_2	B	75°	-8			85/72		0	
		B_3	C	85°	-4						
298											
300											
	Nil	B_3	C	80°	-3			105/120			
					B9-67°						
		B_2	C	70°	4					0	
		B_2	B	68°	10						
		J_2	C	11°							
308											
		B_2	C	75°	[redacted]-11						
					B9 - 74°						
312		B_3	C	85°	-2						
	Nil	B_2	B	75°	-[redacted]5			108/120		0	
		J_4	W	24°	-3						
					B9 - 76°						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. ~~15~~ 971

SHEET 10 OF 33

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
318									0	
		B_3	C	85°	-4					
320		J_2	C	38°						
		B_2	B	70°	-2					
	36/120				pulverized core.	320.5		29/120		
					Coal lost 4'/11' ~38%				N/A	
		B_1	B	72°	-9					
		J_1	B	12°						
328		J_1	B	0°						
330		B_1	B	70°	-10					
		J_1	B	10°		331.6		26/120	16/120	
	15/120	B_1	B	70-75°	-5					
		B_2	B	75°	-6					
		B_2	B	70°	-6					
338		B_2	B	71°	-9					
		J_2	C	0°						
340										

LOGGED BY: _____

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PROJECT No. _____

Golder Associates

Hole No. 8871

SHEET 11 OF 33

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
340		J_4	~~W~~	18°	-2.			86/20		
	NIL	B_2	B	68°	-4				0	
		B_2	B	80	-5					
348		B_3	C	85°	-11					
350		B_4	W	80°	-3					
		B_2	W	80°	-3				0	
	NIL	J_4	W	24°				79/20		
		B_2	C	78°	-8					
358		B_3	C	87°	-5					
360		J_2	C	6°						
	NIL	B_2	C	68°	-5			85/20		
		B_2	C	80°	-11				0	
		J_2	C	66°						

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 12 OF 33

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
	NIL									0	
368											
		B_2	C	80	-4						
370		B_4	W	74°	-1						
	NIL	S_2	C	18°	-3				110/120	0	
		S_2	C	9°							
		B_2	C	74	-3						
						B9-72					
378											
380											
		B_2	B	70	-13						
	NIL					B9-71			114/120	0	
		B_3	C	90	-1						
		S_4	W	31	-2.						
~~380~~ 388											
		B_2	C	77°	-3						
390											

LOGGED BY: _____

DATE: 8/12/76

PROJECT No. _____

Golder Associates

Hole No. 871

SHEET 13 OF 33

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
390		B_2	C	76°	-3						
	52/120	B_3	C	86°	-2	391		13/120	N/A		
					coal						
		J_1	B	50°	-3						
		J_1	B	0°	-3						
398		J_1	B	0°	-2	loss 7.5'/15 = 50%					
400									N/A	due to loss & broken core.	
	36/120	B_1	B	68°	-17	loss 10'/20' = 50%		4/120			
		J_2	B	54°	-3						
		B_2	B	70°	-2	406					
408											
		B_3	C	87°	-9						
410	30/120	B_3	C	72°	-6	410.5		59/120	0		
		J_4	W	21°	-1						

LOGGED BY: _____

DATE: 8/12/76

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Golder Associates

Hole No. 971

SHEET 19 OF 33

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 (15 10 5)	PERMEABILITY
		Jq	W	21°	-2				0	
418										
20		B3	C	86°	-9			57/120		
		B1	B	71						
	16/120	J2	C	5°	-9				1/120	
		Jq	C	5°	-2					
		B2	C	80°	-10					
		B3	C	88	-2.					
		B2	B	42°	-2	B9-60				
428										
30		B3	C	80	-6					
		B2	C	73	-8					
	NIL	Jq	W	18°	-2.			80/120	0	
		J2	C	39		B9-63				
		B2	C	70°	-8					
438										
	NIL	B2	C	63						
40		B2	C	79.						

LOGGED BY: _____

DATE: 8/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 15 OF 33

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
440		B_L	B	75-80	-5						
		J_4	W	14°	-2			87/120	10/120		
	N/L	B_2	B	70	-2						
		J_1	B	52°	-3						
		J_2	B	22°	-2						
		B_1	B	75°	-7						
		B_3	C	90	-3						
448		J_2	B	51	-4						
450	60/108	B_3	C	90	-9			10/120	N/A	due to large am't. Broken & lost core.	
						rounded pieces, drill induced?					
457		B_1	B	80°							
		B_2	C	85°	-7						
		J_2	C	3°	-2				1/120		
460	N/L	B_2	B	75°	-15	B9-74		87/120			

LOGGED BY: _____

DATE: _____

PROJECT No: _____

Golder Associates

Hole No. 471

SHEET 16 OF 33

DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS
467					
		B_2	B	75	-12
470		J_2	c	17°	-5
	N14				
		J_4	c	16°	
		B_2	B	70	-12 B9-72°
		J_2	w	17°	-1
477		J_2	c	22°	-2
		B_2	B	70	-19 B9-70°
480		J_2	c	18°	-2
	12/132	J_2	c	0°	2' long.
		J_4	c	8°	-28" long
		J_2	w	20°	-2
		B_2	B	60°	-~~B~~6 B9-63°
488		B_3	c	90	
		B_2	w	77	
490					

GRAPHIC LOG: BRECCIA/GOUGE; BROKEN CORE

HARDNESS: 4 3 2

ROCK QUALITY DESIGNATION: 75 50 25

79/120

-8/132

72/48

NATURAL FRACTURE FREQUENCY: <5 10 5

PERMEABILITY

LOGGED BY: _____

DATE: 9/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 17 OF 33

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
490	NIL	J_1	R	55								
		J_2	W	26°								
		B_2	B	70°	-7	39-72°					1/48	
492												
		J_2	B	16°								
		B_2	B	72°	-8					46/60	0	
	NIL											
		J_2	C	0°		15"/ong.						
		J_4	C	30°	-2							
498												
		J_2	W	26								
500		J_4	W	26								
		B_2	B	73-75°	-8							
										106/120	0	
		B_2	C	73-75°	-5							
	NIL											
		J_4	C	18°								
		J_2	C	18°								
508												
		J_2	W	11°		39-72°						
510		B_2	B	72°	-9					93/120	0	
	16/120											

LOGGED BY: _____

DATE: 9/12/76

PROJECT No: _____

Golder Associates

Hole No. 97 C

SHEET 18 OF 33

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
		B_2	c	81°	-3				0		
		B_2	B	81	-4						
518											
		B_2	c	80	-7						
520	30/120	S_2	c	54°				56/120	N/A	broken & lost core	
		S_2	c	0°	-4						
		B_1	B	84°	-2						
528											
530	24/96	B_1	B	80°	-14			27/96	N/A		
		S_1	B	22°	-3						
536		S_1	B	32°							
	18/120	B_1	B	32°	-10			71/120			
540											

528 — coal lost 3½'/14 ~ 25% — pulverized

LOGGED BY: _____

DATE: 9/12/76

PROJECT No. _____

Golder Associates

Hole No. 971

SHEET 19 OF 33

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
540		J_2	c	22°					11/120	
		B_2	c	86	-1					
		J_2	c	52°						
		B_2	c	74	-2					
546										
		B_2	B	70°	-7					
550	12/132	B_2	B	81°	-8			75/132	11/132	
		J_2	B	63°						
		B_1	B	80°	-11					
					1/4" coal seams					
557		B_1	B	80°	-9					
		J_1	B	52°						
560		J_2	B	21°						
		B_3	c	90°	-2				5/120	
	NIL	J_4	W	52°						
		B_4	W	86°				87/120		
		J_2	c	50°						
		B_3	c	86	-1					
		B_2	B	73°	-7					

542.2

LOGGED BY: _____

DATE: 9/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 20 OF 33

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
		J_2	C	0°	-1					
		J_4	W	0°						
567										
		J_4	W	3°						
570		B_2	C	85°	-10				0	
	NIL							115/120		
		J_4	C	16°	-16"/long					
					B9-85°					
		B_2	C	78°	-3					
		J_2	C	6°						
577										
		J_2	W	22°	-3					
		B_2	B	75°	-5					
580		J_4	C	20°	-1					
	NIL							114/120	0	
		J_2	W	30°						
		B_2	C	75-80°	-6					
587										
		J_2	C	2°						
		J_2	W	35°	-1					
	NIL	B_2	B	26°						
590								9/120		

LOGGED BY: _____

DATE: 9/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 21 OF 33

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
590		J_2	W	12						
	~1%	J_4	W	12				91/120	7/120	
		B_1	B	75-80°	-7					
		B_2	B	76°	-5					
		B_3	C	90	-4					
					B9-78°					
597										
		B_3	C	90°	-4					
					B9-84°					
600	18/132	B_2	B	78	-2					
		B_1	B	86°	-8			76/132	13/132	
		J_1	B	52°	-2	Coal seam				
		B_2	B	85	-2					
		B_1	B	80°	-3					
608										
		J_4	B	62°	-3					
610		J_4	B	0°						
	8/120								8/120	
		B_1	B	82°	-5			76/120		
		B_3	C	85°	-3					
		J_2	B	52°						

LOGGED BY: _____

DATE: 9/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 22 OF 33

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 15 10 5	PERMEABILITY
		B_2	B	78°	-9						
618											
620		J_2	C	2°	-2						
		B_3	C	90°	-2						
	NIL	B_2	C	82°	-9				94/120	4/120	
		J_2	W	15°	-3						
		J_1	B	50°	1						
		B_2	B	62°	-2						
		B_4	W	90°	-2						
		B_1	B	90°	-1						
628		J_2	W	6°	-3						
630		J_2	B	61°		B9-68					
		B_2	C	70°	-9				67/120	3/120	
		B_1	B	70°	-2						
	NIL	B_3	C	86							
		B_1	B	80°	-4						
		B_3	C	83							
638		B_1	B	73°	-7						
640		J_1	B	0°	-2						

LOGGED BY: _____

DATE: 10/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 23 OF 33

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
640		J_2	c	19°						
		J_4	w	11°				59/120		
	22/120	B_3	c	90					4/120	
		B_2	c	78°						
		J_4	c	8°	-3					
		J_2	c	8°	-1					
		B_1	B	76°	-4					
648		J_2	c	0°	-3					
650		B_2	B	75	-6					
		B_2	c	80	-6			106/120		
	NIL									
		J_2	c	28°					0	
658										
660		B_2	c	80-85°	-12					
		B_2	B	78°	-3			112/120	0	
	NIL									

LOGGED BY: _____

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PROJECT No. _____

Golder Associates

Hole No. 871

SHEET 24 OF 33

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
668									0	
670	NIL	B_2	B	70°	6			97/120	0	
		J_2	C	35						
		B_2	C	66	-6					
		J_2	C	0°						
		J_4	C	6°						
678		B_2	B	74°	-3					
680		J_2	C	10°	-5					
		J_4	C	10°	-6					
	NIL	B_2	B	65°	-9	B9-61°		95/120	0	
		J_2	C	16°						
688		J_2	C	12°						
690										

LOGGED BY: _____

DATE: 10/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 25 OF 33

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 (15 10 5)	PERMEABILITY
690		B_1	B	80	-4					
		B_1	B	72	-7					
		B_4	B	irregular coal seams						
	NIL	B_2	B	73°	-2			100/120	1/20	
					B9-730					
698										
		J_1	B	50°						
700										
	4/20	B_3	C	90°	-5			80/120	1/20	
		B_2	B	80°	-7					
		B_2	C	86°	-8					
708										
		B_2	C	87°	-4					
710										
	NIL	B_2	B	80°	-11			101/120		
		J_2	C	32°	-2					

LOGGED BY: _____

DATE: 10/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 26 OF 33

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 15 10 5		PERMEABILITY
		J_2	c	15°								
718												
720		J_4	w	16°	-4							
		J_2	c	15°						116/120	0	
	N/C	J_4	w	0°								
		B_2	c	80-84°	-10							
728												
730												
		B_2	c	81°	-3					113/120	0	
	N/C	J_4	w	16°	-2							
		B_2	B	70°	-10							
738					B9-79°							
		B_2	c	83								
740		B_2	c	76	-2							

LOGGED BY: _____

DATE: 13/12/76

PROJECT No. _____

Golder Associates

Hole No. 47/

SHEET 27 OF 33

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
740		S_1	B	50°	-6					
		B_1	B	67°						
		B_4	B	67°	-3					
	N/C							73/120	7/120	
		B_2	C	70°	-4					
		S_4	W	15°						
		B_2	C	74°	-5					
748		B_3	C	90°	-2					
750		B_2	C	75°	-5					
		B_2	B	75°	-7					
	N/C							87/120	3/120	
		S_2	B	51°	-2					
		B_1	B	75°	-3	758				
758						758				
		B_3	B	90°	-3					
760		S_1	B	90°	-1	Coal lost 4'/8' ~50%		27/120	11/120	
	48/120	B_1	B	75°	-5					
		S_1	B	15°	-2					
		B_1	B	80°	-3					

LOGGED BY: _____

DATE: 13/12/76

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Golder Associates

Hole No. 471

SHEET 28 OF 33

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 (15 10 5)		PERMEABILITY
		B_2	B	73°	-2		766					
		J_2	C	4°								
768		B_2	C	75	-2							
770	36/60	J_2	C	0°					15/60	1/60		
		B_1	B	72°								
		B_3	C	90°								
773							773					
	12/60	J_1	B	30°	-3	Coal				N/A	broken core	
		B_1	B	75°	5	lost 3'/8' = 37%			4/60			
		J_1	B	40°	-1							
778												
		J_1	B	52°								
780		B_3	B	87°	-3							
		J_1	B	56°			781			N/A	Broken & lost core.	
	98/120	J_2	C	41°	-3				42/120			
							785					
		B_2	C	75°	-8	lost 2'/3' = 66%						
		B_3	C	87°	-2		788					
788												
		J_2	C	57°								
790		B_2	B	72°	-2							

LOGGED BY: _____

DATE: 13/12/78

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 29 OF 33

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
790		B_2	C	80°	-10					
		B_1	B	76°	-4				9/120	
		B_9	B	75°	-6					
	10/120							72/120		
		J_2	B	56°	-2					
		B_3	C	90						
		B_2	B	74°	-4					
798										
		B_2	B	76°	-4					
800		J_4	W	22°	-4					
		J_1	B	32°				112/120	3/120	
	NIL	B_2	B	70°	-4					
		B_1	B	70°	-2	B9-72°				
808										
		B_2	B	65°	-70° -7					
840		B_1	B	72°	-5				5/120	
	NIL	B_2	C	81°	-2					
		J_4	W	19°	-2			106/120		

LOGGED BY: _____

DATE: 13/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 30 OF 33

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
	NIL									
818										
820		B_2	B	75°	-7			112/120	1/120	
	NIL	B_1	B	76°						
		B_2	B	81°	-5					
		S_4	W	29°						
828										
		B_2	B	70°	-11					
830		B_3	C	90	-2			88/108	0	
	NIL	S_2	C	50°	-3					
		B_2	B	82°	-7					
837										
		B_3	C	90	4					
840		B_1	B	85°	-7			67/120		

LOGGED BY: _____

DATE: 13/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 31 OF 33

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
840		B_2	B	70-75°	-12						
	NIL	J_2	C	0°					10/20		
		B_1	B	85°	-3						
		J_2	C	51°	-3						
847						847					
		J_1	B	30°							
850	84/108	J_1	B	0°	-3				N/A	lost ½ broken core	
		B_1	B	83°							
		B_1	B	67°				10/108			
						Coal lost 13'/20.5' ~ 65%					
856	6/24	B_1	B	75°	-6			0	N/A		
		B_3	B	90							
858						Coal is generally broken by drill induced breaks.					
860		J_1	B	30°	-3						
	36/60	J_1	B	16°				0	N/A		
		B_3	B	40							
		B_2	B	83°	-2						
863		J_1	B	30							
	18/36	J_1	B	56°				0	N/A		

LOGGED BY: _____

DATE: 14/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 32 OF 33

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
		B_3	B		– irregular, drill induced					
866	12/24	S_1	B	42				0	N/A	
		S_1	B	0						
		B_2	B	85						
868		B_3	C	90	867.5					
		S_2	C	16°	-2					
870		S_2	C	26°	1					
	18/72	B_2	B	81°	-9			25/72	1/72	
		B_3	C	90	-1					
		B_1	B	90						
874		S_2	B	36°						
		B_2	C	76°	-13					
	NIL							96/120	0	
880										
884					T.D.					
890										

LOGGED BY: _____

DATE: 14/12/76

PROJECT No. _____

Golder Associates

Hole No. 471

SHEET 33 OF 33

Perhaps – somewhere between 450 & 460 ?

K-FORDING 76(3)A-2

GEOLOGIC LOG							ENGINEERING LOG											
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
		Bl Jl	C C	60° 45°	Slick. (Jl C 15°)						11/3 joint bed.		319	
8		Jl Bl	B B	30° 50°						✓	12/5			
8½ 8½		Jl Bl	M C	20° 45°	Jl S 20°									
8½		Bl Jl	S S	60° 30°						M	10/5			
9 9 12		Jl Bl Jl	W S W	10° ~~85°~~ 7°	Jl W 5°									
95		Bl Jl Jl Bl	S W S W	70° 10° 60° 50°	30°									

SHEET ____ OF ____ HOLE No. ??

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
95'		J1	SW	10°	+40°					✓	32/5			
		J1	SW	20°										
		J1	SW	35°										
		J1	N	25°										
		J1	WM	15°										
		J1	S	15°			V			V	10/5			
130					high angle jointing disappears									
								✓		✓				
165														
									✓					
210														

GGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
115		B1	S	60°						V	13/5			
		~~B1~~	~~S~~		bedding 60°									
117														
		B	S	70°						V	13/5			
		J1	S	40°										
120														
122														
		J1	S	35°						V	4/5			
125														

SHEET ____ OF ____ HOLE No. ____

GOLDER ASSOCIATES

GEOLOGIC LOG								ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE / WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
125		J!	e	32°									
									✓	4/5			
130		Bl	Bl	SB	40°								
132		B	Bl	B	55°								
		Bl	e		60°				✓	5/5			
155													
157 / 157.5		Bl	W		60°								
160													

GGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG											
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR, POOR, FAIR, GOOD, EXCEL.) (25 50 75 90)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
42									R4	FAIR ✓	9/5			
45		B1	C	70°										
		V1	C	15°										
47										FAIR ✓ GOOD ✓	11/5			
		B1	S	75°										
50		B1	C	70°					R4	EXCEL. ✓				
		B1	SM	70°							8/5			
52		B1	C	70°										
		B1	C	75°										

DATE

COLDER ASSOCIATES

SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG							ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V.POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
		Bl	C	65°						V15	5/5			
157		Bl	S	75°										
		Bl	S	80							7/5			
160		Bl	M	75°										
162		Bl	W Sm	75°										
		Bl	S	75°										
165		Jl	C	10°						✓	11/5			
		Bl	W	60°	Jl C 10°									
167		Bl	S	60°										
		Bl	W	80°										
		Jl	C	35°										
170														

SHEET ____ OF ____ HOLE No. ____

GOLDER ASSOCIATES

GEOLOGIC LOG							ENGINEERING LOG										
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
		Jl	W	5°					24 to 25					
172		Bl Jl Jl	S W W	75° 15° 0°	@ joints ~~Bl~~ Bl W 70°; present for 3'					✓	8/5			
173 174		Bl	S SM	55° 65						✓	15/5			
177		Fl	S	40°	Bl° S 65°									
		Bl Jl	S W	65 to 87° 10°						✓				
182		Jl Jl	W W	10° 15°							9/5			
		Jl Bl Jl	W S W	25° 75° 15°										

GGED BY _____ DATE _____ COLDER ASSOCIATES SHEET ____ OF ____ HOLE No. _____

GEOLOGIC LOG							ENGINEERING LOG								
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25 POOR 50 FAIR 75 GOOD 90 EXCEL.)	FRACTURE FREQUENCY	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
185					bedding ≈ flat					✓	13/5			
		Jl	W	40°										
187		Jl	c	15°	≈									
		Jl	W	30°	≈	45°								
190		Bl	S	70°						✓				
					calcite fracture network						16/5			
192														
195														
197	2006	2020			2070 - 2120 - 2170 - 2220 - 2270									

GGED BY _____ DATE _____ GOLDER ASSOCIATES SHEET ____ OF ____ HOLE No. ____

GEOLOGIC LOG								ENGINEERING LOG									
DEPTH	PERCENT CORE LOSS (25 50 75)	FRACTURES TYPE	FRACTURES INFILLING	FRACTURES INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	FAULT / BROKEN CORE	WATER LOSS / CEMENT	HARDNESS	ROCK QUALITY DESIGNATION (V. POOR 25, POOR 50, FAIR 75, GOOD 90, EXCEL.)	NAT. FRACTURE FREQUENCY /5ft. (5 10 15 20)	DOUBLE SHEAR	OTHER TEST RESULTS	PIEZOMETER INSTALLATION
225														
227														
					EXAMPLE									
450		B1	F	10°					R3	35	12			
	5	J1	C	90										
		J5	W	80°										
455					J5						30			
					← 0.45 / 0.38									

GGED BY _____ DATE _____ **GOLDER ASSOCIATES** SHEET ____ OF ____ HOLE No. _____

Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.,
P.O. Box 100
Elkford,B.C.

(8)

INVOICE NO. 2-123
PROJECT NO. V 76027
DATE: Feb.29/76

ATTENTION: Mr. J. Popowich,Chief Engineer

TO PROFESSIONAL SERVICES RENDERED to February 29th,1976

RE: Review of Haul Road Design, Block II, Elkford

Personnel:

ASSOCIATE			
D. B. Campbell,P.Eng.		2.0 hrs @ $45.00/hr	$ 90.00
SENIOR ENGINEERS			
N. Skermer		34.5 hrs @ $39.80/hr	1,373.10
P. Stacey		4.0 hrs @ $34.02/hr	136.08
INTERMEDIATE ENGINEER			
R. Hillman		4.5 hrs @ $24.47/hr	110.11
JUNIOR ENGINEER			
D. Wood		6.0 hrs @ $21.02/hr	126.12
SPECIALIST TECHNICIAN			
K. Inouye		2.5 hrs @ $21.04/hr	52.60
			$ 1,888.01
EXPENSES			
Computer Costs	$ 189.26		
N. Skermer,Exp.A/C	52.67		
Lloyd's Travel,Skermer	104.25		
Xerox 10 @ 15¢ each	1.50		
	$ 347.68		
5% Handling Charges	17.38		
	$ 365.06		$ 365.06

TOTAL THIS INVOICE . . . . . $ 2,253.07

D.K. Johnson
Code 09-3971

MAR 30 1976
LH

MAR 31 1976
05-3971

E. & O.E.

Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

(9) FC 30291

Fording Coal Ltd.,
P.O. Box 100
ELKFORD, B.C.

INVOICE NO. 2-122
PROJECT NO. V 76026
DATE: Feb.29/76

ATTENTION: Mr. J. Popowich, Chief Engineer

TO PROFESSIONAL SERVICES RENDERED to February 29th, 1976

RE: Review of Haul Road and Waste Dump Design
Kilmarnock K-4

Personnel:

ASSOCIATE		
D. B. Campbell, P.Eng.	9.0 hrs @ $45.00/hr	$ 405.00
SENIOR ENGINEERS		
N. Skermer	44.0 hrs @ $39.80/hr	1,751.20
P. Stacey	1.5 hrs @ $34.02/hr	51.03
JUNIOR ENGINEER		
P. Robertson	31.0 hrs @ $22.50/hr	697.50
SENIOR DRAFTSMAN		
W. Takasaki	.5 hr @ $23.46/hr	11.73
INTERMEDIATE DRAFTSMAN		
S. Horvath	5.5 hrs @ $17.49/hr	96.19
		$ 3,012.65

EXPENSES		
Computer Costs	$ 946.70	
Tilden Rent A Car	122.15	
Crystal Finish	.82	
Xerox 29@15¢each	4.35	
	$1074.02	
5% Handling Chgs.	53.70	
	$1127.72	$ 1,127.72

TOTAL THIS INVOICE . . . . .$ 4,140.37

O.K. J. Popowich 09-3911.

MAR 31 1976 05-3971

E. & O.E.

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Fording Coal Ltd.,
P.O. Box 100
ELKFORD, B.C.
V5B 1H0

10

INVOICE NO. 2-137
PROJECT NO. V 76314
DATE: Feb.29/76

ATTENTION: Mr. J. Popowich, Chief Engineer

FC 30291

TO PROFESSIONAL SERVICES RENDERED to February 29th, 1976

RE: Kilmarnock "K-4" Pit Design Review

Personnel:

PRINCIPAL&ASSOCIATE		
D.B. Campbell, P.Eng.	3.5 hrs @ $45.00/hr	$ 157.50
E. Hoek	6.0 hrs @ $50.00/hr	300.00
SENIOR ENGINEERS		
J. Marlon-Lambert	.5 hr @ $36.44/hr	18.22
P. Stacey	29.0 hrs@ $34.02/hr	986.58
INTERMEDIATE ENGINEER		
L. Longair	1.0hr @ $20.56/hr	20.56
JUNIOR ENGINEER		
D. Fieber	7.5hrs @ $21.04/hr	157.80
SPECIALIST TECHNICIAN		
K. Inouye	1.5hrs @ $21.04/hr	31.56
INTERMEDIATE DRAFTSMAN		
I. Templeman	1.5 hrs @ $26.16/hr	39.24
REPORT PREPARATION	2.0 hrs @ $14.78/hr	29.56
		$ 1,741.02

EXPENSES		
Computer Costs	$ 48.88	
B.C. Telephone	2.94	
Black Top Cabs	19.00	
Vancal	2.94	
Crystal	4.26	
P.Stacey, Exp.A/C	88.94	
Xerox 8@15¢each	1.20	
	168.16	
5% Handling Chgs.	8.40	
	176.56	$ 176.56

APR 13 1976
05-3971

TOTAL THIS INVOICE . . . . . $ 1,917.58

O.K. J.P. charge to 09-3971

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Fording Coal Ltd.,
P.O. Box 100
ELKFORD, B.C.

INVOICE NO. 3-96
PROJECT NO. V 75349
DATE: Mar.31/76

ATTENTION: Mr. S. Campbell, Chief Engineer

(11)

TO PROFESSIONAL SERVICES RENDERED to March 31st, 1976

RE: Our Project V 75349, Your P.O. #FC 30291
(P.O. Previously covered V75325

Personnel:

SENIOR PRINCIPAL			
C. O. Brawner		4.0 hrs @ $50.00/hr	$ 200.00
PRINCIPAL			
E. Hoek		11.0 hrs @ $50.00/hr	550.00
SENIOR ENGINEERS			
I. Miller		1.5 hrs @ $30.77/hr	46.15
P. Stacey		48.5 hrs @ $34.02/hr	1,649.97
SENIOR DRAFTSMAN			
W. Takasaki		7.5 hrs @ $23.46/hr	175.95
INTERMEDIATE DRAFTSMAN			
S. Horvath		1.5 hrs @$17.49/hr	26.23
JUNIOR DRAFTSMEN			
J. Leary		.5 hr @ $10.09/hr	5.04
S. Wilcox		7.0 hrs @ $12.14/hr	84.98
REPORT PREPARATION			
R. Eadie		.5 hr @ $12.54/hr	6.27
S. McMinn		4.0 hrs @ $15.55/hr	62.20
			$ 2,806.79
EXPENSES			
B.C. Telephone	$ 5.58		
Dominion Blueprint	6.23		
Xerox 50 @ 15ceach	7.50		
	$19.31		
5% Handling Charges	.97		
	$20.28		$ 20.28

TOTAL THIS INVOICE . . . . . $ 2,827.07

05-3971

E. & O.E.

Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.,
P.O. Box 100
ELKFORD, B.C.

ATTENTION: Mr. S. Campbell, Chief Engineer

INVOICE NO. 4-88
PROJECT NO. V75349
DATE: Apr.30/76

TO PROFESSIONAL SERVICES RENDERED to April 30th, 1976

RE: Our Project V 75349, Your P.O. #FC 30291
(P.O. Previously covered V 75325)

Personnel:

SENIOR ENGINEER			
P.F. Stacey	4.0 hrs @ $34.02/hr	$	136.08
JUNIOR ENGINEERS			
D. Fieber	9.5 hrs @ $21.04/hr		199.88
A. Lumsden	2.0 hrs @ $20.76/hr		41.52
		$	377.48

EXPENSES

B.C. Telephone	$ 12.78		
5% Handling Charges	.64		
	$ 13.42	$	13.42

TOTAL THIS INVOICE. . . . . $ 390.90

05-3971

E. & O.E.

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Fording Coal Ltd.,
P.O. Box 100
ELKFORD, B.C.

INVOICE NO. 3-125
PROJECT NO. V 76026
DATE: MAR.31/76

ATTENTION: Mr. J. Powowich, Chief Engineer

FC 30291-

TO PROFESSIONAL SERVICES RENDERED TO MARCH 31st, 1976

RE: Review of Haul Road And Waste Dump Design
Kilmarnock K-4

Personnel:

PRINCIPAL&ASSOCIATE		
D. B. Campbell	3.0 hrs @ $45.00/hr	$ 135.00
SENIOR ENGINEER		
N. Skermer	20.0 hrs @ $39.80/hr	796.00
JUNIOR ENGINEER		
P. Robertson	19.5 hrs @ $22.50/hr	438.75
SENIOR DRAFTSMAN		
W. Takasaki	.5 hr @ $23.46/hr	11.73
INTERMEDIATE DRAFTSMEN&TECHNICIANS	8.5 hrs @ $20.31/ hr	172.63
JUNIOR TECHNICIAN		
T. Francis	.5 hr @ $15.14/hr	7.57
REPORT PREPARATION		
R. Eadie	1.0 hr @ $12.54/hr	12.54
J. Heyes	1.5 hrs @ $15.50/hr	23.25
		$ 1,597.47

EXPENSES		
Dominion Blueprint	$ 4.09	
Superior Reproductions	3.84	
Vancal Reproductions	2.94	
Xerox 93@15¢each	13.95	
Computer Costs	73.70	
	98.52	
5% Handling Chgs.	4.93	
	103.45	$ 103.45

05-3971 (15)

TOTAL THIS INVOICE . . . . . .$ 1,700.92

E. & O.E.

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CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.,
P. O. Box 100
ELKFORD, B.C.

ATTENTION: Mr. J. Popowich, Chief Engineer

INVOICE NO. 4-109
PROJECT NO. V 76026
DATE: Apr.30/76

TO PROFESSIONAL SERVICES RENDERED to Aptil 30th, 1976

RE: Review of Haul Road And Waste Dump Design
Kilmarnock K-4

Personnel:

PRINCIPAL

D. B. Campbell	.5 hr @ $45.00/hr	$	22.50

TOTAL THIS INVOICE. . . . . $ 22.50

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05-3971

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CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.,
P. O. Box 100
ELKFORD, B.C.

INVOICE NO. 5-100
PROJECT NO. V 76027
DATE: May 31, 1976

ATTENTION: Mr. J. Popowich, Chief Engineer

FC 30291.

TO PROFESSIONAL SERVICES RENDERED to May 31, 1976

RE: Review of Haul Road Design, Block II, Elkford

Personnel:

JUNIOR ENGINEER			
P. K. Robertson		15.0 hrs @ $22.50	$ 337.50
INTERMEDIATE DRAFTSMAN			
S. Horvath		3.0 hrs @ $17.49	52.47
			$ 389.97
EXPENSES			
B. C. Telephone	$ 2.92		
5% Handling Charge	.15		
	$ 3.07		$ 3.07
	TOTAL THIS INVOICE		$ 393.04

05-3971. 13

E. & O.E.

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CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.
P. O. Box 100
ELKFORD, B. C.

INVOICE NO. 5-78
PROJECT NO. V75349
DATE: May 31, 1976

ATTENTION: Mr. S. Campbell
Chief Engineer

FC 30291

TO PROFESSIONAL SERVICES RENDERED to May 31, 1976

RE: Our Project V 75349, Your P. O. #PC 30291
(P.O. Previously covered V 75325)

Personnel:

JUNIOR ENGINEER			
D. F. Fieber		2.0 hrs @ $21.04	$ 42.08
JUNIOR TECHNICIANS AND DRAFTSMEN			
S. C. Wilcox		2.5 hrs @ $12.14	30.35
			$ 72.43
EXPENSES			
B. C. Telephone	$ 24.72		
Telex	12.00		
	$ 36.72		
5% Handling Chg.	1.84		
	$ 38.56		$ 38.56
TOTAL THIS INVOICE			$ 110.99

05 3971
16

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CONSULTING GEOTECHNICAL ENGINEERS

FC30291

Fording Coal Ltd.,
P.O. Box 100
ELKFORD, B.C.

INVOICE NO. 3-126
PROJECT NO. V 76027
DATE: Mar.31/76

ATTENTION: Mr. J. Popowich, Chief Engineer

TO PROFESSIONAL SERVICES RENDERED to March 31st, 1976
RE: Review of Haul Road Design, Block II, Elkford

Personnel:

ASSOCIATE		
D. E. Campbell	4.0 hrs @ $45.00/hr	$ 180.00
SENIOR ENGINEERS		
H. Skerner	30.0 hrs @ $39.80/hr	1,194.00
P. Stacey	9.5 hrs @ $34.02/hr	323.19
INTERMEDIATE ENGINEER		
R. Willman	12.0 hrs @ $24.47/hr	293.64
JUNIOR ENGINEERS		
P. Robertson	10.0 hrs @ $22.50/hr	225.00
D. Wood	7.0 hrs @ $21.02/hr	147.14
SENIOR DRAFTSMAN		
W. Takasaki	3.0 hrs @ $23.46/hr	70.38
INTERMEDIATE TECHNICIANS & DRAFTSMEN		
S. Horvath	.5 hr @ $17.49/hr	8.75
Miscellaneous Persons	10.0 hrs @ $20.31/hr	203.10
JUNIOR DRAFTSMEN		
J. Leary	1.0 hr @ $10.09/hr	10.09
S. Wilcox	5.0 hrs @ $12.14/hr	60.70
REPORT PREPARATION		
R. Eadie	1.0 hr @ $12.54/hr	12.54
S. McMinn	3.5 hrs @ $15.55/hr	54.42
		$ 2,782.95

EXPENSES		
B.C. Telephone	$ 19.74	
Crystal Finish	2.79	
Superior Reproductions	13.89	
Vancal Reproductions	27.98	
xerox 25 @ 15¢each	3.75	
	68.15	
5% Handling Charges	3.40	$ 71.55
	71.55	

TOTAL THIS INVOICE . . . . . $ 2,854.50

05-3971 (17)

E. & O.E.

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Fording Coal Limited,
P.O. Box 100,
Elkford, B.C.

INVOICE NO. 6-119

PROJECT NO. V76027

Attention: Mr. J. Popowich, Chief Engineer

DATE: June 30, 1976.

FC 30291

TO PROFESSIONAL SERVICES RENDERED to June 30th, 1976.

RE: Review of Haul Road Design, Block II, Elkford

Personnel:

JUNIOR ENGINEER

P.K. Robertson	6.0 hrs @ $22.50	$ 135.00

JUNIOR DRAFTSMAN

S.C. Wilcox	3.0 hrs @ $12.14	36.42

REPORT PREPARATION

R.M. Eadie	1.0 hr @ $12.54	12.54
		$ 183.96

EXPENSES

Vancal Reproductions Ltd.	$ 4.31	
Dominion Blueprint	11.07	
Xerox 2 @ 15¢	.30	
	$15.68	
5% Handling Chgs.	.78	
	$16.46	$ 16.46

TOTAL THIS INVOICE .....$ 200.42

05-3971

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E. & O.E.

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CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.,
P. O. Box 100
ELKFORD, B.C.
V5B 1H0

INVOICE NO. 3-162
PROJECT NO. V 76314
DATE: Mar.31/76

FC 30291

ATTENTION: Mr. J. Popowich, Chief Engineer

TO PROFESSIONAL SERVICES RENDERED to MARCH 31st,1976

RE: Kilmarnock "K-4" Pit Design Review

Personnel:

SENIOR ENGINEER		
P.F. Stacey	23.0 hrs @ $34.02/hr	$ 782.46
JUNIOR ENGINEERS		
D. Fieber	1.0 hr @ $21.04/hr	21.04
A. Lumsden	.5 hr @ $20.76/hr	10.38
INTERMEDIATE TECHNICIANS & DRAFTSMEN		
L. Lee	1.0 hr @ $20.11/hr	20.11
R. Quist	.5 hr @ $18.95/hr	9.47
Miscellaneous Persons	8.0 hrs @ $20.31/hr	162.48
JUNIOR DRAFTSMAN		
J. LEary	3.0 hrs @ $10.09 / hr	30.27
REPORT PREPARATION		
R. Eadie	.5 hr @ $12.54/hr	6.27
J. Heyes	3.0 hrs @ $15.50/hr	46.50
		$ 1,088.98

EXPENSES		
B.C. Telephone	$ 26.39	
Black Top CAbs	17.50	
Dominion Blueprint	4.94	
Thor Instruments	867.30	
R. Quist,Mileage	.72	
Xerox 201@15¢each	30.15	
	$947.00	
5% Handling Charges	47.35	$ 994.35
	$994.35	

TOTAL THIS INVOICE . . . $ 2,083.33

05-3971 (19)

E. & O.E.

Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

4-150

INVOICE NO. V 76314

PROJECT NO.

DATE: Apr.30/76

Fording Coal Ltd.,
P. O. Box 100
ELKFORD, B.C.
V5B 1N0

ATTENTION: Mr. J. Popowich, Chief Engineer

FC 30291

TO PROFESSIONAL SERVICES RENDERED to April 30th, 1976

RE: Kilmarnock "K-4" Pit Design Review

Personnel:

SENIOR ENGINEER P. F. Stacey		43.0 hrs @ $34.02/hr	$ 1,462.86
JUNIOR ENGINEER D. Fieber		1.5 hrs @ $21.04/hr	31.56
REPORT PREPARATION R. Eadie S. McMinn		2.5 hrs @ $12.54/hr .5 hr @ $15.55/hr	31.35 7.77 $ 1,533.54
EXPENSES B.C. Telephone P. Stacey, Exp.A/C P. Stacey, Air Fare	$ 58.78 335.18 205.80 599.76		
5% Handling Charges	29.99 629.75		$ 629.75
		TOTAL THIS INVOICE . . .	$ 2,163.29

05-3971

20

Check
Item
Applica

Signatur

E. & O.E.

Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.,
P.O. Box 100,
Elkford, B.C.
V5B 1N0

INVOICE NO. 9-165

PROJECT NO. V76314

DATE: Sept. 30/76

Attention: Mr. J. Popowich, Chief Eng.

TO PROFESSIONAL SERVICES RENDERED to September 30th, 1976.

RE: Kilmarnock "K-4" Pit Design Review
Our Project V76349 Your P.O. # FC30291 (21)

Personnel:

SPECIALIST ENGINEER		
P. Stacey	3.5 hrs @ $37.49/hr	$ 131.22
SENIOR ENGINEER		
R. Hammett	2.5 hrs @ $28.79/hr	71.97
JUNIOR ENGINEERS		
D. Fieber	39.5 hrs @ $21.04/hr	831.08
B. Good	4.0 hrs @ $21.87/hr	87.48
M. Zubel	3.5 hrs @ $19.03/hr	66.60
SUPERVISORY TECHNICIAN		
F. Straghan	1.5 hrs @ $29.45/hr	44.17
JUNIOR TECHNICIAN		
T. Tokuryk	1.0 hr @ $17.86/hr	17.86
REPORT PREPARATION		
R. Eadie	1.0 hr @ $13.55/hr	13.55
		$ 1,263.93

EXPENSES		
B.C. Telephone	$ 21.90	
P. Stacey Exp. a/c	12.03	
Lloyds Travel	30.25	
Pacific Western	10.00	
Charlie Smith	31.25	
Xerox 70 @ 15¢ each	10.50	
	$115.93	
5% Handling Chgs.	5.80	$ 121.73
	$121.73	

NOV 2 1976
05 3971
cs

NOV 9 1976

TOTAL THIS INVOICE.....$ 1,385.66

E. & O.E.

Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.,
P.O. Box 100,
Elkford, B.C.

Attention: Mr. S. Campbell, Chief Eng.

INVOICE NO. 9-87
PROJECT NO. V75349
DATE: Sept.30/76 (22)

TO PROFESSIONAL SERVICES RENDERED to September 30th, 1976.

RE: Our Project V75349, Your P.O. #PC 30291
(P.O. Previously Covered V75325

Personnel:

SPECIALIST ENGINEER		
P. Stacey	12.0 hrs @ $37.49/hr	$ 449.88
JUNIOR ENGINEER		
B. Good	7.0 hrs @ $21.87/hr	153.09
SENIOR TECHNICIAN		
D. Magnuson	1.0 hr @ $21.96/hr	21.96
REPORT PREPARATION		
R. Badie	1.5 hrs @ $13.55/hr	20.33
		$ 645.26

EXPENSES		
Greyhound Lines	$ 18.35	
R.A.E. Electronics	15.25	
Radio Shack	8.27	
P. Stacey Exp. a/c	55.35	
	$ 97.22	
5% Handling Chgs.	4.86	
	$102.08	$ 102.08

TOTAL THIS INVOICE.....$ 747.34

NOV 9 1976 NOV 2 1976
OS 3971
ch.

E. & O.E.

Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Limited,
P.O. Box 100,
Elkford, B.C.

Attention: Mr. J. Popowich, Chief Eng.

INVOICE NO. 10-86
PROJECT NO. V76027
DATE: Oct.31/76

23

Fc 30291

TO PROFESSIONAL SERVICES RENDERED to October 31st, 1976.

RE: Review of Haul Road Design, Block II, Elkford

Personnel:

JUNIOR ENGINEER
A. Holmes 40.0 hrs @ $19.68/hr $787.20
$787.20

TOTAL THIS INVOICE.....$787.20

DEC 3 - 1976
05-3971

E. & O.E.

F-C-

Just a . . .

Friendly Reminder

that . . .

Your account is now past due!

A-212

Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

Fording Coal Ltd.,
P. O. Box 100
ELKFORD, B.C.

INVOICE NO. 4-110
PROJECT NO. V 76027
DATE: Apr.30/76

ATTENTION: Mr. J. Popowich, Chief Engineer

FC 30291 (2)

TO PROFESSIONAL SERVICES RENDERED to APril 30th,1976

RE: Review of Haul Road Design, Block II, Elkford

Personnel:

SENIOR ENGINEER P. F. Stacey	4.5 hrs @ $34.02/hr	$	153.09
JUNIOR ENGINEER P. K. Robertson	7.5 hrs @ $22.50/hr		168.75
INTERMEDIATE DRAFTSMAN S. Horvath	.5 hr @ $17.49/hr		8.75
REPORT PREPARATION R. Eadie	1.0 hr @ $12.54/hr		12.54
TOTAL THIS INVOICE		$	343.13

05-3971

FORDING PURCHASING
DIST. 05-3971
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
CASH DISC.
APPLD. PAY
APPROVAL

E. & O.E.

INVOICE

KENTING

January 30th, 1976

Fording Coal Limited
P.O. Box 100
Elkford, Brithis Columbia

Attention: A. Taplin RC30094

MAKE CHEQUES PAYABLE TO:
KENTING PETROLIA DRILLING LTD.
BIG INDIAN DRILLING DIVISION
700 - 6TH AVENUE S.W.
CALGARY, ALBERTA, T2P 0T8

INVOICE NO. 0555

WE HAVE TODAY DEBITED YOUR ACCOUNT AS FOLLOWS

MONTH OF CHARGE JANUARY 1976

PROJECT 1424 - Rig No. 1 - Greenhills Area

January 1976 Daywork Services

Jan. 4	Drill RH889	11	hrs.
Jan. 5		24	hrs.
Jan. 6		21	hrs.
Jan. 7		13	Hrs.
Jan. 8	See Inv. #0573	0	hrs.
Jan. 9	See Inv. #0573	0	hrs.
Jan.10	Drill RH856	20	hrs.
Jan. 11	Drill RH856A to 3pm	15	hrs.
Jan.12	Move 857	3	hrs.
Jan.13	Drilling 857 & 1011	13	hrs.
Jan 14	Drilling 1011	6.5	hrs.
Jan 15	Deepen RH866 and Log	19.25	hrs.
		145.75	hours

FORDING PURCHASING
DIST. JAN 30 1976
APPROVAL
PAID BY CHEQUE
PAID BY CASH
PAID BY TRANSFER
CHARGE BIG I
FORD PAY
CHARGE

K Taplin
Feb 4/76

BITS		7 7/8" Retip	5" WMLH	5 1/8" FMLH
Hole 889	Jan 4	1		
	Jan 5		51814	
	Jan 7		51816	
Hole 856	Jan 10		51813	
Hole 857	Jan 13			35061
Hole 1011	Jan 13		51790	
Hole 866	Jan 15		51783	

145.75 hours @ $78.00 per hour	11,368.50	
1 - 7 7/8" Retip	85.00	
5 - 5" WMLH @ 165.00	825.00	
1 - 5 1/8" FMLH @ $170.00	170.00	
TOTAL INVOICE		$ 12,448.50

INVOICE

KENTING

January 30th, 19 76

MAKE CHEQUES PAYABLE TO:

KENTING PETROLIA DRILLING LTD.
BIG INDIAN DRILLING DIVISION
700 - 6TH AVENUE S.W.
CALGARY, ALBERTA, T2P 0T8

Fording Coal Limited
P.O. Box 100
Elkford, British Columbia

Attention: A. Taplin GC30094

INVOICE NO. 0557

WE HAVE TODAY DEBITED YOUR ACCOUNT AS FOLLOWS

MONTH OF CHARGE JANUARY 19 76

PROJECT 1424 Rig No. 1

Greenhills Area January 1976

RH862	120 feet
RH867	151 feet
RH868	135 feet
RH866	180 feet
RH863	85 feet
RH1012	156 feet
	827 feet

DAYWORK:

Jan 8	Log Hole RH862	.75 hrs
Jan 9	Log Hole RH867	1.25 hrs
Jan 10	Log Hole RH868	.75 hrs
Jan 12	Log 866	1 hr
Jan 16	Log 863	1.75 hrs
Jan 17	Log 1012	.75 hrs
		6.25 hrs

REPAIR:

Jan 16 12.75 hours
Jan 17 4 hours
16.75 hours less 6 = 10.75 hours

TOTAL PERIOD:

Jan 8 24 hrs
Jan 9 24 hrs
Jan 10 4 hrs
Jan 11 9 hrs
Jan 12 21 hrs
jan 15 2.25 hrs
jan 16 24 hrs
Jan 17 19 hrs
127.25 hrs = 5.3 days
Less repair & daywork .7 days

827 feet in 4.6 days = 180 feet per day.
827 feet @ $9.80 per foot $ 8,104.60

TOTAL INVOICE $ 8,104.60

FORDING PURCHASING
DIST. P2950/100 1000
MARK THIS SQUARE IF PROV. TAX EXEMPT
CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT
INVOICED FAX
APPROVAL
Feb. 9/76

Tel: 423-4511

Invoice

№ 161

KOLLOWINK CONTRACTING LTD.

Box 1274, Fernie, B.C. V0B 1M0

In Account With

Fording Coal,
Elkford, B.C.

Date FC 30146

Order No. FC 30747

Release No. Geology

Attention Art Taplin

44 hrs @ $42.50 @ hr	$1,870.00
½ Hr O/T @ $3.80 @ hr	3.80
Cost	$1,873.80

FORDING PURCHASING

DIST.

F.O.B. POINT

APPROVAL

JAN 5/77

Hollowink Contracting Ltd.
Box 1[illegible]24, Fernie, B.C.
December 31, 1976

PO #FC 30747
Geology
Attention---Art Taplin

Rate--D7 $42.50 @ hr

	HRS	
Dec1	1½	
2	4½	
9	5	
10	7	
13	7	
14	1½	
15	7	
16	8	½ O/T
17	3½	

44 hrs @ $42.50 @ hr	1,870.00
½ hr O/T @ $3.80	3.80
	1,873.80

Tel: 423-4511

Invoice

№ 134

HOLLOWINK CONTRACTING LTD.

Box 1274, Fernie, B.C. V0B 1M0

In Account With

Fording Coal,
Box 100,
Elkford, B.C.

Date November 30, 1976
Order No. FC 30747
Release No. Geology
Attention Art Taplin

TERMS---UPON RECEIPT OF INVOICE

D7-F	164 hrs @ $42.50 @ hr	$6,970.00
D6-C	8 hrs @ 40.00 @ hr	320.00
D9-2	1 hr @ 69.35 @ hr	69.35
D8-1	18½ Hr @ 60.10 @ hr	1,111.85
D9-7	10 hrs @ 70.50 @ hr	705.00
D8-4	9½ hrs @ 61.50 @ hr	584.25
34 hrs O/T @ $3.80 @ hr		129.20
8½ hrs O/T Sun @ $7.59 @ hr		64.52
25% payroll servicing		46.50
Total cost due		$10,000.67

FORDING PURCHASING

DIST.

MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.	
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY	
F. O. B. POINT		APPROVAL	A.C. Taplin

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$	10,000 67
B.C. Sales Tax Payable	08-15930				
05	P3270200	~~2406~~ 2406	75		
05	P3280200	5196	37		
05	P3290200	2397	55		

Hollowink Contracting Ltd.
Box 1[illegible]74, Fernie, B.C.
November 30, 1976

ording Coal,
PO # FC 30747
Geology
Attention---Art Taplin
Rate---$42.50 @ hr D-7F

	D7-F	D6-C	D9-2	D8-1	O/T	D9-7	D8-4
Nov 1	7						
2	7	3					
3	7½						
4	7½						
5	5½						
6	3				3 Sat		
7	2				2 Sun		
8	7½	5					
9	11½				4		
10	7½						
11	7½		1		1		
12				6	6 Holiday		
13				7	7 Sat		
14					6½ Sun		
15	7½						
16	7						
17	10½				3		
18	3						
20	4				4 Sat		
21	4	Co-op					
22	6½						
23	7			5½			
24	7½						
25					2½	10	
26	6						4
27	6½				3		
28	7				½		4 1
28							1 CO-Op
29	7						3½
30	7						

Tel. 423-4511

Invoice

№ 129

HOLLOWINK CONTRACTING LTD.

Box 1274, Fernie, B.C. V0B 1M0

In Account With

Fording Coal,
Box 100,,
Elkford, B.C.

Date October 31, 1976

Order No. FC 30747

Release No Geology

Attention Art Taplin

2 hrs @ $34.50 @ hr Co-op	$ 69.00
D7 139 hrs @ $42.50 @ hr	5,907.50
D8-4 44½ hrs @ $61.50 @ hr	2,736.75
17 hrs O/T @ $3.80 @ hr	64.60
4 hrs O/T @ $7.59 @ hr Sun	30.36
25% Payroll Servicing	$8,831.95

FORDING PURCHASING

DIST. 05-P3270200
3110017

$ 8,215.70
616.25

MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
F.O.B. POINT		APPROVAL

A.C. Taplin
Nov. 5/76

Hollowink Contracting Ltd.
Box 1274, Fernie, B.C.
October 31, 1976

J # FC 30747
Geology
Attention---Art Taplin

RAte---$42.50 @ hr D7-F $61.50 @ hr D8-4

	HRS D7	D8-4	O/T		
Oct 1	5				
4	1½				
5	3½				
6	7				
7	7				
8	7				
9	7		7	Sat	
12	7	7			
13	7	6½			
15	4	6½			
17	4		4	Sun	
18	6½	7			
19	7	7			
20	11½	2	4		
21	7	2			
22	9½	6½	2		
23	4		4	Sat	
24					2 (Co-op)
25	6				
26	7				
27	7½				
28	7				
29	6				

Tel: 423-4511

Invoice

№ 105

HOLLOWINK CONTRACTING LTD.

Box 1274, Fernie, B.C. V0B 1M0

In Account With

Fording Coal,
Box 100,
Elkford, B.C.

Date September 30, 1976

Order No. FC 30747

Release No.

Attention Art Taplin

GEOLOGY

63 hrs @ $42.50 @ hr. $2,677.50

FORDING PURCHASING		
DIST. P3270 200		100%
MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
		APPROVAL

A.C. Taplin
Oct. 6/76

Tel. 423-4511

Invoice

№ 124

HOLLOWINK CONTRACTING LTD.

Box 1274, Fernie, B.C. V0B 1M0

In Account With

Fording Coal,
Box 100,
Elkford, B.C.

Date October 31, 1976

Order No. FC 30146

Release No. P3290200

Attention John McGregor

Cost of Machine	$276.75

OK J McGregor

FORDING PURCHASING		
DIST. 05 P3290200		
MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
IF C.O.D. INDIST		APPROVAL

A.C. Cudini
Nov. 8/76

Hollowink Contracting Ltd.
Box 1274, Fernie, B.C.
October 31, 1976

PO # FC 30146
Release # P3290200
Attention---John McGregor

	HRS	RATE @ HR	COST	O/T
Oct 28 D8-4	4½	$61.50	$276.75	

act. and charge please

No 539

NG LTD.
MO

Box 100,
Elkford, B.C.

Date May 5, 1976
Order No. PO 30747
Release No.
Attention Art Caplin

97 hrs @ $42.50 @ hr	$4,122.50
U8-5 4 hrs @ $55.25 @ hr	221.00
7 hrs O/T @ $3.52 @ hr	24.64
25% Payroll Servicing	6.16
Total Cost	$4,374.30

FORDING PURCHASING
DIST. P3270200

MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
		APPROVAL

100%

08-15972

Hollowink Contracting Ltd.
Box 1274, Fernie, B.C.

May 5, 1976

PO # FC 30747

Rate--$42.50 @ hr
Attention**Art Taplin

	D7-3	D8-5	O/T
Apr 19	7½		
20	8½		1
21	8½		1
22	7½		
23	7½		
23		4	
26	8½		1
27	8½		1
28	7½		
29	7½		
30	7½		
May 4	10½		3 ✓
5	7½		
	97	4	7

Quit @ 2P.M. on 5th

Tel: 423-4511

Invoice

№ 039

HOLLOWINK CONTRACTING LTD.

Box 1274, Fernie, B.C. V0B 1M0

In Account With

Fording Coal,
Elkford, B.C.

Date January 31, 1976

Order No. FC 30144

Release No.

Attention Art Taplin

Exploration

Total Cost $1,744.36

FORDING PURCHASING

DIST.

MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
		APPROVAL

Feb. 6/76

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 872

DATE April 19, 1976

Your Purchase Order #FC30104

SERVICES RENDERED Re: Fording Field -

Re Service Order #2628 - dated April 2, 1976	$ 775.00
Re Service Order #2629 - dated April 7, 1976	775.00
	$ 1,550.00

FORDING PURCHASING
DIST. NR 03512
MARK THIS SQUARE IF PROV. TAX EXEMPT
CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT
IMMED. PAY
APPROVAL

INVOICE

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 863

DATE March 24, 1976.

Your P.P. #FC-30104

SERVICES RENDERED Re: Eagle Mountain - Service Order #2626 - Dated March 11/76.

Total Footage Logged $ 456.00

Minimum charge applies $725.00

FORDING PURCHASING		
DIST. NP 03512		100%
MARK THIS SQUARE IF PROV TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
		APPROVAL

D.C. Caplin

INVOICE

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 864

DATE March 24, 1976.

Your P.O. #FC-30104

SERVICES RENDERED Re: Eagle Mountain - Service Order #2627 - Dated March 16/76/

Total Footage Logged	$520.30	
Minimum charge applies		$725.00

FORDING PURCHASING		
DIST. NR 03512		
MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
		APPROVAL

A.C. Lapin

INVOICE

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 1015

DATE November 30, 1976
Your P.O. #FC-30728

SERVICES RENDERED Re: Fording Field - Service Order #2567 - Dated November 18, 1976

Total Footage Logged $ 1,984.70

FORDING PURCHASING
DIST.
SQUARE EXEMPT | CASH DISCT
SQUARE IF FED. TAX EXEMPT | IMMED. PAY
F. O. B. POINT | APPROVAL
N.C. Caplin
Dec. 10/76

INVOICE

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$	
B.C. Sales Tax Payable	08-15930				
	NR03512	500	40		
	05P3290800	460	00		
	05P3280800	1,024	30		
	Total				

Posted

8082-H.P.

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 1029

DATE December 17, 1976

P.O. #FC-30728

SERVICES RENDERED Re: Fording Field - Service Order #1390 - Dated December 14, 1976

Total Footage Logged	$ 716.00	
Minimum Trip Charge		$775.00

FORDING PURCHASING
DIST. 05 P3270 800
100%
PAY
APPROVAL

Jan 3/77

INVOICE

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 1027

DATE December 16, 1976

Your P.O. #FC-30728

SERVICES RENDERED Re: Fording Field - Service Order #2830 - Dated December 9, 1976.

Total Footage Logged	$734.20	
Minimum trip charge applies		$775.00

FORDING PURCHASING

DIST. 05 P3270800 100%

MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.	
MARK THIS SQUARE IF FED. TAX EXEMPT		TIMED. PAY	
		APPROVAL	

P. M. Dougrault
Jan 3/77

INVOICE

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 1025

DATE December 16, 1976
Your P.O. #FC-30728

SERVICES RENDERED Re: Fording Field.

Service Order #2828 - Dated Nov. 22/76 - Total Footage Logged	$ 1,625.00
Service Order #2829 - Dated Nov. 26 & 27, 1976 - Total Footage Logged	2,574.83
	$ 4,199.83

FORDING PURCHASING
DIST.
MARK THIS SUPPLIER IF PROV. TAX EXEMPT | CASH DISCT.
MARK THIS SUPPLIER IF FED. TAX EXEMPT | IMMED. PAY
F. O. B. POINT | APPROVAL

F. C. Caplin
Dec. 20/76

INVOICE

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$	
B.C. Sales Tax Payable	08-15930				
	05P3270800	1919	63		
	05P3280800	1929	60		
	05P3290800	350	60		
	Total				

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 1021

DATE December 15, 1976

Your P.O. #FC-30728

SERVICES RENDERED Re: Fording Field - Service Order #2571 - Dated December 2, 1976.

Total Footage Logged $1,295.60

FORDING PURCHASING

DIST.

MARK THIS SQUARE IF PROV. TAX EXEMPT | CASH DISCT.

MARK THIS SQUARE IF FED. TAX EXEMPT | IMMED. PAY

F. O. B. POINT | APPROVAL

R. C. Lapkin Dec 20/76

INVOICE

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$	
B.C. Sales Tax Payable	08-15930				
	05P3280800	811	30		
	05P3290800	484	30		
	Total				

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 1015

DATE November 30, 1976
Your P.O. #FC-30728

SERVICES RENDERED Re: Fording Field - Service Order #2567 - Dated November 18, 1976

Total Footage Logged $ 1,984.70

FORDING PURCHASING
DIST.
SHARE EXEMPT | CASH DISCT.
SQUARE EXEMPT | IMMED. PAY
F.O.B. POINT | APPROVAL
N.C. Cullin
Dec. 10/76

INVOICE

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$	
B.C. Sales Tax Payable	08-15930				
	NR03512	500	40		
	05P3290800	460	00		
	05P3280800	1,024	30		
	Total				

Posted

8062-H.P.

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 1005

DATE November 22, 1976.

SERVICES RENDERED Re: Fording Field.

Service Order #2649 - Dated November 8, 1976 - Total Footage Logged	$ 1,789.80
Service Order #1824 - Dated November 13,1976 - Total Footage Logged	2,071.90
	$ 3,861.70

FORDING PURCHASING		
DIST. Distribution		
MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
F. O. B. POINT		APPROVAL

05 P3270800	$ 1,179.00
05 P3280800	926.10
05 P3290800	1,756.60

INVOICE

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 1002

DATE November 19, 1976

Your P.O. TC-30728

SERVICES RENDERED Re: Fording Field.

Service Order #2645 - Dated October 28, 1976 - Total Footage Logged	$ 1,738.70
Service Order #2648 - Dated November 2, 1976 - Total Footage Logged	1,616.20
	$ 3,354.90

11/12/76
KE

FORDING PURCHASING

DIST.

[illegible] THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
[illegible] THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
F. O. B. POINT		APPROVAL

AC
Dec. 1/76

INVOICE

Distribution

3110017	$ 226.40
05P3270800	2,398.50
05P3290800	730.00

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Limited,
Box 100,
Elkford, B.C.

INVOICE № 991

DATE November 5, 1976

Your P.O. FC-30728

SERVICES RENDERED Re: Eagle Mountain

Service Order #2643 - Dated October 20, 1976 - Total Footage Logged			$ 1,326.80
Service Order #2644 - Dated " 21, 1976 - Total Footage Logged			811.28
Service Order #2557 - Dated " 1, 1976 - Total Footage Logged			848.90
Service Order #2558 - Dated " 7, 1976 - Total Footage Logged	$464.00		
Minimum charge			775.00
Service Order #2559 - Dated " 12, 1976 - Total Footage Logged			1,257.24
Service Order #2561 - Dated " 26, 1976 - Total Footage Logged			1,832.50
Service Order #2684 - Dated " 16, 1976 - Total Footage Logged			1,406.60
			$ 8,258.32

FORDING PURCHASING
DIST. 05 P3270800 100%
MARK THIS SPACE IF PROV. TAX EXEMPT
MARK THIS SPACE IF FED. TAX EXEMPT
CASH DISCT.
POSTED. PAY
APPROVAL

INVOICE

D. Caplin Nov. 15/76

ROKE OIL ENTERPRISES LTD.

516 MORAINE ROAD N.E., CALGARY, ALBERTA T2A 2P2 • TELEPHONE 273-5553

TO: Fording Coal Ltd.,
Box 100,
Elkford, B.C.

INVOICE № 980

DATE October 12, 1976

Your P.O. #FC-30728

SERVICES RENDERED Re: Fording Field - Service Order #1388 - Dated October 4, 1976

Total Footage Logged	$576.10	
Minimum trip charge applies		$775.00

FORDING PURCHASING		
DIST. 05 P3270 800		
MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
		APPROVAL

INVOICE

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

FORDING
NOV 29 1976
PURCHASING

Invoice No. 000187

Date November 25, 1976

Client - Project No Your PO FC30871

SDS - Job No Project 111

Fording Coal Limited
Box 100
Elkford, B.C. VOB 1HO

Billing Period November 1, 1976 To November 19, 1976 Location Elkford, B.C.

Rental for 2 3/8" drill pipe November 1 - 19 19 days @ $20	380.00	380.00

FORDING PURCHASING
DIST: N:903517
MARK THIS SQUARE IF PROV. TAX EXEMPT ✓ CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT ✓ IMMED. PAY
F. O. B. POINT APPROVAL
Dec 1/76

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL $380.00

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000205

Date December 28,1976

Fording Coal Limited ..... page 2

Client - Project No

SDS - Job No

Billing Period To Location

Repairs - Nov. 19 10 hours less 6 = 4 hours				
Period Nov. 16 - Dec. 3 = 18 days				
Less repairs 4 hrs.				
Daywork 126 hrs.				
130 hrs. 5.4 days				
12.6 days				
3396 feet in 12.6 days = 269.5 feet per day				
Footage 3396 feet @$11.00 per foot =	37,356	00		
Daywork 126 hours @ $75.00 per hour =	9,450	00	46,806	00
TOTAL			$46,806	00

FORDING PURCHASING
DIST:
MARK THIS SECTION IF PROV. TAX EXEMPT — CASH DISCT
MARK THIS SECTION IF FED. TAX EXEMPT — HOLD FOR PAY
F. O. B. POINT — APPROVAL

P. M. Naugrault
JAN 4/77

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$	
B.C. Sales Tax Payable	08-15930				
	[illegible]	[illegible]	[illegible]		
	[illegible]	[illegible]	[illegible]		
	[illegible]	[illegible]	[illegible]		
	[illegible]	[illegible]	[illegible]		
	[illegible]	[illegible]	[illegible]		
	[illegible]	[illegible]	[illegible]		

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000204

FORDING
DEC 30 1976
PURCHASING

Date December 28, 1976

Client - Project No Your PO FC30871

SDS - Job No Project 111 Rig 6

Fording Coal Limited
Purchasing Agent
Box 100
Elkford, B.C. VOB 1HO

Billing Period November 16, 1976 To December 3, 1976 Location Turnbull

Hole No. 443		572 feet
396		266 "
387	80 - 282 feet	202 "
616		455 "
617	19 - 550 feet	531 "
618	14 - 350 feet	336 "
620	19 - 400 feet	381 "
617	550 - 694 feet	144 "
619		509 "
		3396 feet

FORDING	PURCHASING
DIST:	
MARK THIS SQUARE IF PROV. TAX EXEMPT	CH. DIST.
MARK THIS SQUARE IF FED. TAX EXEMPT	RECEIVED. PAY
F. O. B. POINT	APPROVAL

DAYWORK		
Nov. 16	- Logging Hole 1035	3 Hrs.
Nov. 17	- Log Hole 443	3 "
Nov. 17	- Move test pipe to location	5.5 "
Nov. 18	- Allan shift - testing	11.5 "
Nov. 18	- Jeffery shift - testing	11.5 "
Nov. 19	- Allan - testing	11.5 "
Nov. 20	- Log Hole 396	4 "
	- Move 396 to 387 - set up and 0 - 80 feet	8.5 "
Nov. 22	- Log Hole 387	1.5 "
Nov 23.	- Move Hole 616 to 617 and set casing to 19 feet - 10.5 hrs. less 5	5.5 "
Nov. 25	- Log Hole 617	3.75 "
	- Move 617 to 618 and set casing to 14 feet - 6.75 hours less 5	1.75 "
Nov. 26	- Log Hole 618	5 "
	- Move 618 to 620 - 25.5 hrs. less 5	20.5 "
Nov. 29	- Log Hole 620	4 "
Nov. 30	- Jeffery - move to Hole 617 and ream	12 "
	Allan clean out to	6 "
Dec. 1	- Jeffery - 550 feet	4.5 "
Dec. 1	- Log Hole 617	2 "
Dec. 3	- Log Hole 619	1 "
		126.0 Hrs.

Replacing Invoice # 19d9195

..... continued to invoice No. 205

TOTAL

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

FORDING
DEC 30 1976
PURCHASING

Invoice No. 000206

Date December 28, 19

Client - Project No Your PO FC30871

SDS - Job No Project 111 Rig

Fording Coal Limited
Box 100
Elkford, B.C. V0B 1H0

Billing Period November 16, 1976 To November 24, 1976 Location Turnbull

Hole No. 613 489 Feet
605 255 "
614 550 "
615 525 "
610 452 "
2271 Feet

DAYWORK
Nov. 16 - Log Hole 613 2 Hours
Nov. 17 - Log Hole 605 9 "
11 Hours

Repairs - Nov. 22 Gregersen 3.5
Nov. 23 Entz 12
Nov. 23 Gregersen 12
Nov. 24 Entz 2
29.5 hours less 6 = 23.5 hrs.

Period Nov. 16 - 24 - 8 P.M. = 8.8 days
Less repairs 23.5 hours
Daywork 11 hours
34.5 hours 1.4 days
7.4 days

2271 feet in 7.4 days = 307 feet per day

Footage 2271 feet @ $11.00 per foot	24,981.00	
Daywork 11 hours @ $75.00 per hour	825.00	
		$25,806.00

FORDING PURCHASING
DIST: 05 P3280 100
MARK THIS SOURCE IF PROV. TAX EXEMPT
CASH DISCT
IF FED. TAX EXEMPT
MATURED PAY
F. O. B. POINT
APPROVAL

To Replace Invoice # 196

Jan 4/77

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL $25,806.00

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000197

Date December 15, 1976

Client - Project No Your PO FC 30871

SDS - Job No Project 111 Rig 2

FORDING
DEC 22 1976
PURCHASING

Fording Coal Limited
Box 100
Elkford, B.C. VOB 1HO

Billing Period November 24, 1976 To December 3, 1976 Location Greenhills

Hole No. 1038	14 - 358 feet	344 feet	
1037	14 - 552 feet	538 "	
1036A		544 "	
1038		203 "	
		1629 feet ✓	

DAYWORK

Nov. 24	- Move 610 to 138 and set casing to 14 feet - 9.25 hours less 5	4.25 hours	
Nov. 25	- Log Hole 1038	2.25 "	
Nov. 25	- Move hole 1038 to 1037 and set casing to 14 feet - 7 hours less 5	2 "	
Nov. 28	- Log Hole 1037	3.75 "	
Dec. 2	- Log Hole 1036A	2 "	
Dec. 3	- Log Hole 1038	2.25 "	
	- Move to mine	1.75 "	
		18.25 Hours ✓	

Repairs - Nov.30 - Gregersen - 9.75 hours less 6 3.75

Period - Nov. 24 - 8 P.M. - Dec. 3 - 8P.M. - 9 days
Less repairs 3.75 hours
daywork 18.25 hours
22 hours ✓ .9 days
8.1 days ✓

1629 feet in 8.1 days = 201 feet per day

Footage 1629 feet @ $10.50 per foot	17,104.50	
Daywork 18.25 hours @ $75.00 per hour	1,368.75	
		18,473.25

FORDING PURCHASING
DIST: C5P3290100
MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT — IMMED. PAY
F. O. B. POINT — APPROVAL

100%

TOTAL $ 18,473.2

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000185

Date November 22/76

Client - Project No

SDS - Job No

Fording Coal Limited

Billing Period _____ To _____ Location _____

Fording Coal Limited Page 2

Repairs - Nov. 6 6 hours
Nov. 7 2.5 "
8.5 less 6 2.5 hours
Nov.12 8 less 6 2 "
4.5 hours

Total period - Nov. 1 - 15 15 days
Less daywork 47.5
repairs 4.5
52 hr-2.2 days
12.8 days

2654 feet in 12.8 days = 207.34 feet per day

Footage - 2654 feet at $11.45 per foot	30,388.30	
Daywork - 47.5 hours at $75.00 per hour	3,562.50	
Usage of 7 7/8 bit - new value $457.00 Rig drilling on daywork 47 hours Charge 50% of bit	228.50	34,179.30

FORDING PURCHASING
DIST. See Below.
ACCOUNTS PAYABLE IF PROV. SALES TAX EXEMPT ✓
CASH DISCT.
ACCOUNTS PAYABLE IF FED. TAX EXEMPT ✓
FIXED. PAY ✓
LD.
APPROVAL

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL $34,179.30

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$ 34,179	30
B.C. Sales Tax Payable	08-15930				
	05-P3270150	11,716	25		
	05-3110017	2,525	30		
	05-P3280100	19,937	75		

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000184

Date November 22/76

Client - Project No Your PO FC30871

SDS - Job No Project 111 ~~Rig 2~~

Fording Coal Limited
Purchasing Agent
Box 100
Elkford, B.C. V0B 1H0

FORDING
NOV 26 1976
PURCHASING

Billing Period November 1, 1976 To November 15, 1976 Location Eagle Mountain, BC

Hole No. 480	61-500 feet	439 feet	
481	16-502 "	486 "	
389		214 "	
609	15-535 "	520 "	
611	15-519 "	504 "	
612A	15-506 "	491 "	
		2654 feet	

FORDING PURCHASING
DIST:
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
F. O. B. POINT
CASH DISCT
IMMED. PAY
APPROVAL

Daywork

Nov. 2 Log Hole 480 and Testing 14 hours
Nov. 3 Move 481 and set casing to 16 feet
6 hours less 5 1 "
Nov. 5 Log Hole 389 1 "
Nov. 6 Move 389 to last location Eagle,
drill to 15 feet, start to move
to Turnbull - 5 hours
Nov. 7 Complete move to Turnbull 10:30 a.m.
to 1 p.m., drill 7 7/8 inch hole to
15 feet and set casing on Hole 609 14.5 hrs - 11.5 "
Nov. 9 Move Hole 609 to 610 - no charge
Set up on 610 drill to 31 feet
unable to continue 12 hours
Move 610 to 611 - no charge
Hole 611 - drill to 15 feet 2.75 hours
14.75 hr. less 5 9.75 "
Nov.11 Log Hole 611 1.75 "
Nov.12 Move 611 to 612 - no charge
Set up drill to 61 feet 11 hours
Move 612 to 612A - no charge
Hole 612A drill to 15 ft. 1.25 hours
12.25 hr. less 5 7.25 "
Nov.15 Log 612A 1.25 "
47.5 hours

..... continued to invoice No. 185

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000183

Date ~~November 22/76~~

Client - Project No FC - 30871

SDS - Job No ~~Rig 6~~

Fording Coal Co. - page 2

Billing Period _____ To _____ Location _____

Repairs - Nov. 2 4.5 hours Nov. 3 24 " Nov. 4 5 " 33.5 hours less 6 27.5 hours			
Period - Oct. 30 - Nov. 15 = 17 days Less Repairs 27.5 hrs Day work 22.5 hrs 50 hrs 2.1 days 14.9 days			
4858 feet in 14.9 days = 326 feet per day			
Footage 4858 feet at $8.75 per foot	42,507	50	
Daywork 22.5 hours at $75.00 per hour	1,687	50	44,195 00
TOTAL			$44,195 00

FORDING PURCHASING
DIST. 3120017 $5,457.50
0523290100 $38,737.50
MARK THIS SPACE IF PROV. TAX EXCEPT ✓ CASH DISCT.
MARK THIS SPACE IF FED. TAX EXCEPT ✓ TIMED PAY ✓
AD. APPROVAL
D.C. Taylor
Nov. 29/76

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000182

Date November 22/76

Client - Project No Your PO FC30871

SDS - Job No Project 111
Rig 6

Fording Coal Limited
Purchasing Agent
Box 100
Elkford, B.C. V0B 1H0

FORDING
NOV 26 1976
PURCHASING

Billing Period October 30, 1976 To November 15, 1976 Location Greenhills

Hole No. 1022		112 feet
1023		192 "
10026		444 "
10027		468 "
1028		458 "
1025		130 "
1024		134 "
1029		270 "
1030		429 "
1031		429 "
1032	19-446 feet	427 "
1033		450 "
1034		365 "
1035		550 "
		4858 feet

FORDING PURCHASING
DIST:
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
F. O. B. POINT
CASH DISCT
IMMED. PAY
APPROVAL

DAYWORK

Oct. 30	- Logging Hole 1022	2 hours
Nov. 1	- Shutdown for blast	1.5 "
Nov. 2	- Log Hole 10027	3 "
Nov. 5	- Log Hole 1028	2 "
Nov. 5	- Log Hole 1025	.5 "
Nov. 6	- Log Hole 1025 & 1024	2.5 "
Nov. 6	- Log Hole 1029	2 "
Nov. 7	- Log Hole 1029	2.5 "
Nov. 9	- Move 1031 to 1032 and set casing to 19 feet - 7.5 hours less 5	2.5 "
Nov. 11	- Move 1032 to 1033 - 5.5 hrs. less 5	.5 "
Nov. 12	- Pit blast	1.5 "
	Logging Hole 1033	2 "
		22.5 hours

.....continued to invoice No. 183

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE (403) 287-1400

FORDING
NOV 1 3 1976
PURCHASING

Invoice No. [illegible]

Date November 8, 1976

Client - Project No Your PO FC 20871

SDS - Job No Project 111, Rig 2

Fording Coal Limited
Purchasing Agent
Box 100
ELKFORD, B.C. V0B 1H0

Billing Period [illegible] To [illegible] Location Eagle Mountain, B.C.

Hole No. 466	450 - 581 feet	131 feet			
476		550 feet			
479	15 - 481	466 feet			
477		582 feet			
478		578 feet			
482		437 feet			
484		469 feet			
483		515 feet			
[illegible]	0 - 61	61 feet (not total depth)			
		3739 feet			

Daywork

Oct. 16	Log Hole 466	2.5 hours
Oct. 18	Move 476 to 479 and set casing to 15 feet - 6.5 hours less 5	1.5 hours
Oct. 25	Shut down to blast	1.5 hours
Oct. 28	Logging Hole 468 and testing	14.0 hours
		19.5 hours

Period Oct. 16 -31 16 days
Less daywork - 19.5 hrs. .8 days
15.2 days

3739 feet in 15.2 days - 246 feet per day

Footage 3739 feet at $11.00 per foot	41,129.00	
Daywork - 19.5 hours at $75.00 per hour	1,462.50	42,591.50

FORDING PURCHASING
DIST: 05-[illegible] 100%
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
F.O.B. POINT
CASH DISCT
IMMED. PAY
APPROVAL

TOTAL $42,591.50

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

S.D.S. DRILLING LTD.

4650 - 1st S.E.
CALGARY, ALBERTA T2G 2L3
PHONE (403) 287-1[illegible]

Invoice No. [illegible]

Date November 8, 1976

Client - Project No Your No FC30871

SDS - Job No Project 111, Rig 6

Fording Coal Limited
Purchasing Agent
Box 100
Elkford, B.C. V0B 1H0

FORDING
NOV 2 1976
PURCHASING

Billing Period October 15, 1976 To October 29, 1976 Location Eagle Mountain

Hole No. 474	32 - 551 feet	519 feet	
475	27 - 188 "	161 "	
472	15 - 559 "	544 "	
470		555 "	
437A	20 - 289 "	269 "	
373	40 - 283 "	243 "	
		2291 feet	

DAYWORK

Oct. 17 - Move 470 to 474 and set casing to 30 feet 9 hours less 5 hours	4 hours
Oct. 20 - Wait on logger and log hole 474	7.5 "
Oct. 20 - Move hole 474 to 475 and set casing to 27 feet - 23.5 hrs. less 5 hours	18.5 hours
Oct. 22 - Move hole 475 to 472 and set casing to 15 feet - 5.5 hrs. less 5	.5 hrs.
Oct. 23 - Logging hole 472	3.5 "
Oct. 25 - Log hole 470	3.5 "
Oct. 26 - Move to 437A and set casing to 20 feet 7½ hours less 5	2.5 hrs.
Oct. 27 - Log hole 437A	2.5 "
Oct. 27 - Move to 373 and set casing - 10 hrs. less 5	5.0 hrs.
Oct. 28 - Log hole 373	3.0 "
Oct. 28 - Move hole 387 - drill and attempt to set casing, move to hole 1022 - 23.5 hrs. less 5	18.5 hrs.
	69.00 hrs.

FORDING PURCHASING
DIST: [illegible] 281.50
[illegible] 223.00
MARK THIS SO NOT TO PROV. TAX EXEMPT
CASH DISCT
MARK THIS SO NOT TO FED. TAX EXEMPT
NEMED. PAY
F.O.B. POINT
APPROVAL
Nov 15/76

..... continued to invoice no. 178

TOTAL

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000178

Date November 8, 1976

Fording Coal Co - page 2

Client - Project No

SDS - Job No Rig 6

Billing Period _____ To _____ Location _____

Period - Oct. 17 12 hours		
Oct. 18 16 hours		
28 hours = 1.16 days		
Oct. 19-29 11.0 days		
12.16 days		
Less day work - 69 hours - 2.87 days		
9.29 days		
2291 feet in 9.29 days = 246.6 feet per day		
Footage 2291 feet at $11.00 per foot	25,201.00	
Daywork 69 hours at $75.00 per hour	5,175.00	
Usage of 7-7/8 ins. bit - Rig drilled 79 hours on day work 50% of 7-7/8 ins. bit at $457.	228.50	30,604.50
TOTAL		$30,604.50

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

FORDING
NOV 2 1976
PURCHASING

Invoice No. 000170

Date October 28, 1976

Client - Project No Your PO FC3087

SDS - Job No Project 111

Fording Coal Limited
Box 100
Elkford, B.C. VOB 1HO

Billing Period _____ To _____ Location _____

To transportation of 2 3/8 drill pipe Calgary to Eagle Mountain Square B Trucking Ltd. No. 2880	588.00	588.00

FORDING ACCOUNTING OFFICE
NOV - 4 1976
PAID

FORDING PURCHASING
DIST: 05 P3270700
MARK THIS SQUARE IF PROV. TAX EXEMPT ✓
MARK THIS SQUARE IF FED. TAX EXEMPT ✓
CASH DISCT
IMMED. PAY
APPROVED
F. O. B. POINT
Nov 3/76

11 005 NOV 76

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL $ 588.00

	Code	Dr.	Cr.
Inter-Office Account	~~08-15100~~ 08-10003	$	$ 588.00
B.C. Sales Tax Payable	08-15930		41.16
	05-P3270700	629.16	

9414

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

FORDING
NOV 2 1976
PUR FORDING

Invoice No. 000173

Date October 29, 1976

Client - Project No Your PO FC30871

SDS - Job No Project 111

Fording Coal Limited
Box 100
Elkford, B.C. VOB 1HO

Billing Period _____ To _____ Location Elkford, B.C.

Rental for 2 3/8" drill pipe October 21 - 31 = 11 days @ $20	220.00	
Adaptor to Engineer's Packer	45.00	
15% Handling charges not invoiced on our invoice No. 000170 (as per our letter of October 21, 1976)	88.20	353.20

FORDING PURCHASING
DIST: 05 P3270700
MARK THIS SQUARE IF PROV. TAX EXEMPT ✓ CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT ✓ IMMED. PAY
F. O. B. POINT APPROVAL
Nov. 3/76

FORDING RECEIVED NOV - 1 1976 PAID

11 094 NOV '76

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL $353.20

	Code	Dr.	Cr.
Inter-Office Account	~~08-15100~~ 08-10003	$	$ 353.20
B.C. Sales Tax Payable	08-15930		18.55
	05-P3270700	371.75	

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000164

Date October 22, 1976

Client - Project No Your PO FC30871

SDS - Job No 111, Rig 2

Eagle Mountain

Fording Coal Limited
Purchasing Agent
Box 100
Elkford, B.C. VOB 1HO

FORDING
OCT 27 1976
PURCHASING

Billing Period October 1 To October 15 Location

Hole No. 463 - 368 - 455 feet		87 feet
469 -	15 - 186 ft.	171 "
468	0 - 400 ft.	400 "
467	15 - 285 Ft	270 "
469A	0 - 521 ft	521 "
464	15 - 541 ft.	526 "
465	0 - 581 Ft.	581 "
466 ~~465~~	49 - 450 ft.(not TD)	401 "
		2957 ft.

Daywork -

Oct. 1 - Wait on logger 7a.m. to 9 a.m.	2 hours
Move hole 463 to 462	
Move hole 462 to 469	
Drill 0 - 15 ft. skid rig	
Drill 0 - 15 ft. run casing	
12.5 hours less 5 hours	7.5 hr.
Oct 4 - Move hole 468 to 467	
6 a.m. - 12 noon - 6 hrs less 5 hrs.	1 hr
Oct 5 - Log Hole 467	1.75 ~~hrs.~~
Oct 7 - Log Hole 469A	4
Oct 8 - Log hole 462	9.5
Oct 8 - Move hole 462 to 474	
Drill to 47 feet in sand	
Move to hole 464, set casings to 15 ft. - 16.5 hrs. less 5 hrs.	11.5 ~~hrs.~~
Oct 12 - shut down for blast	1 hr
Oct 13 - move 465 to 466	
drill to 49 ft and set casing	
12 hours less 5 hours	7 hrs.
	45.25 hours

FORDING PURCHASING
DIST: 05 P3270 150
MARK THIS SQUARE IF PROV. TAX EXEMPT ✓ CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT ✓ TERMS NET
F. O. B. POINT APPROVAL
D.C. Oct 25/76

.....continued to page 2

TOTAL

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000165

Date

Client - Project No

SDS - Job No

Fording Coal Limited
Box 100
Elkford

Billing Period _____ To _____ Location _____

continued from page 1 - invoice no. 00164		
Total period - 15 days		
Less day work 1.9		
13.1 days		
2957 feet in 13.1 days = 226 ft. per day		
Footage 2957 x $11.00 per foot	32,527.00	
Daywork 45.25 hrs. at $75.00 per hour	3,393.75	
Usage of 7-7/8 ins. bit - new value $457.00 - rig drilled 24 hours on day work charge at 50%	228.50	36,149.25
TOTAL		$36,149.25

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

FORDING
OCT 27 1976
PURCHASING

Invoice No. 000166

Date October 22, 1976

Client - Project No Your PO FC 30871

SDS - Job No 111 - Rig 6

Fording Coal Limited
Purchasing Agent
Box 100
Elkford, B.C. VOB 1H0

Billing Period October 5 To October 10 Location Greenhills

Hole No. 1019	253 feet		
1016	253 "		
1017	253 "		
1018	240 "		
	999 feet		
Daywork -			
Oct. 5 - Move mine to Hole 1019	1 hour		
6 - Log Hole 1019	1 hour		
8 - Log Hole 1016	1 hour		
9 - Log Hole 1017	2 hours		
10 - Log Hole 1018	1 hour		
	6 hours		
Length of Period -			
Oct. 5 - 12			
6 - 12			
7 - 12			
8 - 12			
9 - 12			
10 - 6			
66 hours = 2.75 days			
2.75 days less day work of .25 = 2.5 days			
999 feet in 2.5 days = 400 feet per day			
Footage 999 feet at $8.75 per foot		8741.25	
Daywork - 6 hours at $75.00 per hour		450.00	$ 9191.25

FORDING PURCHASING
DIST: 05 P3290100
MARK THIS SQUARE IF PROV. TAX EXEMPT ✓
MARK THIS SQUARE IF FED. TAX EXEMPT ✓
CASH DISCT
IMMED. PAY
F. O. B. POINT
APPROVAL
A.C. Oct. 29/76

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL $ 9191.25

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

FORDING
OCT 27 1976
PURCHASING

Fording Coal Limited
Purchasing Agent
Box 100
Elkford, B.C. VOB 1H0

Invoice No. 000163

Date October 22, 1976

Client - Project No Your PO FC 30871

SDS - Job No 111 - Rig 6

Billing Period October 10 To October 16

Location Eagle Mountain

Hole 473 - 525 feet

Daywork
Oct. 16 - Logging Hole 473 5 hours

Repair- Oct. 11 12 hours
Oct. 12 4
16 hours less 6 hours
10 hours
15 hours

Period - Oct. 10 6 hours
11 12 "
12 12 "
13 12 "
14 12 "
15 12 "
16 12 "
78 hours - 3.25 days
Less day work and repair .62 = 2.63 days

525 feet in 2.63 days - 200 feet per day
Footage 525 feet at $11.75 per foot 6,168.75
Daywork - 5 hours at $75.00 per hour 375.00 $ 6543.75

FORDING PURCHASING
DIST: 05P3270150
MARK THIS SQUARE IF PROV. TAX EXEMPT ✓ CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT ✓ IMMED. PAY
F. O. B. POINT APPROVAL
Oct. 29/76

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

TOTAL $ 6543.75

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

FORDING
OCT 21 1976
PURCHASING

Invoice No. 000153

Date October 19, 1976

Client - Project No Your PO FC30871

SDS - Job No Project 111, Rig 2

Fording Coal Limited
Purchasing Agents
Box 100
Elkford, B.C. VOB 1HO

Billing Period September 24th To September 30th Location

Greenhills				
Sept. 24	Move to Location 1018 - set up	2 hrs.		
Sept. 25	Drill 0 - 45 feet, move, drill to 30 feet, rig down	24 hrs.		
Sept. 26	Rig down, move to Eagle Mountain 12 midnite to 1.30 p.m.	13.5 hrs.		
		39.5 hrs.		
Daywork - 39.5 hours at $75.00 per hour			2962.50	
6¼ ins. - 10% of $327.56			32.56	
4-7/8 ins. - No. C69503			154.16	
				$ 3149.22 ✓
EAGLE MOUNTAIN				
Hole No. 462	0 - 490 feet			
Hole No. 463	0 - 368 feet (not T.D.)			
	858 feet			
Total period - 106.5 hours = 4.43 days ✓				
858 feet in 4.43 days = 193 feet per day ✓				
858 feet at $12.10 per foot ✓				
			10,381.80	10,381.80 ✓
		TOTAL		$ 13,531.02 ✓

FORDING PURCHASING
DIST. 05 P3270/50 10,381.80
05 P3290/00 3,149.22
MARK THIS SQUARE IF PROV. TAX EXEMPT ✓
MARK THIS SQUARE IF FED. TAX EXEMPT ✓
CASH DISCT
IMMED. PAY ✓
APPROVAL
Oct. 27/76

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000147

FORDING
OCT 12 1976
PURCHASING

Date October 8, 1976

Fording Coal Limited
Purchasing Agent
Box 100
ELKFORD, B.C. VOB 1HO

Client - Project No

SDS - Job No Project 111, Rig 2

Billing Period _____ To _____ Location Elkford, B.C.

To mobilization men and equipment	3500.00	3500.00
TOTAL		$ 3500.00

FORDING PURCHASING
DIST. See Below P 3290100
MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT — IMMED. PAY
SA. LS. APPROVAL D.C. Caplin

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

	Code	Dr.	Cr.
Inter-Office Account	08-15100	$	$ 3,500 00
B.C. Sales Tax Payable	08-15930		
	~~P.M.R. P3290100~~	~~1,750 00~~	
	~~P.M.R. P3290100~~	~~1,750 00~~	
	P 3290 100	3,500 00	

S.D.S. DRILLING LTD.

4636 1 ST. S.E.
CALGARY, ALBERTA T2G 2L3
PHONE(403) 287-1460

Invoice No. 000146

Date October 8, 1976

Client - Project No

SDS - Job No Project 111, Rig 6

Fording Coal Limited
Purchasing Agent
Box 100
ELKFORD, B.C. VOB 1HO

Billing Period _____ To _____ Location Elkford, B.C.

To Mobilization - men and equipment	3500.00	3500.00
TOTAL		$3500.00

FORDING PURCHASING
DIST. P 3270/00
MARK THIS SQUARE IF PROV. TAX EXEMPT
CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT
PAY
APPROVAL
A.C. Caplin

Terms:
Payment due 30 days from receipt
Interest charged at 1½% per month over 30 days
Make cheques payable to above address

Fording Coal Ltd.,
Box 100,
Elkford, B. C.

1321 Spruce Drive,
Cranbrook, B. C.

DATE March 24 19 76

TERMS

Invoice No 9

P.O. # FC 30697
S.R. # 449

Attention : Mr. Carl Jensen

To construct drill sites and improve access roads into the areas.			
# F7-1 --- 72 hrs. @ $ 44.24	3,185.28		
# F9-1 --- 7 hrs. @ $ 66.36	464.52		
Operators overtime differential ;			
Total time :- 5 hrs. @ $ 4.00		20.00	
Fringe benefits - 25% of $ 20.00		5.00	
	3,649.80	25.00	
			$ 3,674.80

FORDING PURCHASING
DIST. NR 03509
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
CASH DISCT.
IMMED. PAY
APPROVAL

E. & O.E.

1½% PER MONTH INTEREST CHARGED ON OVERDUE ACCOUNTS

JAMESFIELD CONSTRUCTION LTD.,
1321 Spruce Drive,
Cranbrook, B. C.

RECAPITULATION SHEET

Attention : Mr. Carl Jensen

Summary of Tractor hours and operator overtime hours.

Date	Operator O.T. hrs	F7-1	F9-1	
Feb. 28/76		5		
Mar. 1				
2			3½	
3			2½	
4	2	5½		
5	1	9		
6		8		
7				
8		5½		
9				449
10	½	8½		
11	1½	9½		
12		3		
13				
14				
15				
16		4	1	
17		3½		
18				
19		6		
20				
21				
22				
23		4½		461
24			8	
	5	72	15	

Jamesfield Construction Ltd.,
1321 Spruce Drive,
Cranbrook, B.C.

Fording Coal Ltd.,
Box 100
Elkford, B.C.

DATE April 24 19 76

TERMS

Invoice No. 13

P.O. # FC 30697
S.R. # 449

017861

Attention -: Mr. Carl Jensen

Equipment Rental Working on Drill Sites.			
# F 7- 1 33 hrs. @ $ 44.24	1,459.92		
# 404 Skidder ½ hr. @ 22.73	11.37		
Operators overtime differential -			
Total time - 12½ hrs. @ 4.00		50.00	
Fringe benefits @ 25%		12.50	
05 050 APR '76	1,471.29	62.50	
			$ 1,533.79

FORDING PURCHASING
DIST. 05-NR03509
MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT — IMMED. PAY
APPROVAL

07 OK.

E. & O.E. 1½% PER MONTH CHARGED ON OVERDUE ACCOUNTS

JAMESFIELD CONSTRUCTION LTD.
1321 SPRUCE DR.
CRANBROOK B.C.

FORDING COAL LTD.
BOX 100
ELKFORD, B.C.

DATE NOV. 26 1976
TERMS
No. 24

P.O. #30697 S.R. ~~#~~ #491

To rental of F-9-1 D9Gripper tractor			
17 hr. @ 70.00 per hr.	1,190.00		
			$1,190.00

FORDING PURCHASING
DIST. NR 03509 100%

MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
F. O. B. POINT.		APPROVAL

H.C. Tomlin
Dec. 1/76

E. & O.E.

1½% PER MONTH INTEREST CHARGED ON OVERDUE ACCOUNTS

Fording Coal Ltd.

Box 100

Elkford, B.C.

FROM Jamesfield Construction

DEPT

DATE Nov. 26/76

SUBJECT D9G Tractor rental

Nov. 10/76	F-9-1	1hr.
Nov. 11	"	9
Nov. 15	"	8
	Total -	17 hrs.

REPLY

REPLY FROM

REPLY DATE

AVOID VERBAL INSTRUCTIONS

USE A SPEEDIMEMO

REDIFORM 4S085E

TO WRITE: HANDWRITE OR TYPE. REMOVE AND RETAIN YELLOW COPY. FORWARD BALANCE OF SET. FOLD AT MARKS FOR USE IN #9 OR #10 WINDOW ENVELOPE

104302

TO REPLY: WRITE REPLY IN BOTTOM AREA. SNAP SET APART. RETAIN ORIGINAL AND RETURN PINK COPY

E. & O.E.

1½% PER MONTH INTEREST CHARGED ON OVERDUE ACCOUNTS

Jamesfield Construction Ltd.
1321 Spruce Drive,
Cranbrook, B.C.

Fording Coal Ltd.
Box 100,
Elkford, B.C.

DATE Oct. 25 19 76

TERMS

No. 21

P.O. # F. C. 30697 S. R. #481

TO rental of F-9-1 - D9G exposing coal seams and opening roads into new trenches.			
F-9-1, D9G Tractor c/w ripper 55½ hrs. @ 70.00 per hr.	3,885.00		
			$3,885.00

FORDING PURCHASING		
DIST. NR 03510		
MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
		APPROVAL

N.C. Caplin
Oct. 27/76

E. & O.E.

1½% PER MONTH INTEREST CHARGED ON OVERDUE ACCOUNTS

SEND TO

Fording Coal Ltd.

Box 100,

Elkford B.C.

Attn: Mr. J. McGregor

DEPT.

DATE Oct. 25/76

FROM Jamesfield Construction Ltd.

SUBJECT

D9G Tractor rental on S.R. #481

Sept.	27/76	- F-9-1 -	9hrs
"	28	"	9
"	29	"	9
"	30	"	9
Oct.	1	"	7½
"	4	"	9
"	5	"	3
		Total -	55½ hr.

*Note: on the time cards S.R. number shows #461 - should read #481

REPLY

REPLY FROM

REPLY DATE

AVOID VERBAL INSTRUCTIONS USE A SPEEDIMEMO

REDIFORM 4S085E

TO WRITE: HANDWRITE OR TYPE REMOVE AND RETAIN YELLOW COPY FORWARD BALANCE OF SET. FOLD AT MARKS FOR USE IN #9 OR #10 WINDOW ENVELOPE

TO REPLY: WRITE REPLY IN BOTTOM AREA SNAP SET APART. RETAIN ORIGINAL AND RETURN PINK COPY.

063693

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

205- ~~201~~ - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
APR 21 1976
PURCHASING

Job 21-624

INVOICE NO: 6693
DATE: April 19, 1976

Fording Coal Limited
Box 100
Elkford, B. C.

SURFACE DIAMOND DRILLING
SPARWOOD, B. C.
APRIL 1 - 7, 1976
YOUR P.O. #FC-30669

FOOTAGE FEE

D.D. Hole #456-76	757 - 797'	40'	@ 14.05	562.00	
458-76	0 - 377'	377'	@ 13.40	5,051.80	5,613.80
		417'			

FIELD COST WORK

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Apr.1/76	Day	10	5	Washing hole to get return circulation
"	"	1	½	Water test @ 290'
"	P.M.	8	4	Wait for engineer to log hole
"	"	2	1	Mixing mud - lost circulation
"	Night	8	4	Logging hole
2	Day	2	1	Getting hole ready for grouting
"	"	4	2	Tropari test
"	"	2	1	Water test
"	P.M.	16	8	Cemented hole
"	Night	16	8	Install piezometer
3	Day	34	9	4 men tear down & move
4	P.M.	6	3	Lost circulation
"	Night	5	2½	" "
5	Day	1	½	Water test
"	"	2	1	Lost circulation
"	P.M.	2	1	" "
"	Night	2	1	" "

~~6693~~

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

To
Fording Coal Limited
Box 100
Elkford, B. C.

DATE April 19, 1976

INVOICE NO. 6693

FIELD COST WORK

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Apr. 6/76	Day	1	½	Water test
7	"	36	9	4 men wait for hole to be logged & move equipment to bottom of hill
		158	62	
CREDIT 2 moves		-20		
		138		

Total man hours	138 @ 14.90	2,056.20	
Total drill hours	62 @ 10.00	620.00	2,676.20

MUD & CEMENT CONSUMED LOST CIRCULATION

59	50# bags	Quick Gel Mud	@ 4.85	286.15
8	25# "	Quick Trol Mud	@ 6.40	51.20
3 3/4	40# "	Quick Seal	@ 26.55	99.56
18	50# "	Fondu Cement	@ 7.00	126.00
				562.91
	5% tax			28.15
				591.06
	Plus 10%			59.11
				650.17

SUPPLIES LEFT IN HOLES

Hole #456-76		
9 pcs. HW-2' Casing	@ 29.50	265.50
1 only HW Shoe #K4ZW-341		278.95
Hole #457-76		
6 pcs. HW-2' Casing	@ 29.50	177.00
1 only HW Shoe #K4ZW-342		278.95
		1,000.40
5% tax		50.02
		1,050.42
Plus 10%		105.04
		1,155.46

WATER TRUCK RENTAL

Gallant Trucking, Inv. #20542 (copy attached)	3,200.00	
" " " 20543 " "	1,400.00	4,600.00
		14,695.63

FORDING PURCHASING
DIST.
MARK THIS SQUARE IF PROV. TAX EXEMPT | CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT | IMMED. PAY
APPROVAL

NR 03511 $13,621.03
NR 03512 $318.40
NR 03516 $119.40
NR 03517 636.80

81-0701

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd

205 - ~~201~~ - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
APR 12 1976
PURCHASING

Job 21-624

INVOICE NO: 6684
DATE: April 8, 1976

FORDING COAL LIMITED
BOX 100
ELKFORD, B. C.

SURFACE DIAMOND DRILLING
SPARWOOD, B. C.
MARCH 16 - 31, 1976
YOUR P. O. #FC-30669

FOOTAGE FEE

D.D. Hole #456-76	0 - 500'	500' @ 12.90	6,450.00	
	500 - 757'	257' @ 13.55	3,482.35	9,932.35
		757'		

FIELD COST WORK

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Mar.16/76	Day	16	4	Tear down & move
"	Night	16	8	No cat to move
17	Day	10	5	Start setting up
"	P.M.	4	2	Finish setting up
19	Day	2	1	Lost circulation
"	P.M.	8	4	" "
"	Night	9	4½	" "
20	Day	16	8	" "
"	P.M.	6	3	" "
"	Night	7	3½	" "
21	Day	12	6	" "
"	P.M.	10	5	" "
22	"	16	8	Cemented hole
"	Night	16	8	Wait for cement to set
23	Day	16	8	" " " " "
"	P.M.	16	8	Washing cement
"	Night	16	8	Drilling cement
24	Day	10	5	Drilling cement & cement
"	P.M.	2	1	Washing cement 220' - 247'
"	"	2	1	Lost circulation
"	Night	7	3½	" "
25	Day	2	1	Partial lost circulation
"	"	1	½	Water test @ 90'

6684

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd

205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

To FORDING COAL LIMITED
BOX 100
ELKFORD, B. C.

DATE APRIL 8, 1976
INVOICE NO. 6684

FIELD COST WORK (cont'd)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Mar.25	P.M.	6	3	Lost circulation
"	Night	7	3½	" "
26	Day	1	½	Water test @ 185'
"	P.M.	4	2	Lost circulation
"	Night	4	2	Wait for water
27	Day	1	½	Water test @ 195'
"	P.M.	2	1	Lost circulation
28	Day	1	½	Water test @ 180'
29	"	4	2	Lost circulation
"	"	1	½	Water test @ 180'
"	P.M.	2	1	Washing hole
"	"	4	2	Lost circulation
"	Night	5	2½	" "
30	Day	2	1	Washing hole
"	"	2	1	Lost circulation
"	P.M.	4	2	" "
"	"	2	1	Washing hole
"	Night	3	1½	Lost circulation
31	Day	2	1	Water test
"	P.M.	2	1	Washing hole
"	"	2	1	Lost circulation
"	Night	11	5½	Wait for water
		292	142	

Total man hours 292 @ 14.00	4,088.00	
Total drill hours 142 @ 10.00	1,420.00	5,508.00

MUD SUPPLIES CONSUMED LOST CIRCULATION

274 - 50# bags Quick Gel Mud	@ 4.85	1,328.90	
65 - 2# " " Trol "	@ 6.40	416.00	
6½ - 40# " " Seal	@ 26.55	172.58	
1 - 50# " CC-16		19.20	
4 - 100# " Asbestos	@ 14.00	56.00	
		1,992.68	
5% tax		99.63	
		2,092.31	
Plus 10%		209.23	2,301.54

WATER TRUCK RENTAL (Mar. 6-15/76)
Gallant Trucking Ltd., Inv.#20541 (copy attached) 2,000.00

19,741.89

51-0701

FORDING PURCHASING
DIST. NR 03511 100%
MARK THIS SQUARE IF PROV. TAX EXEMPT ✓ CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT IMMED. PAY
APPROVAL

GALLANT TRUCKING LTD.
1 O'CONNOR ROAD
KAMLOOPS, B.C. V2C 5A5

OUR NUMBER 20541
DATE MARCH 15/76
CUSTOMER'S ORDER
SALESMAN
TERMS $200.00 PER DAY
F. O. B.

SOLD TO CONNORS DRILLING LTD.
VANCOUVER, B.C.
SHIPPED TO
ADDRESS VIA

INVOICE

	OPERATOR: BOYD GALLANT		
	SUPPLIED WATER TRUCK FOR DRILLING AT ELKFORD		
	PERIOD COVERED, MARCH 6 TO MARCH 15/76 10 DAYS @ $200 PER DAY		$2000 00
	PROJECT # 21-624		
	M Beauchamp		

RECEIVED MAR 22 1976 CONNORS DRILLING LTD. VAN

032

...s Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd

205 - ~~201~~ - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
APR 5 1976
PURCHASING

Job 21-624

INVOICE NO: 6635
DATE: March 30, 1976

FORDING COAL LIMITED
BOX 100
ELKFORD, B. C.

SURFACE DIAMOND DRILLING
SPARWOOD, B. C.
MARCH 5 - 15, 1976
YOUR P. O. #FC-30669

FOOTAGE FEE

D.D. Hole #455-76	0 - 408'	408'		
457-76	0 - 452'	452'		
		860' @ 12.90		11,094.00

FIELD COST WORK

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Mar. 5/76	Day	45	9	Moving to drill site
6	"	36	9	Finish setting up
"	P.M.	16	8	Wait for water
7	Day	6	3	" " "
9	Night	1	½	Water test
10	Day	1	½	" "
"	P.M.	1	½	" "
"	Night	8	4	Lost circulation
11	Day	2	1	Wait for water
"	"	20	5	Tear down and move
"	Night	16	8	Complete move
12	Day	4	2	Clean first drill site
"	P.M.	4	2	Ream casing 4 - 10'
13	Day	1	½	Water test
"	Night	3	1½	Lost circulation
15	"	14	7	Tear down to move
		178	61½	
CREDIT 3 moves		-30		
		148		

Total man hours	148 @ 14.00	2,072.00	
Total drill hours	61½ @ 10.00	615.00	2,687.00

6635

onnors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

Fording Coal Limited
Box 100
Elkford, B. C.

DATE March 30, 1976

INVOICE NO. 6635

CORE BOXES SUPPLIED		
(From Fernie Shop)		
100 HQ Core boxes @4.00	400.00	
100 HQ Core boxe lids @ 1.00	100.00	
(From Vancouver)		
100 HQ Core boxes @ 4.00	400.00	
100 HQ Core box lids @ 1.00	100.00	
	1,000.00	
5% tax	50.00	1,050.00
MUD CONSUMED LOST CIRCULATION		
7 50# bags Quick Gel Mud @ 4.85	33.95	
5% tax	1.70	
	35.65	
Plus 10%	3.57	39.22
		14,870.22

NR03511 $13,820.90
NR03516 $ 1,070.00

FORDING PURCHASING
DIST. ~~NR03511~~

MARK THIS SQUARE IF PROV. TAX EXEMPT	✓	CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY
		APPROVAL

April 7/76

G701

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$ 14,870	22
B.C. Sales Tax Payable	08-15930			20	68
		14,890	90		

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

201 - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
DEC 16 1976
PURCHASING

Job 21-627

INVOICE NO: 7340
DATE: December 7, 1976

Fording Coal Limited
Box 100
Sparwood, B.C .

SURFACE DIAMOND DRILLING
ELKFORD, B.C.
NOVEMBER 16 - 30, 1976
YOUR P.O. #FC-30894

FOOTAGE FEE

D.D. Hole	#439	789' - 971'	182' @ 16.55	3,012.10	
	447	556' - 600'	34' @ 15.75	535.50	
		600' -1212'	612' @ 16.55	10,128.60	
	444	0' - 225'	225' @ 15.75	3,543.75	
	471	0' - 72	72' @ 15.75	1,134.00	18,353.95
			1125'		

FIELD COST WORK (Drill 25A #2)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Nov. 16/76	P.M.	12	6	Water truck delay
17	D	10	5	"
	P.M.	16	8	"
	N	6	3	Wait for water
18	D	4	2	"
	N	8	4	"
20	N	16	8	Water truck delay
21	D	16	8	Tractor delay
24	N	16	8	Water truck delay
25	D	12	6	Wait for cat
26	P.M.	12	6	Packer test @ 1171'
	N	16	8	Probe hole
27	D	16	8	Put in Pizometer
	P.M.	16	8	Work on Pizometer
	N	16	8	"
28	D	16	8	Moving drill off mountain
29	D	16	8	Move and set up
	P.M.	16	8	Setting up drill
		240	120	
Credit 1 move		-10	-5	
		230	115	7340

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd

205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

TO Fording Coal Ltd.
Box 100
Sparwood, B.C.

DATE December 7, 1976

INVOICE NO. 7340

Total man hours	230 @ 15.50	3,565.00	
Total drill hours	115 @ 10.00	1,150.00	4,715.00

FIELD COST WORK (Drill 38-1)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Nov. 16/76	P.M.	12	6	Water truck delay
17	"	4	2	"
22	D	16	8	Probe hole
24	D	32	8	Put rods down for survey test
25	D	26	6½	3 Survey tests
		6	1½	Work on casing
26	D	8	2	Pull 109' casing
		24	6	Moving to hole #444
27	D	16	8	Move and set up
		144	48	
Credit 1 move		-10	-5	
		134	43	

Total man hours	134 @ 15.50	2,077.00	
Total drill hours	43 @ 10.00	430.00	2,507.00 ✓

MUD SUPPLIES CONSUMED (Drill 38-1)

81 - 50# bags Quickgel mud @ 4.35		352.35	
(Drill 25-2)			
183 - 50# bags Quickgel mud @ 4.35		796.05	
86 - 2# bags QUICKTROL mud @ 6.05		520.30	
		1,668.70 ✓	
	7% tax	116.81 ✓	1,785.51 ✓

SUPPLIES LEFT IN HOLE #447

3 pieces HW - 10' casing @ 104.00		312.00	
1 HW casing shoe		278.95	
		590.95 ✓	
	7% Tax	41.37 ✓	
		632.32 ✓	
	Plus 10%	63.23 ✓	695.55 ✓

CORE BOXES AND FREIGHT CHARGES

400 HQ Core Boxes @ 4.00		1,600.00	
200 HQ Core Box Lids @ 1.00		200.00	
		1,800.00 ✓	
	7% Tax	126.00 ✓	
Freight (Copy Attached)		172.70 ✓	2,098.70 ✓
			30,155.71 ✓

FORDING PURCHASING
DIST: 7% Tax
MARK THIS SOURCE IF PROV. TAX EXEMPT
MARK THIS SOURCE IF FED. TAX EXEMPT
F.O.B. POINT
CASH DISCT
IMMED. PAY
APPROVAL

S1-0701

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd

~~207~~ 205 - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
NOV 29 1976
PURCHASING

Job 21-627

Fording Coal Limited
Box 100
Sparwood, B.C.

INVOICE NO: 7301
DATE: November 23, 1976

SURFACE DIAMOND DRILLING
ELKFORD, B.C.
NOVEMBER 1 - 15, 1976
YOUR P.O. #FC-30894

FOOTAGE FEE					
D.D. Hole	#438	598' - 600'	2' @ 15.75	31.50	
		600' - 976'	376' @ 16.55	6,222.80	
	439	99' - 600'	501' @ 15.75	7,890.75	
		600' - 789'	189' @ 16.55	3,127.95	
	447	0' - 566'	566' @ 15.75	8,914.50	26,187.50
			1634'		

FIELD COST WORK (Drill 25-A)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Oct. 27/76	Day	2	1	Water tests @ 256' & 104'
28/76	Day	1	½	" @ 97'
Nov. 3/76	"	1	½	" @ 80'
	"	4	2	Water truck delay
	Aft.	6	3	"
6/76	Night	8	4	"
7/76	Day	8	4	"
8/76	"	3	1½	Probe hole
	Aft.	4	2	"
	Night	16	8	Standby time - (probe)
9/76	Day	32	8	Survey tests @ 975' & 600'
	Aft.	16	8	"
10/76	Day	36	9	
		137	51½	
Credit 1 move		-10	-5	
		127	46½	

7301

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

To Fording Coal Limited
Box 100
Sparwood, B.C.

DATE November 23, 1976

INVOICE NO. 7301

Total man hours	127 @ 15.50	1,968.50	
Total drill hours	46½ @ 10.00	465.00	2,433.50 ✓

FIELD COST WORK (Drill #38)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Oct. 30/76	Aft.	1	½	Ream HW casing 60' - 69'
Nov. 1	Day	8	4	" 94' -106'
3	"	6	3	Water truck delay
7	"	8	4	"
		23	11½	

Total man hours	23 @ 15.50	356.50	
Total drill hours	11½ @ 10.00	115.00	471.50 ✓

MUD SUPPLIES CONSUMED (Drill #38)

370 50# bags Quickgel mud @ 4.35	1,609.50	
128 2# bags Quicktrol mud @ 6.05	774.40	
(Drill #25-A)		
October 26/76		
10 50# bags Quickgel mud @ 4.35	43.50	
7 2# bags Quicktrol mud @ 6.05	42.35	
(Nov. 1 - 15/76)		
226 50# bags Quickgel mud @ 4.35	983.10	
143 2# bags Quicktrol mud @ 6.05	865.15	
1 40# bag cc-16	16.85	
	4,334.85 ✓	
7% tax	303.44 ✓	4,638.29 ✓

CORE BOXES & FREIGHT C HARGES

October 28/76 100 HQ Core Boxes & Lids @ 5.00	500.00	
7% tax	35.00	
FREIGHT ON CORE BOXES (copies attached)		
Millar & Brown Inv. #281994	101.77	
Millar & Brown Inv. #284359	146.16	
Millar & Brown Inv. #285954	109.48	892.41
		34,623.20

FORDING PURCHASING
DIST: 05 P3270 100 100%
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
CASH DISCT
IMMED. PAY
F. O. B. POINT
APPROVAL
H.C. Caplin Dec. 10/76

51-0701

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$	
B.C. Sales Tax Payable	08-15930				

INITIALS INITIALES	EQUIP. NO. NO. D'EQUIP.	SHIPPER'S B/L NO. NO. DU CONN. DE L'EXP.	DATE MONTH MOIS	DAY JOUR	YEAR ANNEE	DEST. BR. SUCC. DI DEST. (TERM.)	CUSTOMER CODE CODE DU CLIENT		
AM			11	18	76	123			103 285954

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR INTERMEDIAIRE ET NO. DU PRO

RECEIVED FROM - REÇU DE

TRANSFERRED TO - TRANSFÉRÉ À

ADVANCE FRAIS AVANCÉS	REVENUE REVENU	BEYOND FRAIS AU-DELÀ
	109.48	

D-U-N-S 20-095-4717

MILLAR & BROWN LTD.

DIRECT WINTERS TRANSPORT LIMITED • DIRECT MOTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS TRANSPORT (WESTERN) LIMITED

Remit to Faire Remise à

MILLAR & BROWN LTD.
[illegible]
BURNABY, B.C. [illegible]

CONSIGNEE - CONSIGNATAIRE

CONNORS DRILLING LTD
C/O FORDING COAL LTD
ELKFORD B.C.

SHIPPER - EXPÉDITEUR

E.G. WHALLEY & SON LTD
5791 BERESFORD ST
BURNABY B..C

NO. PIECES NO. PAQUETS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS COMME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
20	BDLS CORE BOXES	1120				
4	BDLS " " COVERS	300				
24	BDLS	1420				
	CHGE TO CONNORS DRILLING LTD			771	109.48	PPD
	205-1201 W PENDER ST					
	VANCOUVER B..C. PROJECT #21-627					

PAY

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

4 ORIGINAL INVOICE - FACTURE ORIGINALE

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHÈQUE VISÉ.

INITIALS INITIALES	EQUIP. NO NO D'ÉQUIP	SHIPPER'S B/L NO NO DU CONN. DE L'EXP	DATE MONTH MOIS	DAY JOUR	YEAR ANNEE	DEST. BR SUCC. DI DEST. TERM.	CUSTOMER CODE CODE DU CLIENT		103 284359
P			11	15	76	123			

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR INTERMEDIAIRE ET NO. DU PRO

RECEIVED FROM - REÇU DE

TRANSFERRED TO - TRANSFÉRÉ À

21-627

ADVANCE FRAIS AVANCÉS | REVENUE REVENU 146.16 | BEYOND FRAIS AU-DELÀ

D-U-N-S 20-095-4717

MILLAR & BROWN LTD.

DIRECT WINTERS TRANSPORT LIMITED • DIRECT MOTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS TRANSPORT (WESTERN) LIMITED

CONSIGNEE - CONSIGNATAIRE
CONNORS DRILLING LTD

SPARWOOD, B.C.

DIV. CONTRACT AMOUNT

Remit to Faire Remise à
MILLAR & BROWN LIMITED
2807 DOUGLAS ROAD
BURNABY, B.C. V5C 5B5

SHIPPER - EXPÉDITEUR
E G WHALLEY AND SON LTD
5791 BERESFORD STREET
BURNABY, B.C.

NO PIECES NO PAQUETS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS COMME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
36	BDLES CORE BOXES	2016				
8	BDLES CORE BOXES COVERS	380				
44	BOXES TTL	2396		610	146.16	PPD
	BANK CHARGE: CONNORS DRILLING LTD					
	4205-1201 WEST PENDER, VANCOUVER					
	PAYABLE DANS LES 7 JOURS					

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHÈQUE VISÉ.

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

No.

4 ORIGINAL INVOICE - FACTURE ORIGINALE

INITIALS INITIALES	EQUIP NO NO D'EQUIP	SHIPPER'S B/L NO NO. DU CONN DE L'EXP.	DATE MONTH MOIS	DAY JOUR	YEAR ANNÉE	DEST BR SUCC DE DEST			103 281994
P			11	10	76	123			

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR TERMINUS NO DU PRO | ADVANCES AVANCES | REVENUE REVENU 101.77 | BEYOND FRAIS AU-DELÀ

RECEIVED FROM - REÇU DE

TRANSFERRED TO - TRANSFÉRÉ À

RECEIVED NOV 15 1976 CONNORS DRILLING LTD.

D-U-N-S 20-095-4717

MILLAR & BROWN LTD.

DIRECT WINTERS TRANSPORT LIMITED • DIRECT MOTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS TRANSPORT (WESTERN) LIMITED

Remit to Faire Remise à

MILLAR & BROWN LIMITED
2857 DOUGLAS ROAD
BURNABY, B. C. V5C 5B6

CONSIGNEE - CONSIGNATAIRE
CONNORS DRILLING LTD
C/O FORDING COAL CO LTD
ELKFORD,B.C.

SHIPPER - EXPÉDITEUR
E G WHALLEY AND SON LTD
5791 BERESFORD STREET
BURNABY,B.C.

NO. PIECES NO PAQUETS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS COMME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
20	BDLES CORE BOXES	1120				
4	BDLES CORE BOXES COVERS	200				
24	BDLES TTL	1320		771	101.77	PPD
PAY	CHARGE: CONNORS DRILLING LTD Y S					
PAY	205 - 1201 WEST PENDER STREET, VANCOUVER,B.C. PROJECT #21-627S					

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHÈQUE VISÉ.

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

4 ORIGINAL INVOICE - FACTURE ORIGINALE

inors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd

205-
~~204~~ - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
NOV 12 1976
PURCHASING

FC

Job 21-627

INVOICE NO: 7262
DATE: November 8, 1976

Fording Coal Ltd.
Box 100
Sparwood, B.C.

SURFACE DIAMOND DRILLING
ELKFORD, B.C.
OCTOBER 16 - 31, 1976

FOOTAGE FEE

D.D. Hole #440	99' - 600'	501'	@ 15.75	7,890.75		
	600' - 957'	357'	@ 16.55	5,908.35		
442	773' - 1024'	251'	@ 16.55	4,154.05		
438	0' - 598'	598'	@ 15.75	9,418.50		
439	0' - 99'	99'	@ 15.75	1,559.25	28.930.90	
		1806'				

FIELD COST WORK (Drill 25-A)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Oct. 21/76	Day	6	3	Roke hole testing
	Aft.	4	2	Work on HW casing
	Night	16	8	" " "
22/76	Day	40	10	Moving to hole #438
23/76	"	8	4	Finish setting up
"	Night	16	8	No water
24/76	Day	4	2	Water delay
	Aft.	10	5	Ream casing 32' - 42'
25/76	"	6	3	Water delay
26/76	"	8	4	"
	Night	12	6	"
		130	55	
Credit 1 move		-10	-5	
		120	50	

Total man hours 120 @ 15.50 1,860.00
Total drill hours 50 @ 10.00 500.00 2,360.00

FORDING PURCHASING			
DIST:			
MARK THIS SQUARE IF PROV. TAX EXEMPT			
MARK THIS SQUARE IF FED. TAX EXEMPT		PAY	
CHECKED		APPROVAL	7262

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

To Fording Coal Ltd.
Box 100
Sparwood, B.C.

DATE November 8, 1976

INVOICE NO. 7262

FIELD COST WORK (Drill 38)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Oct. 16/76	Day	4	2	Ream casing 92' - 96'
17/76	"	12	6	Mix mud lost circulation
	"	4	2	Cemented hole
	Aft.	16	8	Wait for cement to set
18/76	Day	16	8	Drilled cement 77' - 135'
	Aft.	20	10	" " 135' - 198'
19/76	"	12	6	Water delay
23/76	Night	6	3	"
24/76	Day	4	2	"
25/76	Night	5	2½	"
26/76	Day	6	3	"
	Night	16	8	"
27/76	Day	6	3	"
28/76	Aft.	8	4	Probe hole
	"	8	4	Tear down
29/76	Day	16	8	Move and set up
30/76	"	12	6	Install 60' HW casing
31/76	Night	16	8	Ream casing 69' - 94'
		187	93½	
Credit 1 move		-10	-5	
		177	88½	

Total man hours	177 @ 15.50	2,743.50	
Total drill hours	88½ @ 10.00	885.00	3,628.50

MUD SUPPLIES CONSUMED (Drill 38)

150	50# bags Quickgel mud	@ 4.35	652.50	
112	2# bags Quicktrol mud	@ 6.05	677.60	
1½	40# bags Kwikseal mud	@ 23.65	35.48	
3	100# bags Asbestos	@ 14.00	42.00	
5	bags Fondu Cement	@ 7.00	35.00	
	(Drill #25-A)			
219	50# bags Quickgel mud	@ 4.35	952.65	
138	2# bags quicktrol mud	@ 6.05	834.90	
2	100# bags Asbestos	@ 14.00	28.00	
			3,258.13	
		7% tax	228.07	3,486.20

FREIGHT ON CORE BOXES

Millar & Brown	Inv. #272401	(Copy Attached)	19.00	
" " "	276500	(" ")	80.52	99.52
				38,505.12

FORDING PURCHASING
DIST. 05P3270100 — — — ~~38,502.12~~ $38,405.60
05P3270700 — — — $99.52
MARK THIS SQUARE IF PROV. TAX EXEMPT | CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT | IMMED. PAY
F. O. B. POINT | APPROVAL

N.C. Caplin
Nov. 19/76

P.M.D.
Corrected on Original Invoice

INITIALS INITIALES	EQUIP. NO. NO. D'EQUIP.	SHIPPER'S B/L NO NO. DU CONN. DE L'EXP.	DATE MONTH MOIS	DAY JOUR	YEAR ANNÉE	DEST. BR. SUCC. DE DEST. (TERM.)	CUSTOMER CODE CODE DU CLIENT		103 272401
S			10	20	76	123			

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR INTERMEDIAIRE ET NO. DU PRO

ADVANCE FRAIS AVANCÉS	REVENUE REVENU	BEYOND FRAIS AU-DELÀ
	19.00	

RECEIVED FROM - REÇU DE

TRANSFERRED TO - TRANSFÉRÉ À

RECEIVED OCT 25 1976 CONNORS DRILLING LTD.

D-U-N-S 20-005-4717

MILLAR & BROWN LTD.

DIRECT WINTERS TRANSPORT LIMITED • DIRECT MOTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS TRANSPORT (WESTERN) LIMITED

CONSIGNEE - CONSIGNATAIRE
CONNORS DRILLING LTD

SPARWOOD BC

SHIPPER - EXPÉDITEUR
CONNORS DRILLING LTD
1705 Pandora St.,
VACOUVER BC

Remit to Faire Remise à

MILLAR & BROWN LIMITED
2857 DOUGLAS ROAD
BURNABY, B. C. V5C 5B6

NO. PIECES NO. PAQUETS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS COMME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
4	BDLES HQ CORE BOX LIDS	200		M	19.00	PPD
	HOLD FOR PICK UP					
	PAY PRO 21627 IN 7 DAYS					
	PAYABLE DANS LES 7 JOURS					

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHÈQUE VISÉ.

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

4 ORIGINAL INVOICE - FACTURE ORIGINALE

INITIALS INITIALES	EQUIP. NO. NO. D'ÉQUIP.	SHIPPER'S B/L NO. NO. DU CONN. DE L'EXP.	DATE MONTH MOIS	DAY JOUR	YEAR ANNÉE	DEST. BR. SUCC. DE DIST. (TERM.)	CUSTOMER CODE CODE DU CLIENT		103 276500
CT			10	28	76	123			

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR INTERMÉDIAIRE ET NO. DU PRO

RECEIVED FROM - REÇU DE

TRANSFERRED TO - TRANSFÉRÉ À

ADVANCE FRAIS AVANCÉS	REVENUE REVENU	BEYOND FRAIS AU-DELÀ
	80.52	

D-U-N-S 20-095-4717

MILLAR & BROWN LTD.

DIRECT WINTERS TRANSPORT LIMITED • DIRECT MOTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS TRANSPORT (WESTERN) LIMITED

Remit to Faire Remise à

MILLAR & BROWN LIMITED
2857 DOUGLAS ROAD
BURNABY, B. C. V5C 5B6

CONSIGNEE - CONSIGNATAIRE

CONNORS DRILLING LTD.
SPARWOOD, B.C.

21-627

SHIPPER - EXPÉDITEUR

E.G. WHALLEY & SON LTD.
5791 BERESFORD ST.
BURNABY, B.C.

NO. PIECES NO PAQUETS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS COMME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
20	BDLS CORE BOXES	1120				
4	BDLS. CORE BOXES COVERS	200		610	80.52	PPD.
24	CHARGE	1320				

PAY CHARGE IN 7 DAYS

PAYABLE ~~CONNORS DRILLING LTD. L1205 1201 W. PENDER ST.~~ VANCOUVER B.C.

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHÈQUE VISÉ.

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

4 ORIGINAL INVOICE - FACTURE ORIGINALE

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

205- ~~201~~ - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
OCT 25 1976
PURCHASING

Fording Coal Ltd.
Box 100
Sparwood, BC

21-627
INVOICE NO: 7231
DATE: October 22, 1976

SURFACE DIAMOND DRILLING
ELKFORD, B.C.
OCTOBER 1 - 15, 1976

FOOTAGE FEE

D.D. Hole	#441	307' - 600'	293' @ 15.75	4,614.75	
		600' -1017'	417' @ 16.55	6,901.35	
	442	99' - 600	501' @ 15.75	7,890.75	
		600' - 773'	173' @ 16.55	2,863.15	
	443	0' - 99'	99' @ 15.75	1,559.25	23,829.25
			1483		

FIELD COST WORK (Drill 25-A)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Oct. 1/76	Day	10	5	Ream casing 78' - 103'
"	"	6	3	Casing 0' - 78'
4/76	Night	12	6	No water
5/76	"	12	6	"
6/76	Day	6	3	Lost circulation Mix mud
(Drill 38)				
12/76	Day	9	4	Hole squeezing Reamed 938' - 950'
13/76	"	8	4	Roke hole test
"	Aft.	16	8	Moving to hole #443
15/76	Aft.	16	8	Ream casing 55' - 80'
"	Night	10	5	" 80 - 92'
		104	52	
Credit 1 move		-10	-5	
		94 DIST.	47	

Total man hours 94
Total drill hours 47

FORDING PURCHASING
05 P3270100 $27,865.25
MK THIS SQUARE IF PROV. TAX EXEMPT
@ 15.50
MARK THIS SQUARE IF FED. TAX EXEMPT
CASH DISCT
IMMED. PAY
APPROVAL
A.C. Taylor
Nov. 2/76

1,457.00
470.00 1,927.00

7231

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

To Fording Coal Ltd.
Box 100
Sparwood, B.C.

DATE October 22, 1976

INVOICE NO. 7231

MUD SUPPLIES CONSUMED (Overburden & Lost Circulation)			
(Drill #25-A)			
49 50# bags Quickgel mud @ 4.35		213.15	
49 2# bags Quicktrol mud @ 6.05		296.45	
½ bag Kwik Seal @ 23.65		11.83	
(Drill #38)			
81 50# bags Quickgel mud @ 4.35		352.35	
81 2# bags Quicktrol mud @ 6.05		490.05	
1 bag Asbestos		14.00	
		1,377.83	
	7% tax	96.45	1,474.28
CORE BOXES & FREIGHT CHARGES			
100 HQ Core Boxes & Lids @ 5.00		500.00	
	7% tax	35.00	
Freight on boxes (copy attached)		69.22	
Freight on Asbestos (copy attached)		30.50	634.72
			27,865.25

INITIALS INITIALES	EQUIP. NO. NO. D'ÉQUIP.	SHIPPER'S B/L NO. NO. DU CONN. DE L'EXP.	DATE MONTH MOIS	DAY JOUR	YEAR ANNÉE	DEST. NO. SUCC. DE DEST. (TERM.)	CUSTOMER CODE CODE DU CLIENT		103 270881
S			10	18	8	123			

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR INTERMEDIAIRE ET NO. DU PRO

RECEIVED FROM - REÇU DE

TRANSFERRED TO - TRANSFÉRÉ À

ADVANCE FRAIS AVANCÉS	REVENUE REVENU	BEYOND FRAIS AU-DELÀ
	39.04	

D-U-N-S 20-095-4717

CONSIGNEE - CONSIGNATAIRE

CONNORS DRILLING LTD PROJ 21-627

SPARWOOD BC

SHIPPER - EXPÉDITEUR

CONNORS DRILLING LTD
1705 Pandora
VANCOUVER BC

OCT 22 1976
CONNORS DRILLING LTD.
VANCOUVER

MILLAR & BROWN LTD.

DIRECT WINTERS TRANSPORT LIMITED • DIRECT MOTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS TRANSPORT (WESTERN) LIMITED

Remit to Faire Remise à

MILLAR & BROWN LIMITED
2057 DOUGLAS ROAD
BURNABY, B.C. V5C 5S6

NO. PIECES NO PAQUETS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS COMME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
5	BAGS ASBESTOS	500				
3	BOXES 7.50X6 HD TIRE CHAINS	140				
8		640		610	39.04	PPD
	PAYABLE DANS LES 7 JOURS		3050			

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHÈQUE VISÉ.

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

4 ORIGINAL INVOICE - FACTURE ORIGINALE

21-627

INITIALS INITIALES	EQUIP. NO. NO. D'ÉQUIP.	SHIPPER'S B/L NO. NO. DU CONN. DE L'EXP.	DATE MONTH MOIS	DAY JOUR	YEAR ANNÉE	DEST. BR. SUCC. DE DEST. (TERM.)	CUSTOMER CODE CODE DU CLIENT		103 269666
CT			10	14	76	123			

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR INTERMEDIAIRE ET NO. DU PRO	ADVANCE FRAIS AVANCÉS	REVENUE REVENU	BEYOND FRAIS AU-DELÀ
RECEIVED FROM - REÇU DE TRANSFERRED TO - TRANSFÉRÉ À		69.22	

D-U-N-S 20-095-4717

MILLAR & BROWN LTD.

DIRECT WINTERS TRANSPORT, LIMITED • DIRECT MOTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS TRANSPORT (WESTERN) LIMITED

CONSIGNEE - CONSIGNATAIRE
CONNORS DRILLING LTD.
C/O FORDING COAL CO.
ELKFORD, B.C.

SHIPPER - EXPÉDITEUR
E.G. WHALLEY & SON LTD.
5791 BERESFORD ST.
BURNABY, B.C.

Remit to *Faire Remise à*
MILLAR & BROWN LIMITED
2857 DOUGLAS ROAD
BURNABY, B.C. V5C 5B5

NO. PIECES NO PAQUETS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS CONME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
20	BDLS. CORE BOXES	1120		618	69.22	PPD.
	CHARGE: CONNORS DRILLING LTD. #205 1201 W. PENDER ST. VANCOUVER, B.C.					
	PAYABLE DANS LES 7 JOURS					

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHÈQUE VISÉ.

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

4 ORIGINAL INVOICE - FACTURE ORIGINALE

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

ACCOUNTING
OCT 12 1976
PURCHASING

Job 21-627

Fording Coal Limited
Box 100
Sparwood, B.C.

INVOICE NO: 7184
DATE: October 8, 1976

SURFACE DIAMOND DRILLING
ELKFORD, B.C.
SEPTEMBER 25 - 30, 1976

MOBILIZATION - DEMOBILIZATION
(Lump Sum) 3,600.00

FOOTAGE FEE

D.D. Hole #438	0' - 16'	16'	
441	0' - 307'	307'	
442	0' - 99'	99'	
		422' @ 15.75	6,646.50

FIELD COST WORK (Drill #38)

DATE	SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Sept. 25/76	Day	40	10	Move in and set up
26/76	"	16	4	Complete setting up
27/76	"	50	10	Move & set up Hole #441
28/76	"	6	3	Ream casing 62' - 71'
"	Night	8	4	" 71' - 77'
29/76	Day	4	2	Lost circulation Mix mud
"	Night	6	3	Water truck broke down
30/76	Day	4	2	"
	(Drill 25-A)			
Sept. 28/76	Day	40	10	Move in to hole #441
29/76	Day	14	7	Finish move & set up
		188	55	
Credit 2 moves		-20	-10	
		168	45	

Total man hours 168 @ 15.50 2,604.00
" drill hours 45 @ 10.00 450.00 3,054.00

7184

gLtd.
ies Ltd.
205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

ORDING COAL LIMITED
BOX 100
SPARWOOD, B.C.

DATE October 8, 1976

INVOICE NO. 7184

MUD SUPPLIES CONSUMED (Overburden & lost circulation)

Drill #38			
48-50# bags Quickgel mud	@ 4.35	208.80	
18- 2# bags Quicktrol mud	@ 6.05	108.90	
1-40# bag cc-16		16.85	
½ bag Kwik Seal	@ 23.65	11.83	
Drill 25-A			
15-50# bags Quickgel mud	@ 4.35	65.25	
		411.63	
	7% tax	28.81	440.44

FREIGHT CHARGES ON ASBESTOS
Millar & Brown Inv. #263409 (copy attached) 38.55

13,779.49

FORDING PURCHASING
DIST. 05 P 3270/00
MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT — IMMED. PAY
APPROVAL
S.A. Lauer
A.C. Caplin
Oct. 27/76

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd

205-
~~201~~ - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
SEP 23 1976
PURCHASING

Job 21-627

INVOICE NO: 6788
DATE: June 1, 1976

Fording Coal Limited
Box 100
Sparwood, B. C.

SURFACE DIAMOND DRILLING
ELKFORD, B. C.
MAY 31, 1976 FC 30669

CORE BOXES & FREIGHT CHARGES

80 only HQ Core Boxes @ 4.00	320.00	
80 only HQ Core Box lids @ 1.00	80.00	
	400.00	
7% tax	28.00	428.00
Millar & Brown Freight, Pro #202681 (copy attached)		68.32
Travel time & expenses for crew (from attached sheet)		1,296.71
		1,793.03

Hold - Check A/R.

P3270100 $1,296.71
P3270700 496.32

A.C. Caplin
Oct. 28/76

6788

FORDING COAL Travel Expenses and Travel Time for 5 Men

TRAVEL TIME HOURS		72 man hours @ 12.00		864.00
MOTEL CHARGES	6 men for 2 days			
	12 man days @ 7.00		84.00	
	Tax		4.20	88.20
EXPENSE A/C		B. Gouthro	62.01	
		W. Lahaise	70.70	
Van-Fernie & return		Z. Kluczewski	105.90	
Bus fare	5.40	R. Laplante	105.90	344.51
Plane fare	100.50			1,296.71
	105.90			

(21.627)

INITIALS INITIALES	EQUIP. NO. NO. D'ÉQUIP.	SHIPPER'S B/L NO. NO. DU CONN. DE L'EXP.	DATE MONTH MOIS	DAY JOUR	YEAR ANNÉE	DEST. BR. SUCC. DE DEST. (TERM.)	CUSTOMER CODE CODE DU CLIENT		
S			04	30	76	123			103 202681

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR INTERMEDIAIRE ET NO. DU PRO

RECEIVED FROM - REÇU DE

TRANSFERRED TO - TRANSFÉRÉ À

ADVANCE FRAIS AVANCÉS | REVENUE REVENU: 68.32 | BEYOND FRAIS AU-DELÀ

D-U-N-S 20-095-4717

MILLAR & BROWN LTD.

DIRECT WINTERS TRANSPORT LIMITED • DIRECT MOTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS TRANSPORT (WESTERN) LIMITED

Remit to Faire Remise à

MILLAR & BROWN LIMITED
2857 DOUGLAS ROAD
BURNABY, B. C. V5C 5B6

CONSIGNEE - CONSIGNATAIRE
CONNORS DRILLING LTD
C/O FORDING COAL LTD-MINESITE
FORDING VALLEY BC

RECEIVED MAY 6 1976 CONNORS DRILLING LTD.

SHIPPER - EXPÉDITEUR
E G WHALLEY & SON
5791 BERESFORD STREET
BURNABY BC

NO. PIECES NO. COLIS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS COMME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
16	BDLES CORE BOXES	960				
4	BDLES COVERS	160				
20		1120		610	68.32	PPD
PAYS	CHARGES TO: CONNORS DRILLING 1205-1201 WEST PENDER STREET VANCOUVER, BC					

PAYS LES 7 JOURS

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHEQUE VISÉ.

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

4 ORIGINAL INVOICE - FACTURE ORIGINALE

Connors Drilling Ltd.
Subsidiary of Bow Valley Industries Ltd

FORDING COAL Foreman P LAHAISE Period MAY 1-15/76

NAME		1 16	2 17	3 18	4 19	5 20	6 21	7 22	8 23	9 24	10 25	11 26	12 27	13 28	14 29	15 30	31	Total		
	D																			
	A																			
	G																			
LAHAISE (H) TT			8			8												16-HRS		
	D																			
	A																			
	G																			
LAPLANTE (D) T.T				8		8												16-HRS		
	D																			
(D)	A																			
	G																			
KHUCZEWSKI T.T			8			8												16-HRS		
	D																			
	A																			
(D)	G																			
GOUTHRO T.T				8		8												16-HRS		
	D																			
	A																			
	G																			
J. KERRIGAN (D) TT			4			4												8-HRS		
	D																			
	A																	72-HRS		
	G																	@12.00		
	D																		864.00	
	A																			
	G																			

24

STATEMENT / ÉTAT DE COMPTE

RECEIVED MAY 27 1976

May 6 1976

M Connors Drilling

Account With
Doit À

Inn Tower Motel
Box 658
Fernie B.C.

Corrected Copy of Statement

Terms/Conditions

Order # 11538

Armand Lalaine						
April 16 to May 5 incl			20 days		200	00
21 5005	627	739				
Michael Kerrigan						
April 16 to 22			7 days @ 6.00		42	00
May 3 & 4th			2 days @ 7.00		14	00
Rob Laplante			May 4+5	2 days @ 7.00	14	00
Bryan Cowthro			May 3, 4+5	3 days @ 7	21	00
Wade Lalaise			May 2+3	2 days @ 11.00	22	00
			May 4+5	2 days @ 7.00	14	00
Z Kliegenski			May 2, 3, 4+5	4 days @ 11.00	44	00
			5%	commit	18	55
					389	55

627
50.00
14.00
187.95

21-627

Expense Account for Bryan Gouthro - Fording Coal Job

Travel time to Fernie	May 2	8 hours	pd MAY 11 1976 PR
Travel time from Fernie back to Hinton, Alberta	May 5	8 hours	
Meals	$9.50 & $3.40		$12.90
Gas	$6.00, $11.00, $10.21, $10.50, $11.40		$49.11
			62.01

RECEIVED
MAY 10 1976
CONNORS DRILLING LTD.

DIV.	ACCT. No.	EQ EM CU SU	CONTRACT	AMOUNT
21	5026		627	62.01

connors drilling ltd.
subsidiary of Bow Valley Industries Ltd.

EXPENSE STATEMENT

JOB 21627

NAME Alfred Lalonde

R R # 2
ADDRESS

DATE	DESCRIPTION OF EXPENSE ITEMS	AMOUNT		Do not write in this column.
May 2/76	gas to Elkford	33	30	✓
	MEAL	3	20	
May 6/76	gas to Oroyoos	32	05	✓
	MEAL	2	15	✓
		70	70	

MAY 13 1976
CONNORS DRILLING LTD.

Alfred Lalonde

PAY FRIDAY

DIV.	ACCT. No.	EQ. EM. CU. CU.	CONTRACT	AMOUNT
21	5026		627	70.70

Expense Accounts must be submitted within 10 days of arrival on job and also within 10 days of completion of work.
Supporting Invoices, such as hotel receipts, travel ticket stubs, etc., must accompany Expense Statement.

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd.

205 - 1201 WEST PENDER STREET, VANCOUVER, B.C., CANADA V6E 2V2
AREA CODE 604/683-2222

To
Fording Coal Limited
Box 100
Sparwood, B.C.

DATE December 23, 1976

INVOICE NO. 7371

SUPPLIES LEFT IN HOLE #444		
1 HQ Core Bit #K9C-0056	605.82	
1 HQ Reaming Shell #K7YA-153	320.03	
6 pieces HQ drill rods @ 82.00	492.00	
1 HQ 5' Outer Tube	65.50	
1 locking coupling	97.20	
1 adapter coupling	29.75	
1 landing ring	14.60	
1 stabilizer	34.00	
	1,658.90	
7% tax	116.12	
	1,775.02	
Plus 10%	177.50	1,952.52
MUD SUPPLIES CONSUMED (Drill 25-A)		
275 - 50# bags Quickgel mud @ 4.35	1,196.25	
128 - 2# Bags Quicktrol mud @ 6.05	774.40	
(Drill #38-1)		
18 - 50# bags Quickgel mud @ 4.35	78.30	
9 - 2# bags Quicktrol mud @ 6.05	54.45	
	2,048.95	
7% tax	143.43	2,192.38
		38,102.40

FORDING PURCHASING
DIST. 05 P3270 100 100 %
MARK THIS ORDER IF PROV. TAX EXEMPT
CASH DISCT.
MARK THIS ORDER IF FED. TAX EXEMPT
APPROVED FOR PAY
APPROVAL R. M. Daugnault
Jan 11/77

Connors Drilling Ltd.
Subsidiary of
Bow Valley Industries Ltd

~~204~~ 205 - 1201 WEST PENDER STREET, VANCOUVER, B.C. CANADA V6E 2V2
AREA CODE 604/683 - 2222

FORDING
DEC 30 1976
PURCHASING

Job 21-627

INVOICE NO: 7371
DATE: December 23, 1976

Fording Coal Limited
Box 100
Sparwood, B.C.

SURFACE DIAMOND DRILLING
ELKFORD, B.C.
DECEMBER ~~1-15, 1976~~
YOUR P.O. #FC-30894

FOOTAGE FEE

D.D. Hole	#444	225' - 909'	684'	
	471	72' - 884'	812'	
			1496' @ 18.00	26,928.00

FOOTAGE FEE ADJUSTMENT Oct. 16-Nov. 30/76
4565' @ 1.00 — 4,565.00

FIELD COST WORK (Drill 38-1)

DATE		SHIFT	MAN HRS.	DRILL HRS.	REMARKS
Dec.	3/76	D	16	8	Work on stuck rods
		P.M.	16	8	"
	4	D	16	8	"
	9	D	4	2	Probe hole
		D	10	5	Work on HQ rods
		P.M.	12	4	Clean mud tanks and start to move to loading site.
	10	D	32	8	Moving to loading site
	14	D	11	5½	Hole testing
	15	D	32	8	
			149	56½	
Credit 2 move			-20	-10	
			129	46½	

FORD PURCHAS

Total man hours:	129 @ 15.50	1,999.50	
Total drill hours	46½ @ 10.00	465.00	2,464.50 ✓

INVOICE TAX EXTENSION
COST
COST
INVOICE EXTENSION
INVOICE PAY
P.O. FORM
APPROVAL

7371

KERPAN & DELFS LTD.

BOX 742 — KAMLOOPS, B.C.

INVOICE

№ 00782

Phone: 374-1708.

TO: Fording Coal Co. Ltd.
Box
ELKFORD B.C.

FC 30906.

EQUIPMENT Water Truck RATE 200 LOCATION Mine AREA.

DATE	PARTICULARS	AMOUNT	BALANCE
	Supply water Truck plus Extra Driver.		
	Dec 1st — Dec. 14th /76.		
	14 days @ 200	2800	
	adjustment as per agreement Less $800 → $2000		
Dec 15/76.	FORDING PURCHASING DIST. 05P3270100 100% MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISCT. MARK THIS SQUARE IF FED. TAX EXEMPT — IMMED. PAY APPROVAL D.C. Caplin Dec. 15/76		
	Total —		$2000

KERPAN & DELFS LTD.

BOX 742 – KAMLOOPS, B.C.

INVOICE

№ 00759

Phone: 374-1708

TO: Fording Coal
Box 100.
ELKFORD.
B.C.

F.C. 30906.

EQUIPMENT WATER TRUCK. RATE 200.00 PER DAY. LOCATION Eagle Mtn. Fording Coal

DATE	PARTICULARS	AMOUNT	BALANCE
	NOV 15 – NOV-30./76.		
	15 days @ 200.00 PER DAY		
	EXTRA Driver.	$3000.00 PER DAY	
Dec 1/76.			
	Total –		$3000.00

FORDING PURCHASING
DIST. 05 P3270100 100%
MARK THIS SQUARE IF PROV. TAX EXEMPT
CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT
IMMED. PAY
APPROVAL
A.C. Cardin
Dec. 15/76

INVOICE

№ 00763

KERPAN & DELFS LTD.

BOX 742 – KAMLOOPS, B.C.

Phone: 374-1708.

TO: Fording Coal Ltd.
Box 100
Elkford
B.C.

NO.
F.C. 30 906

EQUIPMENT Water Truck. RATE ✓ LOCATION Fording Coal site.

DATE	PARTICULARS	AMOUNT	BALANCE
	Nov 1 – Nov 15		
	14 days @ 200.00		$2800.00
	(2 drivers)		
	FORDING PURCHASING DIST. 05P3270100 $2800.00 MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISCT. MARK THIS SQUARE IF FED. TAX EXEMPT — INVED. PAY F.O.B. POINT — APPROVAL A.C. Taylor Nov. 15/76		
Nov 19/76			
	FC 30906		
	Total –	2800.00	

KERPAN & DELFS LTD.

BOX 742 – KAMLOOPS, B.C.

FORDING
NOV 8 1976
PURCHASING

INVOICE
№ 00761

Phone: 374-1708.

TO: Fording Coal Ltd.
Box 100
Elkford.
B.C.

FC 30 906.

EQUIPMENT Water Truck RATE ✓ LOCATION Fording Coal site

DATE	PARTICULARS	AMOUNT	BALANCE
	Supply (2 drivers) + truck for water supply.		
Oct 15 – 31 ✓			
	14 days @ 200. ov/xc		$2800 ov/xc
	2 days off – (Strike day + Thanksgiving)		
	FC 30 906		
Nov 1/76.			
	Total	$2800 ov/xc	

FORDING PURCHASING
DIST. 05 P3270100
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
F. O. B. POINT
CASH DISCT
IMMED. PAY
APPROVAL

KERPAN & DELFS LTD.

BOX 742 – KAMLOOPS, B.C.

INVOICE

№ 00747

Phone: 374-1708.

TO: Fording Coal LTD.
Box 100
Elkford.

EQUIPMENT Water Truck. RATE _____ LOCATION Mine Site

DATE	PARTICULARS	AMOUNT	BALANCE
	Supply water Truck plus 2 drivers.		
	Oct 15/– Oct 15/76.		
	15 days @ 200.00		3000.00
	FORDING PURCHASING DIST 05P 3270100 MARK THIS SQUARE IF PROV. TAX EXEMPT CASH DISCT. MARK THIS SQUARE IF FED. TAX EXEMPT IMMED. PAY APPROVAL A.C. Coffin Oct. 29/76		
Oct 30/76			
	Order No. FC 30906.		
	Total –	3000.00	

KERPAN & DELFS LTD.

BOX 742 – KAMLOOPS, B.C.

INVOICE

№ 00743

Phone: 374-1708.

TO: Fording Coal Ltd.
Box 100
Elkford, B.C.

ATTN
A. Taplin

EQUIPMENT Water Truck RATE $150.00/Day LOCATION Fording Coal Site

DATE	PARTICULARS	AMOUNT	BALANCE
	Supply water truck. For Connors Drills (2) at Mine site.		
Oct 7/76.	Sept 26 — Sept 30/76. $150.00 — 5 days.	$750.00	
	Total —		$750.00

FORDING PURCHASING
DIST. 3270/00
MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT — INVOICED, PAY
APPROVAL
A. G. Taplin
Oct. 7/76

THIESSEN EQUIPMENT LTD.

1170 GLEN DRIVE, VANCOUVER, B.C. V6A 3M6 • TEL. 254-6258
TELEX 04-55221

DATE: October 13, 1976

INVOICE TO: Fording Coal Limited
Purchasing, Box 100
Elkford, B.C. V0B 1H0

CONSIGNED TO: above

INVOICE № 825

SHIPPED VIA	PREPAID	COLLECT	SHIPPING ORDER No.
Picked Up @ Kiki's Transfer		X	14546

SHIPPING DATE	FEDERAL SALES TAX	PROVINCIAL SALES TAX	CUSTOMER'S ORDER No.
Sept. 30/76	Exempt	7% Extra	FC 29603 ①

Quantity	Unit	Description	Unit Price	Amount
50	50#/bags	Quik-Gel	$4.85	$242.50
			7% SS Tax	16.98
				$259.48

NOV 1 1976
05 P3290700
CS.

ALL INVOICES NET 30 DAYS
REMIT FROM THIS INVOICE — NO STATEMENTS ISSUED

THIESSEN EQUIPMENT LTD.

1170 GLEN DRIVE, VANCOUVER, B.C. V6A 3M6 • TEL. 254-6258
TELEX 04-55221

DATE: Aug 27, 1976

INVOICE TO: Fording Coal Limited
c/o Cominco Purchasing
Trail, B.C. V1R 4L8

CONSIGNED TO: above @ Fording Valley

INVOICE No. 17,444

SHIPPED VIA	PREPAID	COLLECT	SHIPPING ORDER No.
Kill's Transfer from Soarwood, B.C.		X	17[illegible]

SHIPPING DATE	FEDERAL SALES TAX	PROVINCIAL SALES TAX	CUSTOMER'S ORDER No.
Aug 2[illegible]	[illegible]	7% Extra	Archie Miller

Quantity	Unit	Description	Unit Price	Amount
100	50#/bags	Quik-Gel	$4.85	$485.00
			7% Tax	33.95
				$518.95

05- P3290700.

Paid Aug 20/76
Cheque # 8717

ALL INVOICES NET 30 DAYS
REMIT FROM THIS INVOICE — NO STATEMENTS ISSUED
Baroid Drilling Muds & Chemicals — Rock Bolting Supplies — Sub's & Stabilizers — Drill Stems — Rotary Bits

THIESSEN EQUIPMENT LTD.

1170 GLEN DRIVE, VANCOUVER, B.C. V6A 3M6 • TEL. 254-6258
TELEX 04-55221

DATE: Nov 27, 1976

INVOICE TO: Fording Coal Limited
c/o Cominco Purchasing
Trail, B.C. V1R 4L8

CONSIGNED TO: above @ Fording Valley

FC 29214 (1)

INVOICE No. 37[illegible]

SHIPPED VIA	PREPAID	COLLECT	SHIPPING ORDER No.
[illegible]'s Transfer from Sparwood, B.C.		X	[illegible]

SHIPPING DATE	FEDERAL SALES TAX	PROVINCIAL SALES TAX	CUSTOMER'S ORDER No.
[illegible]	[illegible]	[illegible]	Archie [illegible]

Quantity	Unit	Description	Unit Price	Amount
100	50 #/bags	Quik-Gel	$4.85	$485.00
			7% Tax	33.95
				$518.95

FORDING ACCOUNTING OFFICE
NOV 16 1976
PAID

duplicate! cheque returned

11 210 NOV 76

FORDING PURCHASING
DIST. 02 - 3720020
MARK THIS SOURCE IF PROV. TAX EXEMPT
MARK THIS SOURCE IF FED. TAX EXEMPT
APPROVAL

ALL INVOICES NET 30 DAYS
REMIT FROM THIS INVOICE — NO STATEMENTS ISSUED
Baroid Drilling Muds & Chemicals — Rock Bolting Supplies — Sub's & Stabilizers — Drill Stems — Rotary Bits

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

018

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 39722

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7547

P.O. 30859

DATE 12/09/76

3

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
	21	[illegible]	30599	11/01/76	11/30/76	RENTAL				475.00	33.25	508.25	508.25

DEC 20 1976
05 - 98222

Mw Rental

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 508.25

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

Rentway

A MEMBER OF THE NATIONWIDE Trimac GROUP

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CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 39726

CUSTOMER 7547

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

P.O. 30931

DATE 12/09/76

(2)

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
EM	21	35680	42306	11/01/76	11/30/76	RENTAL				475.00	33.25	508.25	508.25

DEC 20 1976
05 - 98223

No Rental

TOTAL CHARGES THIS INVOICE ▶ 508.25

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

INVOICE

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

Rentway

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 36934

091645

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7547

P.O. 30859

DATE 10/22/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
BJ	21	00214	38599	9/20/76	9/30/76	RENTAL				158.33	11.08	169.41	169.41

11 171 NOV '76

FORDING PURCHASING
DIST: 05-98222
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT 093
CASH DISCT
IMMED. PAY
APPROVAL
F. O. B. POINT

Spot Rental
30-3

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 169.41

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

Rentway

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 37614

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7547

P.O. 30859

DATE 11/08/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
GE	21	09665	38599	10/01/76	10/31/76	RENTAL				475.00	33.25	508.25	508.25

Oct Rental

NOV 17 1976
OS - 98222

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 508.25

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

Rentway

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 57818

0

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7547

P.O. 30931

DATE 11/08/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
GL	21	09680	42300	10/21/76	10/31/76	RENTAL				158.33	11.08	169.41	169.41

NOV 17 1976
05 - 98223

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 169.41

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

Rentway

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 37809

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

1

CUSTOMER 7547

DATE 11/08/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
EZ	1	09666	38600		10/18/76	RENTAL				SEE ATTACHED		453.64	453.64

NOV 17 1976
05-98223

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 453.64

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

Rentway

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 24504

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

FORDING APR 1 0 1976 PURCHASING

P.O. 30242

CUSTOMER 7547

DATE 4/09/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
JW	21	06714	14935	3/01/76	3/31/76	RENTAL				475.00	23.75	498.75	498.75

MARCH

FORDING PURCHASING
DIST. 05 - NR03514
MARK THIS SOURCE IF PROV. TAX EXEMPT
MARK THIS SOURCE IF FED. TAX EXEMPT
JS
PAID
DAY
APPROVAL
D.C. Caplin

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 498.75

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

Rentway

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

FORDING
APR 15 1976
PURCHASING

INVOICE NUMBER 24516

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7547

P.O. 30562 (3)

DATE 4/09/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
JW	21	06708	38527	3/01/76	3/31/76	RENTAL				475.00	23.75	498.75	498.75

MARCH

FORDING PURCHASING
DIST. 05 — N 903514
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
JS
CHECK DIST.
PRICED.
PAY
APPROVAL
H.C. Tapini

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 498.75

INVOICE

RENTWAY CAN. LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

Rentway

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 22498 D 001422

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

FORDING
MAR 15 1976
PURCHASING

CUSTOMER 7547

P.O. 30562 (2)

DATE 3/08/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
LD	21	06708	38527	2/01/76	2/29/76	RENTAL				475.00	23.75	498.75	498.75
				Feb.	1976								

FORDING PURCHASING
DIST. 05-98206 →
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
CASH DISCT
IMPLED. PAY 028
APPROVAL

P29307 00

03 624 MAR '76

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 498.75

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 20531

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

FORDING
FEB 18 1976
PURCHASING

FC 30133

QP

CUSTOMER 7547

DATE 2/13/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
EU	1	04959	14916		12/15/75	RENTAL				SEE ATTACHED		3629.86	
		LESS PREVIOUSLY BILLED AMOUNTS											
	31	04959	04461	6/01/75	6/30/75	PREV INV				475.00CR	23.75CR	498.75CR	
	31	04959	07103	7/01/75	7/31/75	PREV INV				475.00CR	23.75CR	498.75CR	
	31	04959	09472	8/01/75	8/31/75	PREV INV				475.00CR	23.75CR	498.75CR	
	31	04959	12110	9/01/75	9/30/75	PREV INV				475.00CR	23.75CR	498.75CR	
	31	04959	14445	10/01/75	10/31/75	PREV INV				475.00CR	23.75CR	498.75CR	
	31	04959	16445	11/01/75	11/30/75	PREV INV				475.00CR	23.75CR	498.75CR	
GH	31	04959	18577	12/01/75	12/31/75	PREV INV				475.00CR	23.75CR	498.75CR	138.61

ANY CREDITS ARE APPLICABLE ONLY IF PREVIOUS INVOICES HAVE BEEN PAID

FORDING PURCHASING
DIST. 05-P2930700 $138.61
MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISC.
MARK THIS SQUARE IF F.E.D. TAX EXEMPT — PAID PAY
APPROVAL
N. C. Caplin

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 138.61

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

INVOICE

TRANSPORTATION LEASING

A MEMBER OF THE NATIONWIDE Trimac GROUP

VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

3 302 12

INVOICE NUMBER 20565

FORDING
FEB 16 1976
PURCHASING

FORDING COAL
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7547

P.O. 30562

DATE 2/13/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
ER	21	06708	30527	12/19/75	1/31/76	RENTAL				649.17	32.46	681.63	681.63

02 446 FEB 76

FORDING PURCHAS

DIST. 05-98206

MARK THIS SQUARE IF PROV. TAX EXEMPT — CASH DISCT.

MARK THIS SQUARE IF FED. TAX EXEMPT — PAID PAY

APPROVAL

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 681.63

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

A MEMBER OF THE NATIONWIDE GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 20539

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

FORDING
FEB 16 1976
PURCHASING

CUSTOMER 7547

P.O. 30242

DATE 2/13/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
EX	21	06714	14935	1/01/76	1/31/76	RENTAL				475.00	23.75	498.75	498.75

FOREIGN PERMIT APPROVAL
DIST. 05-P2830700
MARK THIS SQUARE IF PROV. TAX EXEMPT
PROV. DIST.
MARK THIS SQUARE IF FED. TAX EXEMPT
FED. TAX
APPROVAL
JS.
A.C. Caplin

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TOTAL CHARGES THIS INVOICE 498.75

INVOICE

A MEMBER OF THE [illegible]

TELEPHONE (403) 761-2040

TRANSPORTATION LEASING

A MEMBER OF THE NATIONWIDE TRINAC GROUP

CLARKSON • PEDALL • [illegible]

INVOICE NUMBER 9478

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7547
P.O. 30242
DATE 9/05/75

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
HL	21	06714	14935	8/01/75	8/31/75	RENTAL				475.00	23.75	498.75	498.75

August

Please pay on this copy.

FORDING PURCHASING
DIST. 05-P2930700
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
CASH DISCT.
INVOICE PAY
APPROVAL

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

ACCOUNTING COPY

TOTAL CHARGES THIS INVOICE 498.75

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

INVOICE

TELEPHONE [illegible]

TRANSPORTATION LEASING

A MEMBER OF THE NATIONWIDE [illegible] GROUP

INVOICE NUMBER [illegible]

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7047
P.O. 30342

DATE 9/05/75

E - ESTIMATED
A - ACTUAL

BATCH E	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	INVOICE PERIOD TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
HL	21	66714	14935	8/01/75	8/31/75	RENTAL				475.00	23.75	498.75	498.75

August

Please pay on this copy.

FORDING PURCHASING
DIST. 05-[illegible]20700
MARK THIS SQUARE IF PROV. TAX EXEMPT
MARK THIS SQUARE IF FED. TAX EXEMPT
MGR. DEPT.
APPROVED

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

ACCOUNTING COPY

TOTAL CHARGES THIS INVOICE 498.75

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 9840

TRANSPORTATION LEASING

A MEMBER OF THE NATIONWIDE Trimac GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 18577

FORDING
JAN 22 1976
PURCHASING

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

CUSTOMER 7547

P.O. 30135

DATE 1/16/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
GH	21	04959	14816	12/01/75	12/31/75	RENTAL				475.00	23.75	498.75	498.75

December

FORDING PURCHASING
DIST. 05 - P2930 700 $498.75
MARK THIS SCHEDULE 100% TAX EXEMPT
MARK THIS SCHEDULE P.S.T. TAX EXEMPT
CASH DISCT
PAYED. PAY
APPROVAL
A.C. Coplin
Jan. 23/76

TOTAL CHARGES THIS INVOICE 498.75

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

TERMS : NET ON DATE OF INVOICE. 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

INVOICE

RENTWAY CANADA LTD.
HEAD OFFICE: P.O. BOX 3500
CALGARY, ALBERTA

TELEPHONE (403) 261 - 8840

TRANSPORTATION LEASING

A MEMBER OF THE NATIONWIDE GROUP

BRANCH OFFICES:
VANCOUVER • PRINCE GEORGE • KAMLOOPS
CALGARY • EDMONTON
CLARKSON • REXDALE • WINDSOR

INVOICE NUMBER 18582

FORDING COAL LTD
P O BOX 100
ELKFORD B C
V0B 1H0

FORDING
JAN 22 1976
PURCHASING

CUSTOMER 7547

P.O. 30242

DATE 1/16/76

E - ESTIMATED
A - ACTUAL

BATCH B	BATCH S	UNIT NO.	REFERENCE	INVOICE PERIOD FROM MO DAY YR	TO MO DAY YR	TYPE OF CHARGE	QUANTITY	E/A	RATE	CHARGE BEFORE TAX	TAX	TOTAL CHARGE	UNIT TOTAL
GH	21	06714	14935	12/01/75	12/31/75	RENTAL				475.00	23.75	498.75	498.75

December rental 1975

FORDING PURCHASING
DIST. 2930 700 $498.75
MARK THIS SQUARE IF PROV. TAX EXEMPT
CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT
INVOICE PAY
APPROVED
Jan. 23/76

TOTAL CHARGES THIS INVOICE 498.75

PLEASE RETURN ONE COPY OF INVOICE WITH REMITTANCE.
MAKE ALL PAYMENTS TO : P.O. BOX 3500
CALGARY, ALBERTA

TERMS : NET ON DATE OF INVOICE, 1½% PER MONTH (18% PER ANNUM) ON OVERDUE ACCOUNTS.

CUSTOMER COPY
RETURN ONE COPY WITH REMITTANCE

INVOICE

INVOICE

Widco (CANADA) SALES & SERVICE LTD.
518 · MORAINE ROAD N.E.
CALGARY, ALBERTA T2A 2P2

TELEPHONES: 272-7330
24 HOURS: 26[illegible] 9894

No. 1153

SOLD TO: FORDING COAL LIMITED
Purchasing
Box 100
ELKFORD, B.C.

SHIP TO: Picked Up

DATE	SHIPPED VIA	FEDERAL LICENCE NO.	PROVINCIAL LICENCE NO.	YOUR ORDER NO.	OUR ORDER NO.
August 9/75	Picked Up			FC 25662	

BACK ORDERED	QUANTITY ORDERED	DESCRIPTION	QUANTITY SHIPPED	UNIT PRICE	AMOUNT
	1	GVS-S 1250 V Tube	1	34.00	34.00
		Repair GR Section on			
		Conde Serial # G27-01-117			
		5 Hours @ $20.00/hour			100.00

FORDING PURCHASING
DIST. 02 P3270700 $134.00
MARK THIS SQUARE if PROV. TAX EXEMPT
CASH
MARK THIS SQUARE if FED. TAX EXEMPT
MONTHLY PAY
APPROVAL
Aug 12/75

NET 30 DAYS

SERVICE CHARGE 1½% PER MONTH ON OVERDUE ACCOUNTS

FEDERAL SALES

SUB - TOTAL	134.00
TAX	EXEMPT
TOTAL	134.00

We certify that the goods ordered/imported hereby are to be used as outlined in Sections 1, 3 & 4 Part XIII of schedule III of the Excise Tax Act.

NAME OF PURCHASER

INVOICE

Widco (CANADA) SALES & SERVICE LTD.
518 - MORAINE ROAD N.E.
CALGARY, ALBERTA T2A 2P2

TELEPHONES: 272-7330
24 HOURS: 262-0894

1220

SOLD TO: Fording Coal Limited
P.O. Box 100
Elkford, B. C.

SHIP TO: same

DATE	SHIPPED VIA	FEDERAL LICENCE NO.	PROVINCIAL LICENCE NO.	YOUR ORDER NO.	OUR ORDER NO.
May 6/76	Mail	[illegible]		FC 28928	

BACK ORDERED	QUANTITY ORDERED	DESCRIPTION	QUANTITY SHIPPED	UNIT PRICE	AMOUNT
	4	roll of chart film #15-1032-02	4	50.00	[illegible]
		02 P 3270700			
		02 P 3290700			

FORDING PURCHASING
DIST. 02 P 3270700 $102.70
02 P 3290700 $100.00
MARK THIS SQUARE IF PROV. TAX EXEMPT
CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT
IMMED. PAY
APPROVAL
Aug. 12/76

NET 30 DAYS

SERVICE CHARGE 1½% PER MONTH ON OVERDUE ACCOUNTS

SALES TAX

SUB - TOTAL	[illegible]
TAX	[illegible]
TOTAL	[illegible]

P.M. Daignault

INVOICE

Widco (CANADA) SALES & SERVICE LTD.
518 MORAINE ROAD N.E.
CALGARY, ALBERTA T2A 2P2

FORDING
DEC 22 1976
PURCHASING

TELEPHONES 272 7330
24 HOURS 262 9994

№ 1300

SOLD TO: Fording Coal Limited.,
Box 100, Elkford. B.C.

SHIP TO: SAME

DATE	SHIPPED VIA	FEDERAL LICENCE NO.	PROVINCIAL LICENCE NO.	~~YOUR ORDER~~ NO.	OUR ORDER NO.
Dec 20/76				FC 1439	

BACK ORDERED	QUANTITY ORDERED	DESCRIPTION	QUANTITY SHIPPED	UNIT PRICE	AMOUNT
		Labour			220.00
		Materials: 1 fibre pulley			9.29
		2 cable clamp			4.10
		1 collar			3.85
		15'Tygothane plastic tubing			4.50

FORDING PURCHASING
DIST. P3290200
Jan 4 1977

NET 30 DAYS

SERVICE CHARGE 1½% PER MONTH ON OVERDUE ACCOUNTS

We certify that the goods ordered/imported have not to be used as outlined in Section [illegible] of schedule III of the [illegible] Act.

NAME OF [illegible]

FEDERAL

SUB - TOTAL	241.74
TAX	EXEMPT
TOTAL	241.74

	Code	Dr.		Cr.	
Inter-Office Account	08-15100	$		$ 241	24
B.C. Sales Tax Payable	08-15930			1	50
	DE [illegible]	243	26		

Widco (CANADA) SALES & SERVICE LTD.
518 - MORAINE ROAD N.E.
CALGARY, ALBERTA T2A 2P2

№ 1102 FC 1439

FORDING
DEC 22 1976
PURCHASING

QUANTITY	DESCRIPTION	PART No.	AMOUNT	
1	Fibre Pulley	15-1400-01	9	79
2	cable clamp	04-9700-15	4	00
1	collar	04-9700-14	3	85
15'	Tygothane plastic tubing		4	50
			21	74

NAME: Fording Coal Ltd DATE: Dec 16/76
ADDRESS: Box 100, Elkford B.C.
TELEPHONE:
MODEL 1200 SERIAL No. 48
ACCESSORIES: GR

CUSTOMER SERVICE INSTRUCTIONS:

Overhaul - cut off damaged cable & rebuild head. Check gain on gamma pen. Overhaul collector General check & cleaning.

DATE	TECHNICIAN	HOURS	AMOUNT	
Dec 16	D. Gibeau	3 hr	60	00
Dec 17	D. Gibeau	8 hr	160	00
			220	00

DESCRIPTION OF WORK COMPLETED:

Disassembled & cleaned winch drive system. Repacked winch drum bearings. Rebuilt cable anchor and collector. Repaired winch brake anchor peg & brake linings. Checked oil in gearbox. Rebuilt head & plastic covering. Checked pen gain - O.K. Trouble was in ratemeter - Increased ratemeter output

IN: I HEREBY AUTHORIZE THE ABOVE WORK TO BE DONE TOGETHER WITH NECESSARY MATERIALS.
SIGNATURE.....

OUT: I HEREBY ACKNOWLEDGE MY INDEBTEDNESS FOR PARTS AND SERVICES RENDERED ON THIS WORK ORDER.
SIGNATURE.....

LABOR	220.00
PARTS	21.74
SUBTOTAL	241.74
TAX	—
TOTAL	241.74

ALL ESTIMATES ARE FOR LABOR ONLY - MATERIALS ADDITIONAL. THIS COMPANY DOES NOT ASSUME ANY RESPONSIBILITY WHATEVER FOR INVOICES WITHIN 30 DAYS PAYMENT LEFT FOR REPAIR, STORAGE OR OTHER PURPOSES IN THE EVENT OF NON PAYMENT OF THIS SAID TOTAL CHARGE THE OWNER AUTHORIZES THIS COMPANY TO REPOSSESS THE VEHICLE OR EQUIPMENT AND HOLD IT UNTIL THIS TOTAL BILL IS PAID OR TO SELL SAID EQUIPMENT OR VEHICLE

Expense Account

1. Do Not Use Pencil
2. Please Submit Promptly to Your Home Office

Cominco

Name Robert Chapman Month of September

Day of Month	Location	Daily General Expense	Hotel Accommodation	Transportation	Sundry Details	Sundry Amount
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28	Wpg – Calgary	5.50		87.50	Taxi: home → Wpg. Airport	3.30
29	Calgary – Drumheller	6.20		10.70	Calg. Airport – hotel	5.20
30					hotel – bus Terminal	2.30
31						
					Brought Forward From Reverse	
Sub-Totals		$11.70	$	$98.20		$10.80

Advances, Payments Made by Cominco Including Cominco Credit Cards	From Office	$		Summary of Expense	$		Distribution of Total Expense	$	
				Daily General Expense	11	70	Codes or Accounts		
Cash				Hotels					
Air Fare				Transportation	98	20	P3270300	120	7
Car Rentals									
Other (Specify)				Sundry	10	80			
Sub-Total				Total Expense 2	120	70			
Less: Unused Air Fare				Less: Net Advances 1	0	00			
Tickets Attached									
				Balance Owing – to Me 3	120	70			
Net Advances 1		0	00	– to Cominco 4			Total Expense	120	7

3 For Balance Owing Employee, check Following:

☐ Remit to Me at Following Address:

☑ Deposit to My Account No. 4208 at Bank of ~~Cominco~~ Royal Bank → at ELKFORD

4 Amounts Owing to Cominco Are To Be Paid on or Before Submitting This Account.

Purpose of Trip: From WINNIPEG to ELKFORD to WORK AT FORDING COAL
New temporary staff employee, special assignment

A.C. Taylor R. Chapman Sept 30 19 76

Approved as to Distribution and for Payment Certified as a True Accounting of my Expenses Date

For Office Use Only

09/356 EXP ACT GAGNON A

J/E No.	Description for Key Punching	Pref	Code or Ledger Account	Debit	Credit
		09	P3270300	120 70	
		08	1010		120 70

J/Page Line Date 19

POSTED

Signed for Accounting Approved by Accountant

211-01

Invoice No.
F-718

Purchase Order No

Cominco

Date
January 26, 1976

R. Shanks
c/o A. Taplin

Cominco Ltd.,
Box 100
Elkford, B.C.
V0B 1H0
When making payment please quote account No

	Current Charges	Account to date
Previous Account Rendered		
Dec/75 Room & Board Charges		
Sept 29-Oct 12	38.50	
Oct 13 - 26	42.00	
Oct.27 - Nov 9	49.00	
Nov 10 - 23	49.00	
Nov 24 - Dec 7	14.00	
TOTAL		$192.50

Charge Code
00 P2930500 $192.50
A.C. Taplin Jan. 26/76

Balance due on or before

215-0420

GALLANT TRUCKING LTD.

RECEIVED
APR 13 1976
CONNORS DRILLING LTD.

SOLD TO CONNORS DRILLING LTD
VANCOUVER, B.C.

SHIPPED TO

ADDRESS _____ VIA _____

OUR NUMBER 20542
DATE MARCH 31/76
CUSTOMER'S ORDER
SALESMAN
TERMS $200. PER DAY
F. O. B.

INVOICE

	OPERATOR: BOND GALLANT				
	SUPPLIED WATER TRUCK				
	FOR DRILLING AT ELKFORD				
	PERIOD COVERED:				
	MARCH 16th TO MARCH 31st/76				
	16 DAYS @ $200.00 PER DAY			$3200	00
	PROJECT # 21-624				
	OM Bauchanft.				

D32

GALLANT TRUCKING LTD.
221 O'CONNOR ROAD
KAMLOOPS, B.C. V2C 5A5

RECEIVED
APR 13 1976
CONNORS DRILLING LTD.

OUR NUMBER 20543
DATE APRIL 7/76
CUSTOMER'S ORDER
SALESMAN
TERMS 200.00 PER DAY
F. O. B.

SOLD TO CONNORS DRILLING LTD
VANCOUVER, B.C.
SHIPPED TO
ADDRESS
VIA

INVOICE

	OPERATOR: BOYD GALLANT				
	SUPPLIED WATER TRUCK				
	FOR DRILLING IN ELKFORD.				
	PERIOD COVERED:				
	APRIL 1st TO APRIL 7/76				
	7 DAYS @ $200. PER DAY			1400	00
	PROJECT # 81-624				
	M Beaulieu				

D32

CRANBROOK PHOTO LTD.

Cameras — Music & Art Supplies
(Also Ramsay's Cameras & Art Supplies in Nelson, B.C.)

FORDING
SEP 30 1976
PURCHASING

CRANBROOK, B.C. V1C 1A4 APRIL 20 1976

NAME FORDING COAL

ADDRESS BOX 100, ELKFORD

(10)	ROLLS KM 135-36P		
	@ 6.75	67	50
	P.O. BC-29133		
	Daignault		
	Acct # 02 P3270700		
	Lookup	4	73
RECEIVED ABOVE IN GOOD ORDER BY		72	23

Mail	CLERK	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT
		R	- 4				

5110E FLATPAKIT ○ CRANBROOK LITHO-PRESS LTD. - 7

TERMS: Net 30 days. Overdue accounts will be charged interest of 2% per month.

1568

DEC - 9 1976

02-P3270700

PHONE 426-2919

915 BAKER ST.

CRANBROOK PHOTO LTD.

Cameras — Music & Art Supplies

(Also Ramsay's Cameras & Art Supplies in Nelson, B.C.)

CRANBROOK, B.C. V1C 1A4 Mar. 16 1976

NAME Fording Coal Ltd.

ADDRESS Box 100

Elkford, B.C.

QUANTITY	DESCRIPTION	AMOUNT	
5	KR135-36P @6.75	32	75
	P.O. FC 28078		
	1/3/76		
	KSR		
	MR03516		
	PM Daigneault		
	CBH Exp		
	LU		
		1	64
		34	39

RECEIVED ABOVE IN GOOD ORDER BY

CLERK	CASH	C.O.D.	CHARGE ✓	ON ACCT.	MDSE. RET'D.	PAIDOUT

BIGE FLATPAKIT O CRANBROOK LITHO-PRESS LTD. - 7

1374

TERMS: Net 30 days. Overdue accounts will be charged interest of 2% per month.

Fording COAL LIMITED

Managed by Cominco Ltd.

Date March 17/7

Order No. FC 28078

Ship to Fording Coal Limited
Fording Valley, B. C.
Via Cranbrook Express

nted below

diapositive colour
for colour prints for slides

1/3/76
KSR

LU

CONFIRMATION ONLY
PHONED ORDER

End Use for Tax Purposes Photography of diamond core

Activity Fording Operations

Requisition No.

Eng. Job No.

Mtce. Job Ref.

Appropriation No.

Date

Signed P. M. Daigneault

Supplier

	Prefix	Code	Work	Order	Const.
Charge To		MR	03	51	16

On Arrival Notify P.M. DAIGNAULT

Plant

Class

Approved

Order No. FC 28674

Warehouse Copy

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

8002 L-W

9337

FORDING

OCT 26 1976

PURCHASING

[illegible]

[illegible] CRANBROOK STREET, NORTH
CRANBROOK, B.C. V1C 3R1 — Phone: [illegible]
HEAD OFFICE — TELEPHONE (604) 731-6151

P.O. NO. FC 13 DATE

NAME Fording Coal LTD.

ADDRESS [illegible]

CITY Fernie, B.C. V0B 1M0

ACCOUNTING

CLERK	C.O.D.	CASH	CHRGE	CREDIT ACCT.	PAID OUT	R.A.	APP. BY
[illegible]			[illegible]			[illegible]	

DEPARTMENT	AMOUNT	
[illegible]	97.	25
[illegible]	19.	45
[illegible]	5.	55
10 960 OCT '76		
[illegible]	12.	65
[illegible] 02 P3270700		
LOCKUP	131.	24
25/10 [illegible]		
Mail [illegible]		

RECEIVED BY 4867 14.

NO MERCHANDISE MAY BE RETURNED WITHOUT THIS SLIP.

TERMS: 30 DAYS NET FROM DATE OF INVOICE SERVICE CHARGE OF 1½% PER MONTH ON OVERDUE BALANCE

THE STORES WITH THE SERVICE PERSONALITY

FORDING PURCHASING

DIST. 02 - P3270700

MARK THIS SQUARE IF PROV. TAX EXEMPT		CASH DISCT.
MARK THIS SQUARE IF FED. TAX EXEMPT		IMMED. PAY ✓
		APPROVAL

INITIALS INITIALES	EQUIP. NO. NO. D'ÉQUIP.	SHIPPER'S B/L NO NO. DU CONN. DE L'EXP.	DATE MONTH MOIS	DAY JOUR	YEAR ANNEE	DEST. BR SUCC. DE DEST. (FIRM)	CUSTOMER CODE CODE DU CLIENT		103 208057
PS		FC 28926	05	13	76	123			

CONNECTING CARRIER - NAME & PRO NO. NOM DE CAMIONNEUR INTERMEDIAIRE ET NO. DU PRO	ADVANCE FRAIS AVANCES	REVENUE REVENU	BEYOND FRAIS AU-DELÀ
		56.28	

RECEIVED FROM - REÇU DE

TRANSFERRED TO - TRANSFÉRÉ À

D-U-N-S 20-095-4717

MILLAR & BROWN LTD.

DIRECT [illegible] (PORT [illegible]) [illegible] (VICTOR EXPRESS (QUEBEC) LIMITED
DIRECT WINTERS [illegible] (TERN) LIMITED

Millar & Brown

~~Return to~~ Box 610 Faire Remise à

Sparwood, B.C.
VOB 2G0

CONSIGNEE - CONSIGNATAIRE

FORDING COAL LIMITED

FORDING VALLEY, B.C.

SHIPPER - EXPÉDITEUR

ADVANCE PLASTICS LIMITED
104 DONAGHY AVENUE
NORTH VANCOUVER, B.C.

NO. PIECES NO. PAQUETS	DESCRIPTION OF ARTICLES AND MARKS DESCRIPTION DES ARTICLES ET MARQUES	WEIGHT POIDS	AS COMME	RATE TAUX	AMOUNT MONTANT	PPD. OR COLL.
10	CTNS PAK BAGS	730		771	56.28	COLL
	PAYABLE IN 7 DAYS					
		chg 02 P3290700				

C.O.D. COLLECTIONS MUST BE CASH OR MARKED CHEQUE.
LES LIVRAISONS C/REMB. SONT PAYABLES COMPTANT OU PAR CHÈQUE VISÉ.

PLEASE RETURN DUPLICATE WITH YOUR PAYMENT
S'IL VOUS PLAÎT RETOURNER DUPLICATA AVEC VOTRE PAIEMENT

4 ORIGINAL INVOICE - FACTURE ORIGINALE

KIKI & SONS TRANSFER LTD.

BOX 356 SPARWOOD, B.C. V0B 2G0

№ 1102

FROM Ltd. WAREHOUSE

TO FORAING - COAL

ADDRESS

DATE 10/5/76

YOUR ORDER

CITY

PACKAGES	RECEIVED IN APPARENT GOOD ORDER	RATE PER CWT.	RATE PER HOUR	AMOUNT $	
50	QUICK - COAL	250 #			
	TH. No 14546				

RECEIVED BY C. Spady

TOTAL PACKAGES 50

C.O.D. CHARGE Collect

TOTAL WEIGHT 25000#

CHARGE

Finding
Box 100
Fernie. B.C.

Date May 6/76

Date	Particulars	Debit	Credit	Balance
	BALANCE FORWARD			
feb 1/76	1465	125 00		
1 4	1423	133 00		
1	1466	125 00		
1 5	1102	37 00		
1 7	1470	125 00		
1	1469	125 00		
1 8	6828	94 00		
1	1106	55 00		
1 8	1472	125 00		
1 10	9557	34 00		
1 19	1484	125 00		
1	1440	52 00		
1 20	6830	200 00		
1 18	9600	65 00		
1 20	6829			

INVOICE

ADVANCE PLASTICS LTD.

POLY BAGS – TARPS & COVERS

104 Donaghy Ave.,
North Vancouver, B.C. V7P 2L5
Phone 980-8388

Fording Coal Limited,
Fording Valley, B.C.

INVOICE NO. 03289

YOUR ORDER NO. FC 28926

DATE May 13,1976.

VIA Millar & Brown

FED. TAX LIC. ■ SV 5268 SS & MA TAX NO. Extra TERMS. NET 30 DAYS

OUT OF TOWN ADD 15¢ EXCHANGE

3,977 only 14 x 30 - 6 Mil Bags @ 141.76 per M	563.78
SUB TOTAL	
12% FED. TAX	
SUB TOTAL	563.78
5% SS & MA TAX	39.46
SHIPPING	
TOTAL INVOICE	603.24

WE HAVE CONSIDERED THIS ORDER COMPLETE THANK YOU.

FORDING ACCOUNTING PAID

DIST. 02 - P3290700

MARK THIS SQUARE IF PROV. TAX EXEMPT

MARK THIS SQUARE IF FED. TAX EXEMPT

CASH DISC'T

PAY

APPROVAL

Interest charged on overdue accounts.

Nelson Daily News

COMMERCIAL PRINTING DEPARTMENT

INVOICE № 1137

DUNS 20-801-3102

Fording Coal Limited,

Fording Valley, B. C.

P. O. BOX 700
NELSON, B. C. May 19 76

- PRINTERS — LITHOGRAPHERS
- RULERS — BOOK BINDERS
- PHOTO ENGRAVERS — COPYING

OUR ORDER NO.	DESCRIPTION	AMOUNT
Your order #FC28927		
6362	2,000 Sample tags #8070	89 25
	Tax 7%	6 25
		95 50

FORDING ACCOUNTING PAID

FORDING PURCHASING
DIST 02-132 80700
MARK THIS SQUARE IF PROV. TAX EXEMPT
CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT
LINED FOR
APPR
F. O. B. POINT

ALL ACCOUNTS NET AND DUE WHEN RENDERED

EX

BURCRAFT

INDUSTRIES

P.O. Box 3281, Vancouver B.C. V6B 3X9 Telephone ~~872-5721~~ 224-6516

Terms Net 30 Days

FOB Vancouver B.C.

Fording Coal Ltd.,
Purchasing Department,
Elkford, B.C.
V0B 1H0

(1)

Invoice No.	Date	Your Order No.	S.S.Tax No.
7618	Nov. 19/76	F.C. 409	Charge

Federal Sales Tax
S.V. 5268

NOV 25 1976

02 - P3290700

2 Rolls 8" Tie Wires	18.35ea.	36.70
Less Federal Sales Tax Allowance		.99
		35.71
S. S. Tax		2.50
		38.21

Shipped Collect via Millar & Brown to: Fording Valley, B.C.

Purchasing Copy

End Use for Tax Purposes: Sample Bag Closures

Activity: Fording Operations

Requisition No.

Eng. Job No.

Mtce. Job Ref.

Appropriation No.

Date: Nov. 3/76

Signed: [illegible]

Supplier: Burcraft Ind.

	Prefix	Code	Work	Order	Const.
Charge To	02	P3	29	07	00

On Arrival Notify: A. TAPLIN

Plant: Mine Geology Dept.

Class

Approved

Order No. F.C. 409

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

8082 L-W

SIMPLEX
BURCRAFT
INDUSTRIES

P.O. Box 3281, Vancouver B.C. V6B 3X9 Telephone ~~872-5XXX~~ 224-6516

Terms Net 30 Days

FOB Vancouver B.C.

Fording Coal Ltd.,
Purchasing Department,
Elkford, B.C.
V0B 1H0

Invoice No.	Date	Your Order No.	S.S.Tax No.
7541	May 28/76	FC 28925	Charge

Federal Sales Tax # SV 5268

2 Rolls (5M) ~~8XX~~ 8 " Tie Wires	18.35ea.	36.70
Less Federal Sales Tax Allowance		.99
		35.71
S.S. Tax		2.50
		38.21
Parcel Post		4.85
		43.06

FORDING PURCHASING
DIST. 02 P3270700
MARK THIS SQUARE IF PROV. TAX EXEMPT | CASH DISCT
MARK THIS SQUARE IF FED. TAX EXEMPT | IMMED. PAY
F. O. B. POINT | APPROVAL

FORDING ACCOUNTING PAID

P.O. BOX 4026
EDMONTON, ALBERTA
T6E 4S8

DELIVERY TICKET No.	JOB No.	RENTAL ORDER No.	DISTRICT	INVOICE No.
PSS-1245	-	-	Canada	C 06790

ER No.	DATE SHIPPED	VIA	FROM	TO
6368	3-26-76	Millar & Brown Ltd.	Edmonton	Elkford British Columbia

Fording Coal Ltd.
Box 100
ELKFORD, B.C.

(1)

TERMS: Net 30 Days.

Sperry-Sun Magnetic Single-Shot Type "B" Instrument Supplies:

1 1A8116 Developer & Fixer ..... $ 3.00

Transportation Charges: To ship above from Edmonton to Elkford, B.C., via Millar & Brown Ltd. as requested .. 10.50

TOTAL INVOICE AMOUNT $13.50

+ .68 BCST

Fed. or Prov. Taxes not included.

:bea

NOV 29 1976

04-NR03511

RUSSELSTEEL

RUSSELSTEEL LTD. LTÉE

2020 17TH AVE. SE, BOX 68, CALGARY T2P 2G9
TEL 403 265-6600 TELEX 038-21683

PROV. SALES TAX NO.	FED. SALES TAX NO.	CUSTOMER REFERENCE	CUSTOMER NO.	INVOICE NO.	DATE ORDERED	INVOICE DATE	PA
00000000	SU526800	FC31040	2960262	91076	17/12/76	17/12/76	

SOLD TO
FORDING COAL LIMITED
PO BOX 100
ELKFORD BC

FORDING
JAN 7 1977
VOB 1HO
PURCHASING

SHIP TO
SAME

QTY ORD	SHIPPED	LENGTH		S	WEIGHT	UNIT PRICE	AMOUNT
1029	1	102927	OD .231W BLACK IJ CASING		17496	42375	43509
					17496	SUB-TOTAL	43509
						FED TAX	3045
						PROV TAX	3045
						TOTAL TAX	46555

FORDING PURCHASING
DIST: 02-P3270700
018
PORT: SU LS.
Jan 11/77

* INDICATES TAX HAS BEEN ADDED

OUR SALES DESK IS OPEN SATURDAY MORNING TILL NOON.

TERMS: Net 30 days unless otherwise specified. Overdue accounts subject to service charge 1% per month (12% per annum). Returned goods will not be accepted unless by prior arrangement and accompanied by invoice. Goods returned will be subject to restocking charge.

EXEMPTION from taxes is extended to you without prejudice to ourselves to charge you with taxes at any subsequent date should the taxing authorities determine that the material covered by this invoice is taxable.

'DD'

ELK VALLEY BUILDING SUPPLIES

LTD.

P.O. BOX 670 SPARWOOD B.C.

V0B 2G0

SOLD TO: Fording Coal B.
Elkford, B.C.

DELIVER TO: Same.
Via Hilliar-Brown.

DATE: Nov. 1/81

YOUR ORDER NUMBER: FC 327

ACCOUNT NUMBER:

YOUR TELEPHONE NUMBER:

SOLD BY:

☐ TAKEN ☐ MATERIAL RETURNED ☐ C.O.D. ☐ APPROVED CHARGE PAYABLE ON RECEIPT OF STATEMENT.

☐ DELIVER ☐ CASH ☐ BUDGET PLAN

QUANTITY ORDERED	SIZE & KIND	GRADE & KIND	PRICE	AMOUNT	
25	Bags Portland Cement		3.75	93	75
		Less	10%	9.37	
				84.38	
Charge					
	Ordered by Don Warder.				
TERMS: NET PAYABLE ON RECEIPT OF STATEMENT. OUTSIDE ACCOUNTS ARE SUBJECT TO SERVICE CHARGE 1½% PER MONTH 18% PER ANNUM				.5	
SALES SUBJECT TO CONDITIONS AS ON REVERSE. RETURNED GOODS SUBJECT TO 10% HANDLING CHARGE.					
C 4608	PURCHASER'S SIGNATURE		TOTAL	84.	

E. & O.E.

norman wade company limited

wade

55 75 Milner Avenue, Scarborough, Ont. M1S 3R7 291-4211	36 58 Hymus Blvd. Pointe Claire, Que. H9R 1C9 697-6130	32 2747 Watt St. Parc Colbert Ste. Foy, Que. G1P 3T2 653-2828	
27 Suite 225, Courtenay Centre Crown St., Saint John, N.B. E2L 3V1 657-3620	19 5426 Portland Place Halifax, N.S. B3K 1A1 429-5002	98 101 West 5th Ave., Vancouver, B.C. V5Y 1H4 873-5566	84 10545 - 108 St. Edmonton, Alta. T5H 2Z8 426-0410
53 312 Leggett Dr., P.O. Box 13018 Kanata (Ottawa), Ontario K2K 1X3 592-2210	82 4620 Manilla Rd. S.E. Calgary, Alta. T2G 4B7 287-1530	51 90 Bessemer Rd. London, Ont. N6E 1R1 681-0330	54 2751 Barton St. E. Hamilton, Ont. L8E 2J8 561-9195

INVOICE - FACTURE: 82 - 21191

ORIGIN BRANCH

INVOICE DATE / DATE DE FACTURE: Nov. 4/76

TERR.: 3 | COPIES: 2

SOLD TO / VENDU A:
Fording Coal Limited
Fording Valley
British Columbia

SHIP TO / EXPEDIER A:
(1)

DATE OF ORDER - DATE DE LA COMMANDE	CUST. ORDER NO. - COMMANDE DU CLIENT	CUST. REQ'N NO. - REQ. DU CLIENT	DATE SHIPPED - DATE DE LIVRAISON
October 21, 1976	FC137	----------	November 3, 1976
FEDERAL SALES TAX - TAXE FEDERALE	**PROVINCIAL SALES TAX - TAXE PROVINCIALE**	**SHIP VIA - EXPEDIE PAR**	**F.O.B. - F.A.B.**
Exempt SV5268	7% Extra	Oldhams	Calgary

QUAN. ORDERED QTE. COMMANDEE	BACK ORDER A VENIR	CAT. NO.	DESCRIPTION	QTY. SHIP'D QTE. EXP.	PRICE PRIX	PER PAR	AMOUNT MONTANT	CODE
1		7951	ST - 4 Stereoscope	1	350 00	ea	350 00	511
2		7952	3x Oculars	2	180 00	ea	360 00	511
1		7961	Styroforam case	1	12 00	ea	12 00	511
							722 00	
			NOV 26 1976					
			08-P 3270700					
			5.8% FST Rebate				(41 88)	370

TERMS : TERMES
CHARGE SALES : NET 30 DAYS
VENTE À CREDIT : NET 30 JOURS

CASH SALES ☐ CASH ☐ CHEQUE
VENTE COMPTANT ☐ COMPTANT ☐ CHÉQUE

SUB TOTAL		
TAXE PROV. TAX 7%	50 54	361
TOTAL ▶	730 66	

OFFICE USE ONLY
POUR L'USAGE DU BUREAU SEULEMENT
472574

DUPLICATE INVOICE