K-Ewin Creek 81(1)A

EWIN CREEK COAL LICENCES

(260,-263, 2221)

EXPLORATION PROGRESS REPORT

February, 1982

Kootenay Land District
N.T.S. Sheet 82 J/2
Centering approx. - 5,547,350 N, 659, 350 E (UTM).
Held and operated by B.C. Coal Ltd.
For Work Completed Dec., 1981

GEOLOGICAL BRANCH
ASSESSMENT REPORT

B.C. COAL LTD.

John A. Hury
Geologist

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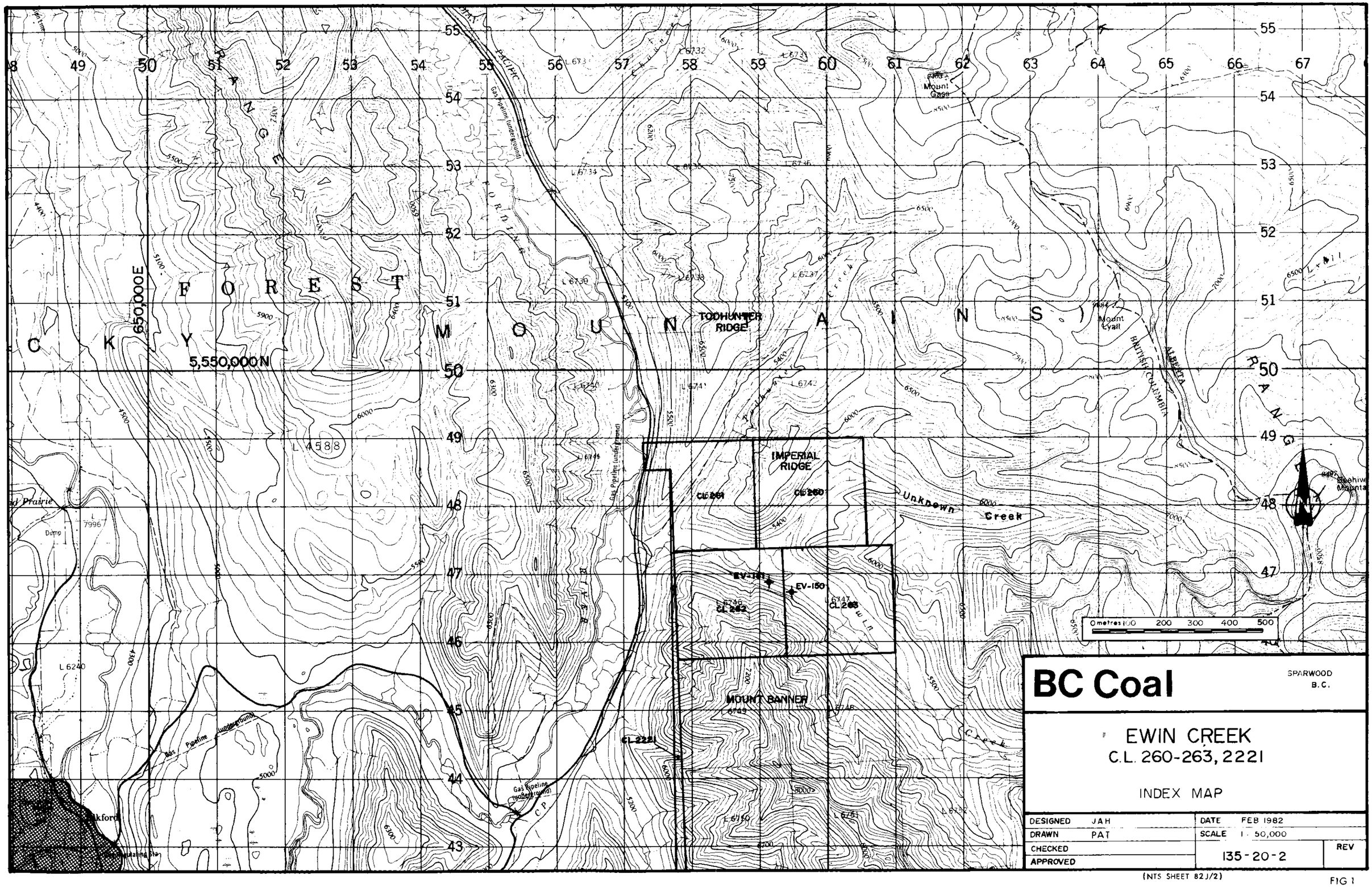

BC Coal

SPARWOOD B.C.

EWIN CREEK
C.L. 260-263, 2221

INDEX MAP

DESIGNED	JAH	DATE	FEB 1982
DRAWN	PAT	SCALE	1 : 50,000
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(NTS SHEET 82J/2)

FIG 1

INTRODUCTION

Location and Access

The Ewin Creek coal licences (260-263,2221) are located in the Fording River Valley of southeastern British Columbia. They are approximately 11 kilometres northeast of Elkford, B.C. and about 43 kilometres north of Sparwood, B.C. (Fig. 1).

A paved highway, connecting Elkford to the Fording Coal surface mine, and secondary logging roads, allow easy access to the licences. A Crowsnest Forest Products (CNFP) logging road runs along the bottom of the Ewin Creek valley, with exploration roads leading off to the drillholes and adit sites.

Topography, Climate and Vegetation

Ewin Creek has a gradient of about 23 metres per kilometre and flows through the centre of the licences in a flat valley bottom that in places, is up to 400 metres wide. Two streams, Todhunter Creek and Unknown Creek, with gradients of about 38 metres per kilometre flow through the licences into Ewin Creek from the northeast. These creeks drain an area of approximately 80 square kilometres and carry large volumes of water during spring run-off.

Prominent mountains rise sharply from the valley floor. On the south side of Ewin Creek is the north end of Mount Banner which reaches an elevation of about 2,235 metres within the licences, some 680 metres above the valley floor. This slope has ephemeral streams carrying run-off during the spring and early summer. The vegetation is primarily conifer with thick brush undergrowth in the drainages. The top of the ridge is more open grassland with sparse conifers.

Between Unknown Creek and Todhunter Creek is Imperial Ridge reaching an elevation of about 2,045 metres, some 495 metres above the valley floor. The southeast facing slope has few ephemeral streams and is primarily open grassland and deciduous vegetation. The northwest facing slope has some ephemeral streams, and the vegetation is primarily conifer, with thick brush in the drainages.

Other topographic features in the licences include the south end of Todhunter Ridge which is mainly open grassland with deciduous and conifer vegetation at lower elevations. Between Ewin Creek and Unknown Creek there is another ridge reaching an elevation of about 1900 metres in the licences. It is mainly conifer with deciduous vegetation at lower elevations.

The climate and weather conditions in the Ewin Creek area are similar to that of Sparwood and Elkford, having pleasant summers and falls, rainy and wet springs and cold winters with moderate to high amounts of snow.

Utilities

The nearest electrical power source is the Greenhills mine site to the west of Ewin Creek. B.C. Tel maintains a telephone exchange to service Elkford and the mines in the area. A Canadian pacific Railway spur, connecting Sparwood with the Fording Coal operations and the Greenhills mine, runs near the west licence boundary. A natural gas pipeline near the west licence boundary services the Fording Coal mine.

Land Description and Ownership

During February of 1968, Kaiser Resources Ltd., acquired the coal rights on 43, 725 hectares of coal-bearing lands from Crowsnest Industries Ltd. The Ewin Creek licences were part of the acquisition and cover 980 hectares, of which about 63% or 608 hectares are coal-bearing.

In October of 1980 Kaiser Resources Ltd. was acquired by the British Columbia Resources Investment Corporation (B.C.R.I.C.) and in February of 1981 became B.C. Coal Ltd., a member of the B.C. Resources Group.

EXPLORATION WORK

A summary of exploration work completed to date is contained in Table 1. Reports detailing past exploration work are listed in the bibliography.

Exploration Work - 1981

From October 24 to November 12 of 1981 two diamond drillholes were drilled on coal licences 262 and 263. The holes E.V.-150 and E.V.-151 reached depths of 348.8 metres and 391.8 metres respectively. The drill rig used was a Longyear 44 utilizing H.Q. drill rods and a triple-tube wireline core-barrel. The drill used a mud/water drilling fluid with mud tanks set up beside the rig and water pumped from Ewin Creek. The drill is owned and operated by D.W. Coates Enterprises ltd. of Richmond, B.C.

Core samples were collected from both holes and taken to Sparwood where it was logged, photographed and stored. Copies of the lithology logs for E.V.-150 and E.V.-151 are contained in Appendix I and Ia respectively. Strip logs for each hole plotted at 1:1000 scale are contained in a pocket. Coal seams recovered from the drillholes were sampled and taken to the B.C. Coal lab for analysis. The results of the analyses are contained in Appendix II and IIa. Gamma, Neutron and Density logs as well as borehole deviation surveys were done on both holes by Roke Oil Enterprises Ltd. of Calgary, Alberta. Copies of these logs are contained in a pocket. Location surveys for each drillhole were done by B.C. Coal surveyors.

Prior to moving the rig on the licences the access road was upgraded and the drillpads were constructed by dozer. Two D-8H Caterpillar dozers were used in road upgrading, site preparation and rig moving.

RECLAMATION

Reclamation work on the licences included slashing the upgraded access road and slashing and general cleanup of the drillsites. One dozer was used to bury all existing adit portals within the licences.

TABLE 1
SUMMARY OF EXPLORATION WORK COMPLETED

Type of Work	1967	1972	1978	1979	1980	1981
Bulldozer work - Main Access - Sec. Access						
Roads Upgraded					road to adits up-graded	Road to drillsites
Drill Sites						2
Adit Sites				2 Adit sites		
Drilling - Rotary: no of holes - : total metres - Core : no of holes : total metres						2 holes 740.6m
Adits: : no of Adits : total metres					2 adits #28,#29 81.5 m including X-Cuts.	
Adit Reentry	Six adits re-opened and bulk sampled					
Survey			Underhill Eng. Set survey points	Hand Trenches were surveyed	Survey of adits	Survey bore-holes
Geology		Reconaissance mapping on licences 1"-400'	4 months of 1:5000 detailed surface mapping. Coal was hand trenched	Trenching on Tod Hunter ridge Completion of surface mapping 1:5000		Log drill core

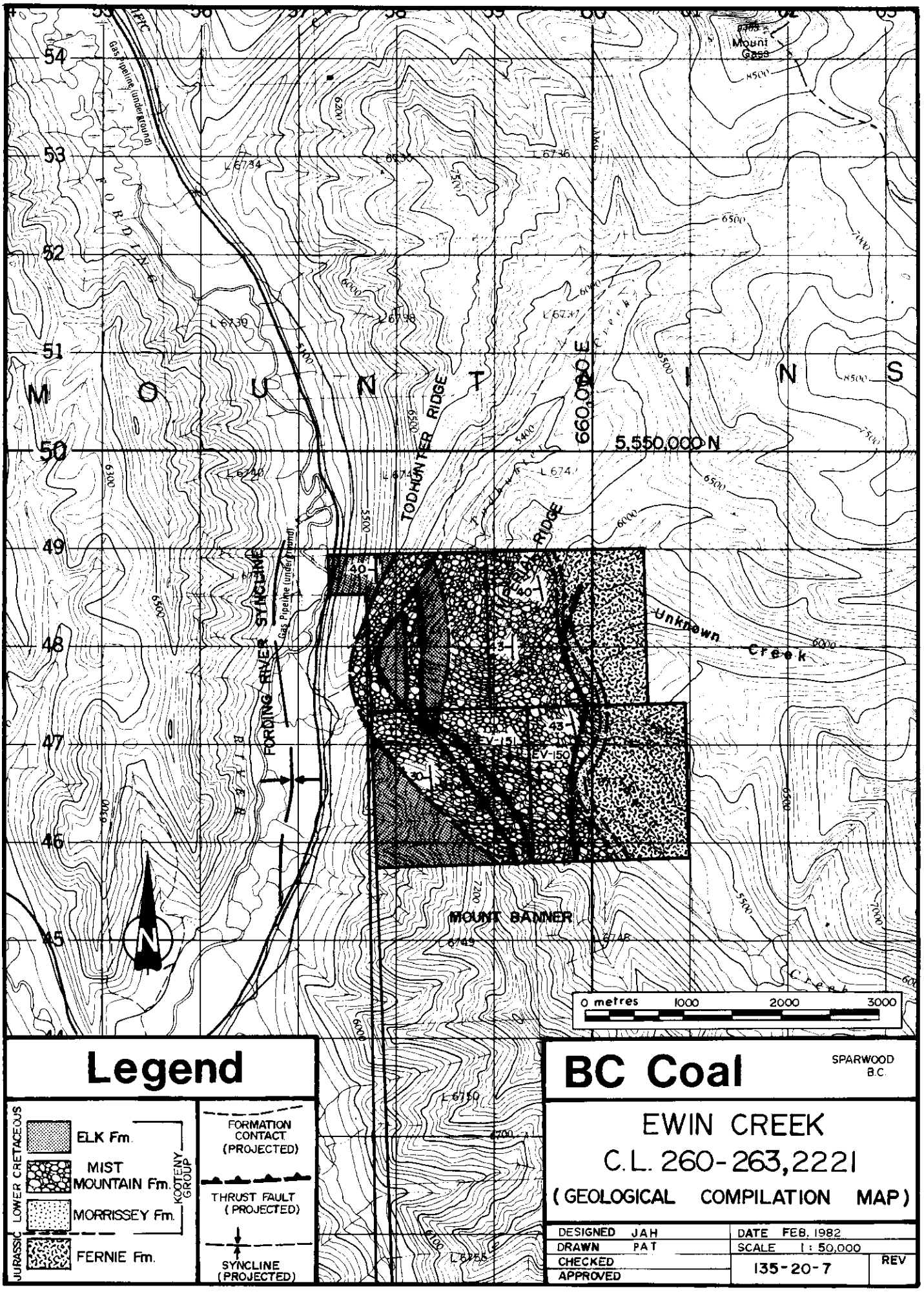
Mount Gass
Gas Pipeline (underground)
FORDING RIVER
TODHUNTER RIDGE
MOUNTAINS
660,000 E
5,550,000 N
Unknown Creek
FORDING RIVER SYNCLINE
MOUNT BANNER
0 metres 1000 2000 3000
Legend
JURASSIC
LOWER CRETACEOUS
ELK Fm.
MIST MOUNTAIN Fm.
MORRISSEY Fm.
KOOTENY GROUP
FERNIE Fm.
FORMATION CONTACT (PROJECTED)
THRUST FAULT (PROJECTED)
SYNCLINE (PROJECTED)
BC Coal
SPARWOOD B.C.
EWIN CREEK
C.L. 260-263,2221
(GEOLOGICAL COMPILATION MAP)
DESIGNED JAH
DRAWN PAT
CHECKED
APPROVED
DATE FEB. 1982
SCALE 1:50,000
135-20-7
REV

FIG. 2

GENERAL GEOLOGY

Figure 2 is a geologic compilation map of the licences. More detailed geologic data is shown on the 1:5,000 scale surface geology map and cross-sections in a pocket.

Stratigraphy

The major stratigraphic units within the Ewin Creek licences are the Jurassic Fernie Formation and the Jurassic-Cretaceous Kootenay Group.

a) Jurassic-Fernie Formation

Outcrops of the Fernie Formation were observed in the northwest end of Imperial Ridge. No detailed work was conducted on the outcrop. The formation has been described by various authors in other areas.

The lower part of the Fernie Formation is composed of dark grey silty shale which contains thin layers of ankeritic siltstone (Price, 1966).

The upper part is composed of rhythmically interbedded, fine-grained sandstone, siltstone and shale. Sandstones in the upper part are ankeritic or calcareous and are commonly laminated. Beds up to 30 centimetres in thickness occur, but are more commonly 1 to 8 centimetres thick (Jansa, 1972)

b) Jurassic-Cretaceous - Kootenay Group

The Kootenay Group was proposed by Gibson (1979). It is divided into three formations: the Morrissey, the Mist Mountain and the Elk.

(i) Morrissey Formation

The Morrissey Formation is further divided into the lower Weary Ridge Member overlain by the Moose Mountain Member. In E.V.-150 the Morrissey Formation appears in excess of 50 metres thick. Only the upper contact of the Moose Mountain member was mapped, no detailed measurements were done on the formation other than core description. The upper three metres of the member consists of uniform, thickly bedded, clean, coarse-grained quartz-chert sandstone. Below this it becomes more thinly bedded and varies

in grain size. Occasional thin shale bands and carbonaceous stringers occur. In outcrop it is a prominent cliff-forming sandstone on Imperial Ridge. It can be found on the ridge between Ewin and Unknown Creeks and in a drainage on Mount Banner.

(ii) Mist Mountain Formation

The Mist Mountain Formation appears in excess of 700 metres thick on Imperial Ridge and 1100 metres thick on Mount Banner. The anomolous thickness on Mount Banner is due to thrust faulting. The thickness on Imperial Ridge was obtained by projecting the total thickness of the Mount Banner section excluding the effects of faults.

The formation consists of interbedded conglomerate, coarse-to-fine-grained sandstones, siltstone, mudstone and coal. Drawing 135-20-10 shows a correlation between the two drillholes and the Imperial Ridge section.

Conglomerate bands occur as localized zones, usually associated with sandstones. The sandstones vary in thickness from 1 to 20 metres, are coarse-to-fine-grained, are usually cross-bedded and often contain silt and mudstone interbeds. The siltstone beds are usually laminated and show occasional cross-bedding. The mudstones range from grey to black in colour. The darker shades usually have plant detritus preserved along bedding planes. Coal seams of commercial quality and thickness occur within the formation.

(iii) Elk Formation

The contact between the Mist Mountain Formation and the overlying Elk Formation has been placed at the base of the first major sandstone or conglomerate overlying the uppermost major coal seam in the Mist Mountain Formation (Gibson, 1979). On Mount Banner the base of the Elk Formation has been placed at the base of a large sandstone unit above Adit 8 seam. It can be projected up the ridge to the licence boundary and down to Todhunter Ridge and the licence boundary to the north. On Imperial Ridge the contact has been projected on the southwest facing slope. The formation consists of interbedded conglomerate, medium-to-coarse-grained

sandstones with silt and shale interbeds. Thin lenses of needle coal occur in the Elk Formation.

Structure

The Ewin Creek coal licences lie on the east limb of the Fording River syncline. The beds dip between 30 and 50 degrees to the west and strike approximately north-south. Four thrust faults have been projected through the licence area.

Fault 1 (F_1):

A fault zone was intersected by E.V.-150 between 155.6 metres and 180.3 metres and is characterized by zones of angular breccia and healed fractures. By comparing E.V.-150 with E.V.-151 this fault was found to be a thrust dipping to the west approximately 35° and displacing the section some 80 metres. The surface trace has been projected south to the licence boundary and north to the Fernie Formation. Cross-section B-B' illustrates this fault through the drillhole.

Fault 2,3 (F_2, F_3)

These are thrust faults suggested by D. Grieve of the B.C. Ministry of Energy, Mines and Petroleum Resources. They were projected from Mount Banner and help explain the thickening of the Mist Mountain Formation.

They are thought to dip about 45 degrees to the west. F_2 has a projected stratigraphic displacement of 135 metres, F3 has a projected stratigraphic displacement of 50 metres. They are illustrated in sections A-A' and B-B'. The surface trace is shown on the surface geology map.

Fault 4 (F_4)

This fault is also a thrust proposed to explain the thickening of Elk Formation between Todhunter Ridge and Imperial Ridge. It is projected with a west dip and displaces the section some 240 metres stratigraphically. Section C-C' illustrates this fault.

ECONOMIC GEOLOGY

The two drillholes intersected a total of five different major seams. These seams were sampled and a summary of the results for each hole are shown in Tables 2 and 3. The complete lab analyses are shown in Appendix II and IIa. Quality information on the seams from the adits is outlined previous reports listed in the bibliography.

3 Seam

Three seam is the lowest major seam in the section and occurs about 10 metres above the top of the Moose Mountain Member. A comparison of 3 seam in the two drillholes and Imperial Ridge is shown on drawing 135-20-12. The seam has been divided into 3 seam and 3 Lower seam due to a rock split which occurs. In trench G on Imperial Ridge 3 seam is 2.17 metres thick including some thin rock bands. The Imperial Ridge trench locations are shown on the Surface Geology map. The split is 0.89 metres of mudstone and 3L seam is 1.40 metres thick with some thin rock bands. In E.V.-150 3 seam is 3.95 metres thick. The split is 2.42 metres of sandstone and mudstone and 3L seam is 2.49 metres thick in this hole. In E.V.-151 3 seam is 3.56 metres thick with some thin bands of rock. The split is 0.59 metres of mudstone and 3L seam is 3.12 metres including some thin mudstone bands. Three and 3L seams are low volatile bituminous (lvb) coals with a volatile matter (V.M.) on a dry, ash-free (d.a.f.) basis ranging from 19.8-20.8% and a dry, ash-free fixed carbon (F.C. d.a.f.) ranging from 79.4 to 80.2%. The FSI ranges from 6 1/2 to 7 on a clean basis and the reflectance Ro is 1.41 for 3L and 1.45 for 3 seam in E.V.-150. Three seam makes up about 15% of the total estimated reserves for the licences, 45% of this or 33,855,974 tonnes is under less than 750 metres of cover.

4 Seam

Four seam occurs about 37 metres above the top of the Moose Mountain member. Drawing 135-20-13 is a comparison of 4 seam in the two drillholes and Imperial Ridge. In trench F on Imperial Ridge 4 seam is 4.11 metres thick with occasional mudstone bands. In E.V.-150 the seam is 5.64 metres thick. In E.V.-151 it is 4.74 metres thick and appears to have a small rider seam developing in the hanging wall. Four seam is a low volatile bituminous (lvb) coal with a V.M. (d.a.f.) ranging from 20.8 to 21.2% and

an F.C. (d.a.f.) ranging from 78.9-79.2%. The FSI is around 5 and the maximum mean reflectance in oil (Ro) is 1.40. Four seam makes up about 13% of the total estimated reserves and of this about 47% or 29,758,670 tonnes is under less than 750 metres of cover.

5 Seam

Five seam is the thickest seam encountered in the Ewin Creek licences. It occurs about 130 metres above the Moose Mountain Member. Drawing 135-20-14 is a comparison of 5 seam in the two drillholes and Imperial Ridge. Drawing 135-20-11 is a hanging wall structure contour map of 5 seam projected from drillhole and outcrop information. In E.V.-150 the total thickness of 5 seam is 14.63 metres. The upper 2.86 metres has numerous mudstone splits and was sampled separately. In E.V.-151 the total thickness of 5 seam is 15.27 metres with the upper 2.26 metres containing numerous mudstone splits. The thickness decreases to the north and in the two trenches it appears the upper zone of muddy coal encountered in the drillholes has become carbonaceous mudstone. In trench E on Imperial Ridge 5 seam is 10.36 metres thick with a few thin mudstone splits. In trench J on Imperial Ridge the seam is about 8.31 metres thick with some thin mudstone bands. The FSI is 7 and the maximum mean reflectance in oil (Ro) is around 1.32. Five seam is a medium volatile bituminous (m.v.b.) coal with a V.M. (d.a.f.) range between 22.8 and 25.3 and an F.C. (d.a.f.) range of 74.7-77.2%. Five seam makes up about 32% of the total estimated reserves and of this about 48% or 76,564,604 tonnes is under less than 750 metres of cover.

6 Seam

Six seam occurs about 185 metres above the top of the Moose Mountain Member. It was trenched on Imperial Ridge (trench D) and is 4.42 metres thick including a 1.07 metre rock split. The seam appears to pinch out to the south and is less than 1 metre thick when encountered in the two drillholes. The reserves for six seam were calculated for the Imperial block and included the rock split. It makes up about 4% of the total estimated reserves.

7 Seam

Seven seam occurs about 265 metres above the top of the Moose Mountain Member. In trench C on Imperial Ridge it is 4.29 metres thick. In E.V.-151 it is 2.95 metres thick. It makes up about 9% of the total estimated reserves in the licences.

8 Seam

Eight seam is 3.43 metres thick in trench B on Imperial Ridge and 5.30 metres thick in Adit 29. It accounts for about 9% of the total estimated reserves of which 86% or 38,980,000 tonnes is under less than 750 metres of cover.

10 Seam

Ten seam is 5.05 metres thick on Imperial Ridge and 5.12 metres thick in Adit 28. It accounts for about 10% of the total estimated reserves of which about 86% or 86,250,000 tonnes is under less than 750 metres of cover.

Upper Seams

Five seams greater than 1.50 metres thick occur above 10 seam. They each have adits driven in them and range in thickness from 1.77 metres to 3.91 metres. The combined total of estimated reserves for the upper seams accounts for about 4% of the total estimated reserves on the licences.

see Appendix II - for further geocoding.

TABLE 2

COAL QUALITY SUMMARY

D.D.H. E.V. - 150

Unique Sample #	Seam Intercepts (m)	Seam No.	True Thickness	Core Recovery	Raw Coal Ash	Raw Coal FSI	Clean Coal Ash	Clean Coal V.M.	Clean Coal V.M. (daf)	Clean Coal F.C.	Clean Coal FSI	Clean Coal S	Heating Value DDM's	Heating Value cal/g	Maximum Mean Reflectance
1	59.60- 62.90	5	2.86		57.8	1	10.4	22.5	25.1	67.1	7	0.52	778.1	7,836	1.24
2	62.90- 76.49	5	11.77	85.0	17.4	6	8.1	20.4	22.2	71.5	7	0.34	32.7	7,970	1.32
3	251.49-257.71	4	5.64	71.6	24.5	2	7.7	19.2	20.8	73.1	5	0.42	1.6	7,918	1.44
4	277.77-282.16	3	3.95	68.1	32.6	2	8.8	18.1	19.8	73.1	6.5	0.51	23.9	7,982	1.45
5	284.85-287.62	3L	2.49	50.5	14.1	2	7.9	19.2	20.8	72.9	6.5	0.38	60.1	7,995	1.41
6	293.35-293.90		0.49	100	13.0	7.5	8.3	19.7	21.5	72.0	7.5	0.50	245.2	7,953	1.44
7	297.04-297.80	M	0.68	76.0	14.4	3.5	7.6	21.7	23.5	70.7	7	0.53	992.4	8,108	1.34

see Appendix III for further grading

Unique Sample No.

TABLE 3
COAL QUALITY SUMMARY
D.D.H. E.V. - 151

	Seam Intercepts	Seam No.	True Thickness	Core Recovery	Raw Coal Ash	Raw Coal FSI	Clean Coal Ash	Clean Coal V.M. (daf)	Clean Coal V.M. (daf)	Clean Coal F.C. (daf)	Clean Coal FSI	S	DDM's	Heating Values cal/g	Maximum Mean Reflectance Rō
8	7.29- 11.65	8	3.88	42.7	17.7	6.5	6.1	25.3	26.9	68.6	6.5	0.55	9.8	8,056	1.13
9	17.01- 21.16	8L	3.70	41.9	50.8	5.5	8.5	25.9	28.3	65.6	7	0.62	435.9	7,901	1.13
10	29.27- 30.18		0.81	100	23.8	6	7.6	25.1	27.2	67.3	7.5	0.94	563.4	7,987	1.17
11	44.18- 44.88		0.61	65.2	20.4	7	8.7	24.3	26.6	67.0	7.5	0.84		7,861	1.22
12	64.63- 65.24		0.53	85.0	19.9	7.5	6.1	24.7	26.3	69.2	8	1.07		8,107	1.18
13	82.20- 85.43	7	2.95	39.6	21.6	6	9.3	22.2	24.5	68.5	7	0.60	175.4	7,657	1.18
14	97.59- 98.84		1.07	100	15.3	2.5	8.5	20.0	21.9	71.5	3	0.68		7,228	1.22
15	169.82-170.73	6	0.82	80.0	41.3	4	8.5	21.7	23.7	69.8	8.5	0.81	3.0	7,935	1.16
16	216.55-218.96	5	2.26		41.4	1.5	8.2	20.2	22.0	71.6	7	0.54	19.7	7,905	1.30
17	218.96-232.81	5	13.01	81.4	22.9	2.5	8.3	21.5	23.4	70.2	6	0.35	7.3	7,925	1.35
18	326.92-327.56		0.67	100	37.9	1	6.4	19.2	20.5	74.4	6	0.58		8,154	1.43
19	328.26-333.45	4	4.74	79.4	19.1	3	7.4	19.5	21.1	73.1	5.5	0.43	7.7	8,009	1.40
20	353.72-357.62	3	3.56	88.3	32.3	2	9.5	18.6	20.6	71.9	7	0.42	51.8	7,883	1.44
21	358.26-361.68	3L	3.12	88.4	19.4	7	8.4	21.1	23.0	70.5	8.5	0.55	264.5	7,924	1.44
22	363.50-364.39		0.72	100	9.8	6.5	6.9	18.7	20.1	74.4	7	0.45		8,123	1.44

COAL RESERVES

The estimated total coal in place reserves for the Ewin Creek licences is about 500 million tonnes. Of this approximately 60% or 300 million tonnes occurs under less than 750 metres of cover. Table 4 shows the breakdown by seam of the reserve estimate. Three, 4 and 5 seams account for about 60% of the total reserves with about 47% of the reserves for each seam occuring under less than 750 metres of cover.

Method of Reserve Estimate

The licences were divided into three blocks and bounded as shown on the surface geology map. The coal seams in each block were bounded by outcrop, 750m coverline, licence boundary or fault boundaries.

The surface area of each seam was measured using the 1:5000 scale map and a planimeter. The vertical thickness was taken from surface measurements or borehole thickness. The area times the vertical thickness gives a volume. The volume is multiplied by Specific Gravity to get tonnes.

S.G. is calculated by the following:

S.G. = 1.250 + 0.011 (% raw ash of seam) (Samuelson, 1981)

This formula was derived by Samuelson as additional work to studies done by Taylor on Ash related to Volume coal conversion. The raw data for Samuelson's derivation was taken from Greenhills samples.

The raw ash data was taken from borehole, adit and trench data.

For the Imperial Block the vertical thicknesses and raw ash was taken from trench data. The seams are bounded by outcrop, the licence boundary and the 750 metre coverline.

For the Valley block the thicknesses were averaged between the drillholes and trenches, the raw ash data was taken from the drillholes for seams they intersected and adits or trenches for the other seams

For the Banner Block the vertical thicknesses and ash data were taken from the drillholes for seams they intersected. The other seam data was taken from adit or trench data.

Classification of Reserves

Proven - Proven reserves are tonnes of coal in place computed from observations (i.e. drill holes, adits outcrops, mine workings, etc.) spaced at intervals of 0.8 km or less in areas of good geological continuity. Seams should be greater than 1.5m thick and under less than 750 metres of cover.

Partially Explored - Partially explored reserves are tonnes of coal in place computed partially from observations spaced at intervals of 0.8 km to 2.4 km apart and partially from reasonable geological projections. Seams should be greater than 1.5 m thick and under less than 750 m of cover.

Projected - Projected reserves are tonnes of coal in place where little direct evidence is available but where geological studies have indicated continuity of the coal bearing measures. Coal seams and seam thicknesses are projected from adjacent areas.

The majority of the reserves in the Ewin Creek licences are considered to be projected. The Banner Block, where the majority of exploration work has occured can be considered as partially explored reserves.

TABLE 4

EWIN CREEK COAL LICENCES PROJECTED RESERVE ESTIMATE

TONNES OF COAL

	Seam No.	Vert. th (m)	S.G. gm/cc	Reserves to 750 m cover	Total Coal In Place
Imperial Block	1	3.84	1.39	5,622,214	14,173,536
	2	2.73	1.41	4,142,421	10,105,604
	3	4.65	1.51	7,569,482	18,129,341
	4	5.73	1.43	9,065,327	20,930,808
	5	13.52	1.50	24,268,576	50,064,209
	6	5.77	1.46	10,648,014	20,169,856
	7	5.60	1.73	12,284,384	21,762,881
	8	4.48	1.63	9,307,787	15,754,244
	10	6.59	1.33	11,091,051	17,707,803
				93,999,256 Total	188,798,780 Total
Valley Block	3	6.59	1.44	11,769,477	15,826,281
	4	5.71	1.49	9,418,247	12,459,747
	5	15.56	1.53	17,783,680	24,901,913
	7	4.42	1.49	5,202,782	5,202,782
	8	5.64	1.44	6,012,014	6,012,014
	10	6.59	1.33	5,896,398	5,896,398
				50,772,598 Total	70,299,135 Total
Banner Block	3	7.56	1.44	14,517,015	39,193,762
	4	5.71	1.49	11,275,096	30,154,126
	5	16.58	1.53	34,512,348	84,892,004
	7	4.42	1.49	19,770,571	19,770,571
	8	5.64	1.44	23,660,251	23,660,251
	10	6.59	1.33	24,510,485	24,510,485
				118,093,189 Total	222,181,200 Total
Upper Seams	Adit #1	3.56	1.38	7,281,998	7,281,998
	Adit #2	1.77	1.45	3,430,770	3,430,770
	Adit #5	2.20	1.41	2,415,683	2,415,683
	Adit #7	3.91	1.41	3,725,477	3,725,477
	Adit #8	2.85	1.48	2,636,251	2,636,251
				19,490,179	19,490,179

Total Reserve Estimate to 750 m cover:
297,817,800 tonnes

Total Coal In Place Estimate:
500,769,290 tonnes

Conclusions and Recommendations

The two drillholes in the licences indicate there is good quality metallurgical coal of significant volume in the lower part of the Mist Mountain Formation. Seams 3, 4 and 5 seams make up the bulk of the estimated reserves in the area. Five seam is the thickest of the seams in the licences and preliminary quality analysis indicates it to be good metallurgical coal, very much like the 10 seam coal presently being mined at Balmer Operations.

The structural geology of the area is very complex. The present interpretation is based largely upon projection. Further exploration by way of drillholes is required to help understand the structure of the area. An adit in number 5 seam in the Banner Block is recommended to obtain a reliable bulk sample and analysis of this seam. Adits in 3 and 4 seam in the same area would also prove useful in obtaining reliable quality data.

EWIN CREEK C.L. 260-263, 2221

STATEMENT OF COSTS

ON PROPERTY COSTS	
Salaries (geologists, supervision, core logging,surveying).	$ 14,830.40
2 D8H Dozers @ $95.76 per hr. (c/w angle blade and ripper) All Found Rate	13,693.68
D.W. Coates Enterprises Ltd. (Contract Drilling)	80,185.68
Roke Oil Ltd. (Contract downhole logging)	4,684.77
Applied Reclamation Costs	3,601.26
Sampling and Testing	8,102.99
Freight (dozer transport)	677.46
Truck Rental (1 for 30 days)	655.00
Radio Communications	53.19
Materials and Supplies	38.63
OFF PROPERTY COSTS	
Report Preparation (geological interpretation, drafting, report writing)	6,732.84
TOTAL COSTS	$ 133,265.90

R. REGIER
MANAGER, MINES ACCOUNTING

STATEMENT OF QUALIFICATIONS

J.A. Huryn:

B.SC. Geology, University of Calgary
Calgary, Alberta 1979

Practical: 3 summers coal mapping experience as a student and 3 years in coal mapping, structural interpretations, reserve estimation and licence evaluation with Kaiser Resources Ltd. and B.C. Coal Ltd.

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Samuelson, L.B., — 1973 Ewin Creek Licences Progress Report, March 1973. Kaiser Resources Ltd. Exploration Geology Report.

Samuelson, L.B., — Ash related Volume to Weight Coal Conversion. Additional work to a report of the same title by G. Lynn Taylor, 1982.

Taylor, G.L., 1980 — Ash Related Volume to Weight Coal Conversion.

APPENDIX I

BC Coal Log

AREA: Ewin Creek HOLE No: EV-150 LOGGED BY: J.A. Huryn DATE: Oct 27/81 PAGE: 1 OF: 19

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D. m	O.B. m	CASING m	WATER LEVEL m	ANG.	AZIM
DDH	EV150	EWNCR	4	055467	369970	065947	1625.00	CEL	348.78	2.74	27.4	19.4	90 000

DATE START	FIN. Day, Mo. Year	SIZE	TO	SIZE	TO m.	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
24/10/81	01/11/81			HO	3.3 48.78			FED	ROR	Y	ROKTAH	

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED (TENTHS)	RECOVERY % (TENTHS)	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR	MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT (TENTHS)	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																											108	57	M		1/10	
																											198	67	M	10		10%
	271 metres																										314	56	M		5.1/6	
OVB	90 feet.																													16		85
																															4.7/5	
																														21		94
	591																														3.2/5	
	194		6		SASM					M22				D			0030.4			SLSM			960					62		26		64
																															2.7/3	
		The unit is highly broken up based on surface																												29		90
		weathered staining occurs throughout the unit.																														
		18.8 - 19.4 - the black pyrite blebs																												36	6.4/7	91.
																														41	4.9/5.0	98
	2.74																															
	314				MDSM						70			NL			0020						9					62		46.	4.4/5.0	88
		P.1 - 21.8 - highly broken up core.																														
		Numerous thin vertical joints throughout the unit.																									3666	62	M	51	4.9/5.0	92
		Lower contact is gradational with the coal partings disappearing																									4689	69	M			
																														62	10/11	91.
	1259																															
	413		8		SLSM									LN			0030.2			MDSM			545					66				
		36.5 - 37.5 - fe, fli. v. stringers.																														
		40.4 - 40.8 - soft, muddy.																														
		Gradational lower contact																														
	1381																															
	453				CBMD									U			0010						SS					66				
					42.2 - 44.1 - Fe stains in fractures																												

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal Colog

AREA: Elk Crk. HOLE No: EV-150 LOGGED BY: JAH DATE: PAGE: 2 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																												476	72L					
																												520	78M			72	10/10	100
	1457																											625	63M					
4	478		960				CBAL											0010											68			82	10/10	100
					45.3		- 45.9	- D-C hard, blocky																										
					45.9		- 46.0	- soft																								92	10/10	100
					46.0		- 46.1	- D-C hard, blocky																										
8					46.1		- 46.3	- C soft, dirty																								96	3.6/4.0	90
							- 46.6	- D dull, hard																										
							- 46.7	- CBMD																								106	10/10	100
							- 47.3	- Cd-V hard - banded																										
12							- 47.5	- CBMD																										
							- 47.6	- Cd-V Hard																										
							- 47.85	- Mdsn																										
							- 47.8	- Cd-V hard, banded																										
16																																		
	1548																																	
20	508						CBMD									N		0020						9					68					
							Broken up unit																					716	59M					
					48.2		- 48.5	- Coaly, broken up																										
					48.8		- 48.9	- coal, banded, Coarse V.																										
24					49.4		- 50.6	- Soft, quite gassy																										
					50.6		- 50.8	- C-soft, dirty																										
	1990																																	
28	620						SLSM					65			LZ			0040						156					68					
					Most of the fractures occur along bedding and were likely induced by drilling.																													
					51.8-52.0 - trace Sasm band.																													
					Occasional thin Sasm lenses occur throughout.																													
32					The lower contact is gradational.																													

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KDI - EV01 - 0

BC Coal LOG

AREA: Elk Col HOLE No: EV-150 LOGGED BY: JAL DATE: PAGE: 3 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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	32 33	34 35	36 37	38 39	40 41 42 43	44 45	46	47 48	49	50 51	52	53 54 55	56 57	58 59	60	61 62 63	64 65 66	67 68 69
																													8 1	6	6 8	M		10/10	
																													9 4	6	6 2	M	116		100
	21 8 3																												1 0 3	4	5 1	H		9.8/10	
4	7 1 6						S A S N	S L I				L 5 3					L Z		0 0 5 0						3 2 0						5 9		126		98
					62.9' - 63.9		44 - Sooty band along fracture																						1 0 9	2	5 0	M		8.5/10	
					63.9 - 64.1		- Slickensided surfaces of coal along bedding plane																						1 1 9	0	5 2	M	136		85
																													1 2 7	8	6 0	L		9.5/9.0	
8																																	145		106
																																		8.8/9.0	
																																	154		97.8
	27 4 4																																	10/10	
12	1 2 2 8				8		S L S N					L					L Z D		0 0 1 0 2			S A S N			4 5 5						5 7		164		100
					79.8 - 80.6		- V stringers along fractures																											9.7/10	
					89.6 - 90.4		Ca filled fractures																										174		97
					96.6 -		Slickensided along fracture																											10/10	
16					99.7 - 100		- reworked sandstone beds																										184		100
																													1 3 6	2	6 2	M			
																													1 4 5	9	5 6	H			
	50 2 2																												1 5 6	6	5 6	H			
20	1 6 6 7						S A S N					L 5 3					Z L		0 0 6 0						1 2 7						5 8				
					123.1 -		Ca filled fractures																						1 6 7	2	6 0	M			
					123.8 - 124.2		- Mud chips - long thin in bedding																						1 8 2	0	5 7	M			
					152.5 - 157.2		Medium grained sandstone fining upwards																												
24					occasional		Ca filled fractures throughout																												
					157.2 - 165.7		Coarse grained sandstone																												
					lower contact is sharp																														
					154.4 - 158.2		High bed deformation																												
28					161.6 -		Rind chips 1½" x 1½"																												
32																																			

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL - EXPL - 9

BC Coal LOG

AREA: Ewin Crk HOLE No: EV-150 LOGGED BY: JAH DATE: 81/10/22 PAGE: 4 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																													19	2	160	M		7.0/7.0	
																													19	8	360	M	191		100
	58	53																																	
4	19	10			8		SLSN					L51					LZD	0040			21SHSN			340							60		196	4.7/5.0	94
								Sandstone occurs in X-bedded beds throughout.																											
								169.5 - Carbonaceous features																									201	4.5/5.0	90
								186 - Band of disseminated pyrite																											
8								Lower contact is probably																									208	6.0/7.0	86
																																	214	4.5/6.0	75
	59	60																																	
12	19	55					MDSN										N	0020													60		222	6.3/8.0	78.8
								196.9 - 197.6 - Coal - C-B band broken																											
								200.3 - 201.0 - Coal, flat bedding																									227	5.9/5.0	118
								- Sandstone lens																											
	62	20																																6.5/9.0	
16	20	63			5		COAL										N	0020			MDSN			9							60		236		72.2
	0							Grade with the major ignition at the rear																										5.9/6.0	
								This interval was not cored in the sample itself																									242		98.3
	76	49						Sample [illegible] H.L. tool Gamma log																											
20	25	09		850			COAL																								60				
								195.7 - 196.0 - lost 3 for overall recovery																											
								200.5 - 201.0 - lost 3																											
							202.3	- 203.7 - D-dull band, Occasional V band																											
24								- 204.3 - 1 Fdn																											
								- 204.8 - C-bright D, soft broken													Note - 85% recovery															
								- 205.6 - Coal dull band																											
							H.L.	- 206.3 1 Fdn													total zone														
28								- 207.0 - D-V band broken																	195.3 - 250.9										
								- 208.0 - Core loss																											
								- 211.2 - C-V band																											
								- 212.2 - C soft band																											
32								- 212.5 - D-C band																											
								- 214.0 Core loss																											
								- 215.4 - D-C band broken																											

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOG

AREA: Elkview Crk HOLE No: EV-150 LOGGED BY: JAH DATE: PAGE: 5 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
	/ /	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II ROCK % OF INTERVAL	ROCK II TYPE MODIFIER	ROCK II ROCK NAME	ROCK II QUALIFYING MATERIAL NAME	ROCK II QUALIFYING MATERIAL AMOUNT	STRUCTURE FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32	33 34 35	36 37	38 39	40 41 42	43 44 45	46	47 48	49 50	51	52	53 54 55	56 57	58 59	60	61 62 63	64 65	66 67 68	69
								215	4 - 218.4		- Rdsn																								
									- 220.3		- Cd-V, brd, bnded																					248	5.2/6.0	86.7
									- 222.2		- Core loss																								
4									- 227.0		- Cd-V bnded and hard																					256	7.4/8.0	92.5
									→ There was a seam in the roof. This run has 11.8% recovery, it may be																							266.	9.8/10.0	98
									up to the low recovery in the previous run																										
8								227.5	- 230.9		- Cd-V, bnded hard																					276	10/10	100
									- 231.0		- C-dull, disp coal																								
									- 233.5		- Cd-V, hard, bnded																					286	9.8/10	98
									- 233.8		- D-C, hard																								
12									- 236.0		- core loss																					295	9.0/9.0	100
									- 241.9		- Cd-V hard bnded																								
									- 242.0		- Core loss																								
									- 242.4		- C-G Hard, fell																								
16									- 245.2		- Cd-V, hard bnded																								
									- 245.3		- Rdsn																								
									- 247.2		- Cd-V, hard broken																								
									- 248.0		- Core loss																								
20									- 248.2		- Core loss																								
									- 250.2		- Cd-V, hard bnded																								
									- 250.3		- Rdsn																								
									- 250.9		- Cd-V, hard bnded																								
24																																			
																												2 5 8 4	6 3	L					
																												2 6 6 6	6 1	M					
	7 1 6 3																																		
28	2 6 1 2						1 0 5	N C	0 1								N	0 0 2 0						4 6 4 0	5					6 2				
									251.2 - 251.5		- Coal, bnded, Cd-V.																								
									Gradational lower con't.																										
32																																			

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOG

AREA: Elk Crk. HOLE No: EV-150 LOGGED BY: JAH DATE: 81/10/30 PAGE: 6 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/											

	PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																														282669		M		10/10	
																														286871		M	305	10/10	100
		5232																												296260		L		10/11	
4		2932				7		SLSM					L5					LZD	00503			SASM			320						67		316		91
									Sandstone occurs in localized zones																									9.9/10	
									283.9 - Ca in fractures																								326		99.
		5224																																9.7/10	
8		2950				6		MDSM											10010	4		COBL			9						67		336		97.
									Hard drill det. coal bands																				30806		L		10/10	
									this could be broken up.																				31466		M	346		100
		10442																												31826		M		9.8/10.	
12		3425				7		SLSM					L5					LZD	00503			SASM			360						66		356		98
									299.3 - 305 - bad sed. deformation																				33046		M		9.7/10	
									305.0 - 309.0 - COAL dk grey																				33727		L	366		97
									312.9 - 313.7 - Ca in fractures, fine sed.																				34756		M		10/10	
16									321.4 - 327.8 - Hi. sed. deformation																								376		100
									329.3 - 330.0 - Hi sed. deformation																				35357		L		9.6/10	
									333.1 - V-band 1/2" thick																							386		96
									337.0 - 337.8 - thin V bands																										
20									Very good. Lower contact.																										
		1210																																	
24		4005						SASM					L54					LZD	00500						135										
									F - Mge sed occurs as lamination zones																				36775		H			
									351.5 - 356.9 - Some Ca in open fractures																				37287		M			
									358.3 - Ca in fracture planes																				38045		L			
28									368.3 - 368.9 - Mud clips in seam																					62					
									371.4 - 1" band, 3-bit																				38406		M			
									371.9 - 2" Mud clips 1" y 1"																										
									372.4 - 372.5 - Small mud clip																										
32									374.9 - 375.0 - Small mud clip																										
									376.0 - 378.9 - CBSM																										
									378.6 - 378.9 - V Band																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOG

AREA: Fwin Crk. HOLE No: EV-150 LOGGED BY: JAH DATE: 81/10/30 PAGE: 7 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	STRUCTURE: FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																													40706	7				10/10	
																													38887	2	M		396		100.
																													42246	2	L			6.2/7.0	
4																																	403		88.6
																																		8.0/8.0	
																																	411		100
																																		9.3/9.0	
8																																	420		103
																																		10.2/10½	
																																	430½		97.1
	13680																																	4.3/5½	
12	4487				6	SLSN											LZD	00404			SASN			464						65		436		81.8
																													42796	5	L		440	4.0/4.0	100.
																													43706	8	M				
																																	450	9.3/10.0	93
16																																			
																																	456	6.4/6.0	107
																																	466	9.6/10.0	96
20																																			
																																	476	9.7/10	97
	13902																																	2.2/5.0	
24	4560					SASN						LSLI					ZLI	00500												61		481		44
																								78624					45127	1	L				
																													46695	0	L				
28																																			
	14235																																		
32	4669				6	SLSN											LZD	00404			SASN			58536						61				

ANL | DEPTH | REC % | SEAM | RAW ASH | RAW FSI | CLEAN FLOAT | CLEAN MOIST | ASH | V.M. | V.M.(DAF) | F.C. | FSI | SULF | D.D.M. | YIELD | B.T.U. | VERTICAL THICKNESS

KRL - EXPL. - 9

BC Coal LOG

AREA: Elk Crk HOLE No: EV-150 LOGGED BY: JAH DATE: 81/11/02 PAGE: 8 OF: 19

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR	TEXTURE MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																														4755	4	7	M		5.0	
																														4775	5	2	M	486	5.0	100
	14756																													4878	7	9	L		9.3	
4	4840						SASN					1.54					LZD	0050								4152					59			496	10.	93
								I. to bed of fine well rolling sandstone																										506	9.9/10	99
								477.2-477.7 - Thin Ca in bedding fracture																												
								- Core loss at end of 476-481 run																										516	9.7/10	97
8								481.5																												
								482.0																										522.	5.4/6.0	67.5
								483.0																												
								483.5-484																												
12								483.5 - Small mud chips in seam																												
								Abrupt lower contact																						4958	6	5	L			
																														5072	4	8	L			
																														5142	6	1	M			
	15556																																			
16	5109				8		SLSN					1.51					NLDZ	0040R				SASN			963						58					
								485.5-486.0 - Slickensides on bedding surface																												
								486.6-486.8 - Thin V-Ca.																												
								489.1-489.7 - Thin V-bands																												
20								491.0 - Thin Ca veinlet																												
								494.4-494.9 - V-bands - Carbonaceous seam																												
								496.9 - v. thin Ca veining																												
								497.2 - thin V-band																												
24								496.7 - numerous v. thin Ca bands																												
								496.9-497.3 - High sedi. deformation																												
	15564																																			
28	5105						BRFH																								58					
								Numerous Ca veinlets																												
								Bedding has been broken thin rehealed																												
	15710							Total seam																												
32	5153						SASN					1.53					LZI	0050													58					
								Numerous thin Ca band throughout the unit																												

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOG

AREA: EWIN CRK HOLE No: EV-150 LOGGED BY: JAH DATE: 81/4/02 PAGE: 2 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II ROCK % OF INTERVAL	ROCK II TYPE MODIFIER	ROCK II ROCK NAME	ROCK II QUALIFYING MATERIAL NAME	ROCK II QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																												52299	50	M		10.3/10	
																												53655	55	M	532		103
	16393																											54306	62	M		9.9/10	
4	55411				7		SLSN							A5			BN	0030	3		MDSN			950					57		542		99
								516.2- Slickensides																								552 10/10		100
								517.2-520.5- Broken core																										
								520.8-522.2- Ground up core																								562 10/10		100
8								522.0-524.0- Soft partings, slickensides																										
								540.3-542.0- Sandy interbed																				55314	8	L	572 10/10		100
								548.2-548.6- Marqou, V-broke looking																				55455	3	L			
								Grad. lower contact.																				56536	0	M	583	10.1/11	91.8
12																																			
																												57077	0	L	586	3.0/3.0	100
	17866																															1.8/2.0		
16	5860				8		SASN							13			4DZ	0050	2		SLSN			55230					57		588		90
								Highly recovered & sed deformation in sandy zones.																										
								564.0																										
								564.6 } - Thin Ca veins in fractures																										
20								565.0																										
								569.0																										
								568.4-576.5- Numerous thin Ca veins in broken fractures																										
								575.0-578.3- Mod. broken core																										
24								578.3-580.0- Highly broken core																										
								582.2-583.0- Highly broken core																										
								583.0-586.0- Mod broken core																										
28																																		
	15934																																	
32	5915						BRFA																						57					
								High degree of slickensiding																										
								Core is slabbed.																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOLOG

AREA: Elk Col. HOLE No: EV-150 LOGGED BY: JAH DATE: 81/11/02 PAGE: 10 OF: 19

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32	33 34 35 36 37	38	39	40 41 42	43 44 45	46	47	48	49	50 51	52 53 54 55 56	57	58 59	60	61 62 63	64 65 66	67 68 69
								588.3 - 591.5 - Relatively fine grained, very distorted																										
								- Lots of Co - throughout																									595	6.3/7.0	90
4																																	605	10.1/10	101
																												600	757	M			610	4.9/5.0	98
	18418																																	10/10	
8	6041				6		SASN							3			DZLN	1	2		SLSN			675						57		620		100
								This unit has very lit. perc. degradation.																										
								The sandstone is a blocky of fine grained sandy																										
								602.6 - 604.1 pl. bedded pinnacle, coarse sandy																										
12								Lower contact is gradational																										
	18665																																	
16	6122						SLSN						7-1				UN	0040						8B017						57				
								607.4 - 608.0 - V-bands in fractures.																										
								608.8 - 612.3 - bedded sandy																										
								611.9 - 612.3 - V bands in fractures																										
20								Moderately abrupt contact																										
	18915																																	
24	6204						SASN										DZN	1						966						57				
								Numerous thin Vitrain bands occur throughout the unit.																										
								614.7 - 615.1 - Co veins in cross fractures.																										
								618.6 - 618.9 - Ground up core																										
28								619.2 - 620.4 - Highly fractured. Bedding has been destroyed. Solution																										
								cavities occur. Co was dissolved out. Possibly a broad fault																										
								zone. Lower contact abrupt																										
32																																		

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRI - EXPI - 9

BC Coal LOG

AREA: Eve Cr. HOLE No: EV-150 LOGGED BY: JMH DATE: 84/11/03 PAGE: 11 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32	33 34 35 36	37 38	39	40 41 42	43 44	45 46	47 48	49	50	51 52	53 54	55 56	57 58	59 60	61 62 63	64 65 66	67 68 69
																												63406		7	H		10.9/	
																												63665		8	M	631	11	99.1
	12203																											64726		9	M		5.0	
4	6300				9		SLSN										D	00401			SASN			378						68		636	/5.0	100
								The sandstone interbeds are deformed (ductilely)																								646	9.4/10	94.
								629.2 - Thin U-band,																										
								- Abrupt lower contact.																								656	9.6/10	96
8																																		
																																666	8.4/10	84
	12876																																	
12	6520						SLSN										LZN	0050						76020						68		676	9.7/10.	97
								Fine upwards																										
								637.0 - 637.5 - Ca filled fractures																										
								630.0 - 637.4 - medium sand																										
16								637.4 - ordinary - coarse sandy																										
								639.7 - 641.9 - Numerous Ca-filled fractures. Solution cavities throughout																										
								641.9 - 646 - Very numerous U-bands																										
								646 - 652 - Uniformly bedded fine grained sandstone																										
20								Abrupt lower contact																										
																												65207		8	M			
	20216																																	
24	6631				8		MDSN										N	00202			SASN			4						68				
								Sandstone occurs as channel units.																										
								658.6 - 660.0 - Deformed Sst. bands																										
								660.3 - 660.9 - Coal - Gd-U, Hard brittle																										
28								661.9 - 662.3 - Coal - C, soft, pronounced up																										
	20323																																	
32	6666.						COAL																							61				
								High core loss.																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL - EXPL - 9

BC Coal LOGS

AREA: Eve Cd. HOLE No: EV-150 LOGGED BY: JAH DATE: 81/11/03 PAGE: 12 OF: 19

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/ /		/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR	TEXTURE MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	STRUCTURE: FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
								Mostly	bands						C-U	bands														6 6 7 1	6 1	M		9.2/10	
																														6 7 6 7	6 5	M	686		92
	2 0 4 6 0																													6 8 7 6	7 4	L		5.2/6.0	
4	6 7 1 1						M D S M					1					N		0 0 2 0							5						6 3		692		86.7
								Thin U band																										701	8.7/9.0	96.7
								Lower contact																												
8																																		706	4.5/5.0	90
																																		716	9.9/10	99
	2 1 1 1 9																																			
12	6 9 2 7				R		S A S N					1 5 3					D L Z N			2		S L S M			4 8 9 1 7						7 0		726	10/10	100
								671.1 - 674.0 - Highly sed deformation.																									736	9.5/10	95
								679.1 - 683.1 - Thin interval OK.																												
								686.6 - 687.2 - Coal filled fractures																												
16																																				
	2 1 8 8 3																																			
20	7 1 1 2						M D S M	5 2 1									L N D		0 0 2 0						5 7 6						7 0				
								Sandy zones occur as thin fine grained seam interval																						7 0 4 1 7 6 L					
								708.7 - Thin Coal veins in sheared fractures																						7 0 8 7 7 4 M					
								Gradational lower contact																						7 1 2 7 6 4 L					
24																																				
																														7 1 8 8 6 4 M					
																														7 3 4 7 7 0 M					
	2 2 0 5 2																																			
28	7 2 3 3						S A S N								3		Z D		0 0 5 0						7 2 0 8 2						7 0				
								Gradational lower contact																												
32																																				

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRI - EXPL - 6

BC Coal LOG

AREA: Elk Crk HOLE No: EV-150 LOGGED BY: JAH DATE: 81/11/04 PAGE: 13 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo. Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																												749	5	64	M				
																												769	5	6	L	746	9.9/10	99
	239.12																											774	4	66	M		10/10	
4	7843						MDSN					M				N		0020						46857						65		756		100
								726 - 726.7 Coal band																											
								- clean coal as in open fractures																								766	9.6/10	96
								731.4 - 731.6 - Ground up																											
8								732.2 - 7 in Coal seam in broken fracture																								776	9.9/10	99
								743.7 - 744.2 - Numerous thin seams in bedding fracture																											
								744.7 - Coal filled fracture																								786	10/10	100
								749.0 - 754.0 - Thin coal interbed																											
12								763.6 - Coal in open fracture																								796	10/10	100
								769.1 - 770.0 - Thin seam known																											
								775.8 - Slickensides on fracture surface of coal																								806	10/10	100
								782.0 - 782.5 - Thin V-shaped seam along bedding																											
16								Good lateral lower contact																								816	9.9/10	99
																																826	8.9/10	89
	247.80																													65		833	5.0/7.0	71.4
20	8128				9		SDSN					153				LZ			1.1	SLSN				53065											
								792.0 - 792.4 Thin Coal varying in bedding fractures. Numerous																				786	6	60	M				
								Both bedding and joint fractures																				798	3	67	L	837	3.0/4.0	75
								795.0 - Coal veins in fracture cutting bedding plane																				808	2	60	L			
24								796.4 - 797.7 - Muddy zone																											
								Numerous thin Coal veins occur in bedding fracture																				812	1	72	L				
								throughout the unit																				819	0	65	H				
								Good Lower contact																											
28																																			
	251.42																																		
32	8249						MDSN									U		0020						666						65					

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRI - EXPI - 9

BC Coal LOG

AREA: Euler Creek HOLE No: EV-150 LOGGED BY: IAH DATE: Nov 5/81 PAGE: 14 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	STRUCTURE: FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																																	2.0/2.0	
	257	71																													839		100
4 4.5	845	3	7	6			COAL																							65	841	0.8/2.0	40
								824.9 - 826.0																							846	3.8/5.0	76
								826.0 - 827.1																									
								- 830.0																							851	5.0/5.0	100.
8								- 831.0																									
								- 833.0																							861	9.7/10	97
								- 833.2																									
								- 834.3																							866	4.6/5.0	92
12								- 834.7																									
								- 836.0																									
								- 837.0																									
								- 837.6																									
16								- 838.0																									
								- 838.5																									
								- 839.0																									
								- 839.6																									
20								- 839.8																									
								- 841.0																									
								- 841.7																									
								- 843.7																									
24								- 844.0																									
								- 844.2																									
								- 844.8																									
								- 845.3																									
28								- 846.0																									
32																																	

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KBI - EYDI - 0

BC Coal GEOLOG

AREA: Elko Creek HOLE No: EV-150 LOGGED BY: JAH DATE: 8/14/06 PAGE: 25 OF: 19

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32 33	34 35 36	37	38	39	40 41 42	43	44 45	46	47	48	49	50 51 52	53 54	55 56	57	58 59	60	61 62 63	64 65 66	67 68 69
																															8 5 2	0 6 5			L		9.8/10	
																															8 5 9	4 6 2			M	876		98
	2 6 4 2 1																														8 6 9	7 6 3			M		9.6/10	
4	8 6 6 6						M	D S	N								N	0 0 2 0									6 3 4						6 4		886		96
									847.7 - 867.7 - Coal, Ed-V, hard, [illegible]																						8 8 0	6 6 4			L		10/10	
									867.7 - 868.6 - Sandy intrbd.																						8 8 8	6 6 7			L	896		100
									853.1 - Coal, hard, fractured																						9 0 1	5 6 3			M		9.4/10	
8									853.9 - 854.4 - Numerous thrbd fractures (Coarse)																											906		94
									858 - 861 - Sandy intrbdd.																													
									861 - 866 - Negligible coaly V-bands																											916	9.2/10	92
									Lower contact is abrupt.																													
12																																				921.5	3.0/5.5	54.5
	2 6 9 3 3																																					
16	8 8 3 4				6		S	A S	N					53		Z	D L	0 0 4 0 4			S	L	S	N			4 5 0						6 4				
									871.6 - 871.6 - Some thin V-bands																													
									Grad. lower contact.																													
20																																						
	2 7 7 7 7																																					
24	9 1 1 1						M	D S	N								U N	0 0 2 0									3 6 0						6 4				
									886.3 - 890.2 - Numerous zones of clay and clay chips - these zones also contain pyrite.																						9 0 7	5 6 3			M			
									896.6 - 898.5 - Sandy intrbdds																													
28									908.6 - 909.1 - Sandy zone																													
									909.8 - 910.3 - Very high coal deformation in Sandy intrbdd																													
									Sharp lower contact																													
32																																						

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL - EXPL. - 9

BC Coal GEOLOG

AREA: Fair Crk HOLE No: EV-150 LOGGED BY: JAU DATE: 81/11/06 PAGE: 16 OF: 19

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																																	933	10.2/11.5	88.7
3.5	28216 92.55		681				COAL																							64		936	2.7/3.0	90
								Core + DENS HW intercept corresponds well																								941	3.5/5.0	70
								913.1 - 913.3 - Cd-U, hard, brittle																								951	8.0/10	80
								- 914.55 - C-D, hard, med. dull																										
								- 914.60 - Mdn																										
								- 915.2 - C-D, Hard, med. dull																										
								- 916 - Core loss																										
								- 917.0 CBMD - coaly																										
								- 919 - D, minor C, very hard, dull																										
								- 921.5 - Core loss																										
								- 922.8 - Core loss																										
								- 923.4 - D-U, dull, brittle																										
								- 923.55 - Mdn																										
								- 925.3 - D-C, dirty																										
								- 925.5 - D-U, brittle																										
	28445 9330						SASN						53				DZ	COSO						3						64				
								925.5 - 929.0 - Siltyd Carbonaceous																										
	28445 9343						MDSN					L					ZN	DO 30												64				
								934.0 - 934.3 - Carbonaceous zone																										
3.5	28762 9434		505				COAL																							64				
								Core + DENS HW was pretty close																										
								934.3 - 934.7 - D, dull, hard																										
								- 935.7 - C, hard, flaky																										
								- 936 - core loss																										
								- 936.6 - D-C, Hard																										
								- 937.3 - D, dull, hard																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL-EXPL.-9

BC Coal GEOLOG

AREA: Elkin Crk. HOLE No: EV-150 LOGGED BY: JAH DATE: 81/11/10 PAGE: 17 OF: 19

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32	33 34 35 36	37 38	39	40 41 42	43 44	45	46 47	48	49	50	51 52	53 54 55	56 57	58 59	60 61	62 63	64 65 66	67 68	69
								9273	-	937.7 - D-C							bio.																	9.4		
									-	939.5 C-D																						962	11.0	85.5
									-	941.0 - Core loss.																								
4										941.0 - 943.4 - Core loss.																								
										The 941 - 951 was left all out. DERS shows FL should be 943.4' Core																								
										quality has been extra carefully reviewed and 951 remains the recovery for																								
										that run. Insufficient data to accurate the core loss.																								
8																																		
12	28224 95 10				8		MDSN										LN	00302			SASN			6							63			
								Sandstone occurs as laminae, cause not determined																					94560		11			
								946.1 }																					94676		11			
								946.8 } Slickensided surface along fractures																					96136		12			
16																																		
																													97105		11			
	29073 95 36		462				COAL																								63			
20								951.0 - 952.2 - CD-P, hard, badly broken																										
									-	952.6 - Core loss.																								
24																																		
	29335 96 22				6		MDSN										4	00304			SASN			4							63			
								Mostly mineralized sands.																										
								955.1 - 956.1 - Sandstone - fair																										
	29390 96 40		1000				COAL																								63			
32								962.2 - 962.9 - D-P, hard, [illegible]																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KBI - EXPI - 9

BC Coal Logging

AREA: Elan Creek HOLE No: EV-150 LOGGED BY: JAH DATE: 81/11/16 PAGE: 18 OF: 19

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																													974	0	6 4	M	973	9.8/11.0	89.1
																													983	7	4 6 8	M	984	10.2/11.0	92.7
																													994	5	6 6	L	994	10/10	100
																																	997	2.6/3.0	86.7
																															6 4		1006.	8.6/9.0	95.6
																																	1016	10/10	100
																																	1026	9.9/10	99
																																	1036	9.7/10	97
																															6 0				
																													1018	3 5 5	M				
																													1026	8 6 3	M				
																													1039	5 5	M				

ROCK I CHARACTERISTICS — ROCK II — STRUCTURE — CORE RECOVERY

9629 - 964.0 - Coal, minor U, black, soft

L 0020

Laminated with tuff. soon

MDSM

Thickness from PPM

Core HW & Core HW matched well

974.3 - 974.7 - Dull broken, dull

- 975.9 - Coal, minor U, black

- 976. - Coal, minor D, soft, tuffy

- 976.8 - Coal

Very sharp lower contact w/ Sst

SASM 85 U 0060 2

976.8 - 986.1 - Uniform coarse sandstone, very little trace of bedding planes

After 986.1 - Sst. broken thinly bedded

995.0 - Unc. - Sltst. Carb. broken

1004.1 - 1004.5 - Sltst. Carb. broken

1008.5 - 1009.5 - Sltst. broken

1011.8 - 1012 - Sltst. broken

1012 - 1013.7 - X-beds - angle bedding crudely

From 1016 - Plants are occasional

1019 - 1019.2 - Pebbles in the coal

1033.4 - Brown very coarse grained

1036 - 1037.5 - Sltst. broken core, some U veins - Fault zone

1036.0 - Skip-side of the fault plane

1039.0 - 1039.7 - Sltst. broken

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL-EXPL-9

BC Coal GEOLOG

AREA: Elkin Creek HOLE No: EV-150 LOGGED BY: JAH DATE: 81/11/16 PAGE: 12 OF: 12

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY

APPENDIX I A

BC Coal GEOLOG

AREA: Elk Creek HOLE No: EV-151 LOGGED BY: J.A. Huezo DATE: 81/11/17 PAGE: 1 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D. m	O.B. m	CASING m	WATER LEVEL m	ANG.	AZIM
DDH	EV151	ELKCR	4	5546 97 61 3	6591 52 13	1618 16	CEL	391.77	1.52	8.84	19.49	90	000

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
82/11/81		11/11/81	4Q. 3	391.77					GED	ROK	Y	ROK	JAH

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																																	7	1.0/7.	14.3%
	1.52 metres																																10	1.4/3.0	46.7
DVB	50 feet																																13	2.0/3.0	66.7
	7.27																																15	1.8/2.0	90
	23.9						SLSM									1.6Z		0030						9						63		19	3.7/6.0	92.5
								Some major sandstone occurs.																								21	1.4/2.0	70
								This unit has a rolling pattern to it.																								22	0.7/1.0	70
								It is near surface and Eventually becomes																								23	0.9/1.0	90
								Minerous as it bed.																								27½	3.3/4.5	73.3
	14.65																																31	1.4/3.5	40.
	32.2		427				COAL																										36	1.6/5.0	32.
								Add #29 Seam. Some Pyrite very																								38	0.8/2.0	40
								Hard in the lower Core and it rolls out due to poor recovery																								40	1.2/2.0	60
								23.9-24.2-D. All hard																								46	3.4/6.0	56.7
								-25.3-Coal minor Py. [illegible] broken																								51	4.7/5.0	94
								-25.6-Coal. Hard.																											
								-26.0-Coal. D. soft																											
								-27.5-Core loss.																											
								-28.9-C-D soft V bands.																											
								-31.0-Core loss.																											
								-31.2-D. minor S. hard.																											
								-31.8-C. hard.																											
								-32.6-C. soft. Pyrite																											
								-36.0-Core loss.																											
								-36.2-D. slightly [illegible]																											
								-38.1-C-D.																											
								-38.0-Sporadic																											
								-38.2-Hard. D.																											

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal GEOLOGS

AREA: EWIN CREEK HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/17 PAGE: 2 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																																	54½	3.3/3.5	94.3
	17.11 5.58						SLSH										LZ	0030						9						63		57½	1.2/3.0	40
								Highly Broken up throughout. Dust staining throughout. Interbed of very weak bedded [illegible] Because mostly black carbonaceous [illegible] lower contact																									59	0.9/1.5	60
																																	63½	2.7/4.5	60
																																	65	0.5/1.5	33.3
	21.16 6.94		4.19				COAL																							63		71	2.6/6.0	43.3
								HU from Gamma log. FU from Gamma log alog. Sonic clude = 1.5 m of rock split																								76	4.5/5.0	90
																																	83	5.4/7.0	77.1
								55.8 - 56.2 - Cliff, hard, bandal													Coal intercepts indicated with [illegible] to fit Gamma intercepts.												
								- 56.5 - Floor																											
								- 57.3 - Roof																											
								- 57.5 - Dull, hard																											
								- 58.4 - Cl minor U.																											
								- 59.0 - Lost																											
								- 59.9 - Dull hard																											
								- 60.4 U-U bandal																											
								- 61.7 - CRHD.																											
								- 63.5 Lost																											
								- 64.0 C-D hard																											
								- 65.0 Lost																											
								- 65.9 - Dull minor V-bandal																											
								- 69.4 - Lost																											

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL - EXPL. - 9

BC Coal LOG

AREA: Evin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/17 PAGE: 3 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR	TEXTURE MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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	32 33	34 35 36	37 38	39	40 41 42	43 44	45 46	47 48	49	50	51 52	53 54 55	56 57	58 59	60	61 62 63	64 65 66	67 68 69
																													5 3	3 6	8	L			
																													7 0	3 6	3	L	92	9.5 / 9.0	105.5
		2 2 1																											1 0	5 0	5 7	L			
4		9 6 0			8		M D S M										D L	M	0 0 2 0 2			S A S M			7 4 0						6 3		96	1.0 / 4.0	25
								Sass occurs as interbeds.																											
								71.6-71.7 - Pyrite streaks.																									99	3.0 / 3.0	100
								76.0-78.0 - Small int. Siderite Cr. Rock fractures.																											
8								83.7-84.5 - Long flat bedding plane. Coaly.																									106	5.9 / 7.0	84.3
								Dark, almost black mudstone with brownish layers.																											
								unit.																									114	8.0 / 8.0	100
	3 0 1 8																																	4.8 / 5.0	
12	9 9 0	1 0 0 0					C O A L																								6 3		119		96
								96.0-97.8 - Coal, hard, brittle.																											
								- 97.95 - Pldn → Siderite																											
								- 98.8 - Coal-U. hard.																											
16								- 99.0 - Dinor U. dull → S. hard.																											
	3 5 3 4																																		
20	1 1 5 6				9		M D S M										N L		0 0 2 0 1			S A S M			9						6 3				
								101.5-102.7 - Bedding																					1 1 3	6 5	M				
								103.6 - Root in filled w/ mud.																					1 2 2	2 6 0	L				
								107-109 - Very numerous fragments in veins in Sass.																											
24								111.6-111.8 - numerous Cr. veins.																											
	3 5 5 3																																		
28	1 1 6 5						C O A L																								6 3				
								Partly O. Numerous polished surfaces. Some U. bands.																											
32																																			

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL - EXPL. - 9

BC Coal LOG

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/17 PAGE: 4 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/											

Depth (ft)	PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II ROCK % OF INTERVAL	ROCK II TYPE MODIFIER	ROCK II ROCK NAME	ROCK II QUALIFYING MATERIAL NAME	ROCK II QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																																		126	6.3/7.0	90
4		42 FT 1405						MDSN										N.A.	0020						235						61		132	5.5/6.0	91.7
									Occasional finely interbedded sandstone																				1336	55	L		139	7.0/7.0	100
									116.5-119- Highly broken up.																								142	2.0/3.0	66.7
8									125-127.8- Grained up coaly sandstone																								145	1.8/3.0	60
									133.9- Ca veins, broken section.																								147	1.2/2.0	60
									134.7-134.8- Bituminous zone																								153	6.5/6.0	108
12																																				
																																		160	6.0/7.0	85.7
16		44 FT 1449				B.	CBMD										IN	0010	2	COAL											61				
									140.5-141.0- Grained up coal																										
									-142.0- Coal																										
									Numerous Ca bands throughout the unit																										
20																																				
24		46 FT 1472		652			COAL																								61				
									HU. Ash Gauge																										
									FU. Accum Coal.																										
									142-143.2- Core loss.																										
28																																				
									144.7-145- Broken up.																										
									-146.2- Grained up broken up																										
									-147.0 Loss																										
32									-147.3- Ground up																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal GEOLOG

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/17 PAGE: 5 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																													150258	L			9.4/10	94
																													152158	M	170			
																													163764	L			6.8/7.0	97.1
4	1629				MDSN												NL	0020						9	6	0	2	5		61		177		
								149.7-151.9 - Sandy zone - x-bedded, horizontal.																									7.0/7.0	100.
								Gradational lower contact.																								184		
																																	8.4/9.0	93.3
8	2080				SHSN							153					DZN	0040						9	6	5	2	7		61		193		
								Numerous thin hardy accretionary zones polished																					170555	L			9.6/10	96
								Most bedding fractures are slickensided																					179546	L	203			
								184.3-184.4 Ca in hairline fracture. Wide band.																					202876				9.7/10	97
12								186.8-186.9 - Pinal Sed deformation																								213		
								188.7-189.7 - Thin Ca veins ll to recovery																									7.0/7.0	100.
								Most parts of this unit rec. high recovering.																								220		
								197.0-197.5 - Poor fit in recovery																									5.7/6.0	95
16								198.0-203.0 - Pervasive Ca veins & Fracs.																								226		
								Grade into the lower unit.																										
20																																		
24	2120				CBMD												N	0020						8	6	8				61				
																													217668	M				
28	2140		850		COAL																										61			
								HW taken from core due to high recovery.																										
								This DOES NOT match GEN & ZEN.																										
								212.0-212.7 - Coal, flaky.																										
32								-213.0 - Less.																										
								-214.0 Coal, minor 1, hard.																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL - EXPL. - 9

BC Coal GEOLOG

AREA: Elko Creek HOLE No: E.V.-151 LOGGED BY: JAH DATE: 81/4/18 PAGE: 6 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

	PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
	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 32	33 34 35	36 37	38	39	40 41 42	43 44	45 46	47	48	49	50 51	52 53 54	55 56	57 58	59 60	61 62 63	64 65 66	67 68 69
																																		236	10/10	100
4		22.79				8		MDSM										N.L.	00202				SASM			86430						61		246	8.9/10	89
									Seen is fo-gy-gd accu-ic, tuffaceous zones																									256	10/10	100
									Often x-bedded																									266	10/10	100
8									221.3 - Ca vein in bedded fossiferous																											
																																		272	2.3/6.0	38.3
																																		276	0.7/4.0	17.5
12		22.86	70 00					COAL																								66				
									Telescope info. from Core due to high recovery,																				2310	68	M	281	4.3/5.0	86
									DOES NOT model GENUINE mode																				2453	65	M			
																														2573	65	L			
16									227.9 - 228.0 D-C Sill																											
											-228.0 - Coal with high % of PYRITE																										
											-229.0 - Coal, hard																										
											-229.05 - Clay																										
20											-229.6 - Coal, hard																										
24		25.00						MDSM					M					L	00000							764						66				
									Occasional thin sub-horizontal																											
									249.9 - 249.8 - Disseminated Pyrite																											
28									Gradational lower contact																											
32		26.96				8		SASM										L DZ	00402				MDSM			566						66				
									Numerous bitumenous zones throughout.																				266	4	63	L			

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KBI - EXPI - 9

BC Coal LOG

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/18 PAGE: 7 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

Line	PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR	MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																																			286	3.5 / 5.0	70
		80 / 2802		396				COAL																								66		296	8.7 / 10.0	87
								H.W. from GRN. F.W. from DEN. - Fair recovery.																										306	8.5 / 10	85
								268.2-269.6 - Lost.																										316	8.7 / 10.	87
8								269.6-272.0 Lost coal																										323	6.0 / 7.0	85.7
								-272.7 - Lost, poor V. Broken.																												
								-276.0 - Lost																												
								-276.7 - Lost																												
12								-278.8 - Coal minor V. Hard																												
								-280.2 - Coal minor D. soft, flaky																												
16		80 / 2910					CBND											N		0020						9						59				
								282.2-283.2 - CBSN - fair recovery																												
								283.8-284.2 - Coal hard																												
20																																				
		82 / 2926		1000.				COAL																								59				
24								Appears to be good recovery.																						2900	47	L				
								H.W. + F.W. Edge Core.																						2975	60	L				
																														3169	71	L				
28								291.0 - 291.6 - Coal V. Hard carbon																												
								-291.6 - Coal minor D. flaky																												
								Core & Graphic Logs do not correspond well on this seam.																												
		27 / 3201				8	MDSN											NL		00202			SASP									59				
32								294.2-294.6 - Thin coal band - Coal V. hard																												
								305.7-306.2 - Thin coal band - Coal V.																												

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal Log

AREA: Ewin Creek HOLE No: EU-151 LOGGED BY: JAH DATE: 81/11/23 PAGE: 8 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo. Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47 48 49	50	51	52	53 54 55 56	57	58 59	60	61 62 63	64 65 66	67 68 69
																																333.	11.3 / 10	113.
	9 8 8 4																																10 /	
4	3 2 4 2	1 0 0	0				C O A L																							5 9		343	10 / 10	100.
									319.1-320.1 - Lost in 4.2. Rock																							353	9.8 / 10	98
								4.1 Fro. Fall 2 Dust to mostly coal less ete																								364	9.2 / 11.0	83.6
								320.1-320.2 - Coal hard, dull																										
8								-320.3 - Coal hardly breaks up																										
								-322.8 - D-C, very hard, blocky																										
								-323.0 - C, soft																										
								-324.2 - Coal, very V, some pyrite, breaks up																										
12								-There appear to be no partings in the coal.																										
	1 2 2 4 4																																	
16	3 3 6 0						M D S M									11		0 0 2 0						3						6 3				
								326.3 - 327.4 - Sandstone																										
								Gradational lower contact.																										
20																																		
	1 1 5 5																																	
24	3 6 5 9						S A S N							3			F D N 7 0 0 5 0				0 0 4 0			3 7 2						6 3				
								Very [illegible] bedding, [illegible]																				3 4 3 6 6 5 L						
								Approx. 348.5 to 349.7 [illegible] coal [illegible]																				3 5 2 6 8 1 L						
								350.2 - Pyrite in coal, [illegible]																				3 6 1 2 6 1 M						
28								Coal hard in places, [illegible]																										
								Grade [illegible]																				3 6 8 7 6 1 M						
																												3 7 7 7 6 5 M						
	1 3 1 9 2																																	
32	4 3 2 7						S A S N					3 5 5				N Z B		1			0 0 4 0			3 7 8 4 2						6 4				
								This sand is coarse grained and [illegible] laminated																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KPI - EXPI - 9

BC Coal LOG

AREA: Elk Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/23 PAGE: 9 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32 33	34 35 36 37	38	39	40 41 42	43 44 45	46	47	48	49	50 51 52	53 54	55 56 57	58 59	60	61 62 63	64 65 66	67 68 69
								375.4 - 377.9 - Very coarse sc. Sscr.																					3 8 3 0 7 4		M		10/10	
								380.3 - Thin to bedded to thin.																					4 0 5 7 5 8		L	374		100
								383.1 - 387.8 - Some Mudchips. Also some																					4 1 3 5 6 7		M		10/10	
4								391.8 → Some Lithic. Very numerous coal seams.																7/10 cores is highly								384		100
														broken up in this zone																				394	10/10	100
								402 - 402.5 Shale band.																											
								401 - 402 - highly broken up																										404	9.7/10	97
8								404.0 - 404.5 - Very gentle [illegible]																											
								408.3 - 409.5 - Long fractures // to core axis.																										415	9.7/11.0	85.5
								414.6 - 420.5 - Very numerous coal seams.																											
								419.6 - Coal band in fractured [illegible] thick																										425	9.5/10	95
12								420.5 - 422.9 - Numerous mud chips // to bedding																											
								425.3 - 432.7 - Very numerous partings // to bedding.																										435	9.8/10	98
								- Basically zip-up clean. Occasional [illegible] pyrite																											
								occur also.																										441	5.9/6.0	98.3
16								Lower contact is abrupt.																											
																																		446	4.5/5.0	90
	13 4 1 6																																	456	9.5/10	95
20	4 4 0 1						M D S M	5 2 1									L N	0 0 3 0						7						6 4				
																													4 2 6 9 6 4		M		9.6/10	
																													4 3 5 5 6 8		L	466		96.
																													4 5 8 0 5 5		L.		9.9/10	
	14 4 4 5																																	476		99
24	4 6 3 8						S A S N						5 6 7 5 N					0 0 4 0						8						6 4				
								This zone has very numerous coal seams																					4 6 3 5 6 8		M			
								Most of the fracturing occurs along the seams																					4 6 8 7 6 0		M			
								447.2 - 450.7 - Interbedded Mdst with sandy seams.																											
28								456 - 460 - No coal seams.																											
								460 - 463.8 Very numerous coal seams.																											
								Abrupt lower contact.																											
	14 4 2 7																																		
32	4 7 3 2				6		S A S N			1			5 3				L	0 0 4 0 4			S L S N			6						6 4				
								Interbeds of Sand S/Sn.																											

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOG

AREA: Elk Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 84/11/24 PAGE: 10 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
	/	/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	STRUCTURE: FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																													476754	L					
																													481870	L	486	9.7/10	97
	14818																																		
4	4858						SASN							S			N	0050						758						62		496	9.5/10	95
								This unit fines upward from a granular sand to large sand																											
								477.0-477.4 - Sed. pb. formation																									506	9.7/10	97
								478.0-478.5 Coal band // to core axis																											
8								478.5 - Recover coarse sand																									516	9.7/10	97
								480-480.5 - Thin coal band along bedding																											
								481.5-482.0 - Thin coal band along bedding																									526	9.0/10	90
								482.5-482.6 - Rip up mud clasts																											
12								483.6 - Granular sandy beds																											
								484-484.8 - High sed. deformation / mudstone rich beds																											
								Abrupt lower contact																											
								Probably a channel sand																											
16																																			
	14202																																		
20	4890						MDSN							U				0020						8						62					
								Different facies than above unit. Has gutter, non-agitated environment.																											
	15730																																		
24	5162						SASN						8	4	9	3	UN	0050						904						62					
								488.0-489.3 High sed deformation																					491051	M					
								Numerous fractures 45° to core axis usually filled with Calcite																					492262	M					
								496.9-506.0 - Most of the sediments are coarse grained																					495162	M					
28								in this zone.																											
								506.5-507.4 - Rip up clasts at base.																					511363	M					
								507.4-510.1 - Silty Mdst interbed. Begin another channel sand																					522671	L					
								below this unit.																											
32								515.0-516.2 Only 3 pors occur.																											
								Sharp lower contact.																											

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOG

AREA: Elko Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/24 PAGE: 11 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR	TEXTURE MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																														5 3 4 3	7 4	L			
																																	536	10/10.	100
	17 1 6 6																																			
4	5 3 6 1				9		MDSM					11				B			0 0 3 0 1			SASM			6 7 6 2 1						6 5		546	9.7/10	97.
	Sash papers as a gray interval.																																			
	Grad. lower contact.																																552.	5.4/6.0	90.
	16 4 6 6																																			
8	5 6 0 1						SASM									LDR			0 0 4 0						3 7 0						6 5		556	2.5/4.0	62.5
	Wavy bedding, sand, interbed within																																			
	mdsm units.																																559	2.0/3.0	66.7
	16 7 6 2																																			
12	5 5 7 0						MDSM									U			0 0 2 0						9						6 5		566	6.4/7.0	91.4
	Most fracture surfaces are oxidized.																													5 4 8 9	6 0	L			
	560 - 570 lost core.																																			
16																																				
	17 0 2 3																																			
20 6.5	5 6 0 0		8 0 0				COAL																								6 5				
	N.U. from core & GRN																																			
	Th. from DENS.																																			
	557.0-557.5 - Coal Hard, banded.																																			
24	-557.6 - Mdsm.																																			
	-557.8 - Coal.																																			
	-558.0 - Mdsm.																																			
	-558.3 - Coal. Hard.																																			
28	-558.5 - Bone																																			
	-559.0 - Coal broken																													5 6 6 8	6 0	L			
	-559.6 - Lost																																			
	-560.0 - Coal, Hard, banded.																																			
32	The N.U. of the seam is based from the																																			
	feed hose the coal																																			

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRI - EXPI - 9

BC Coal LOG

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/24 PAGE: 12 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
	/	/											

Line	PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																														577	3	57	M			
																														583	8	56	M	576	10/10	100
																														586	3	66	M			
4		17565 / 5840						SASN							3			L M	0050						3	64						62		586	10/10	100
									Numerous broad fracture																					592	2	60	M			
									570-573.3 - Silty band.																					607	1	56	M	596	9.3/10	93.
									573.3-576.3 - Mud band																					617	0	69	M			
8									Grading into Sh.																									606	9.0/10	90
																																		616	10/10	100
		15250 / 5986				7		SLSN										LDN	00403			SASN			5							62		626	9.6/10	96
									596.0-598.6 - Hard Sediment.																									636	9.1/10	91.
									Fairly abrupt lower contact																											
		19741 / 6475						SASN					1759	3	L	N	D	0050							3	67						62		646	9.4/10	94
16									611.1-611.6 - Occasional coprolites																					626	6	74	M			
									616.2-619.0 - Thin coal bands, bedding planes																					634	4	56	L	656	10/10	100
									623.2-628.5 - Dull group coal																					644	2	58	M			
20									623.6-626.0 - Coal veins along bedding planes																									661	6.0/5.0	120
									627.5-636.2 - Numerous coal seams, [illegible]																									566.	4.5/5.0	90
									636.2-636.8 - Very coarse coal																											
									640.0-641.8 - Sh. band																											
24									642.9-643.2 - Sh. band																											
									644.0-644.5 - Becomes very coarse, [illegible]																											
									646.9 - Large Mud clay in gray [illegible]																											
									Abrupt lower contact.																											
28																																				
		20122 / 6622				9		MDSN										L	00201			SASN										62				
									Sp. occurs at occasional laminated in the bed																					656	6	61	M			
																														66	6	68	L			

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KBI - EXPI - 9

BC Coal Log

AREA: Elk River HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/25 PAGE: 13 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

Line	Primary Control	Depth to End of Interval Described (Tenths)	Recovery % (Tenths)	Rock % of Interval	Type Modifier	Rock Name	Major Qualifying Material (Name / Amount)	Minor Qualifying Material (Name / Amount)	Bed Thickness	Sorting	Grain Size	Sphericity	Roundness	Texture (Major → Minor)	Colour Munsell System	Rock II % of Interval	Rock II Type Modifier	Rock II Rock Name	Rock II Qualifying Material (Name / Amount)	Fractures: Intensity	Primary Joint Angle	Secondary Joint Angle	Relation	Footage of C-B Angle Measurement (Tenths)	C-B Angle	Reliability	Core Footage To	Length	Core Recovery
							Abrupt Lower Contact.																	6 6 7 6 6 7 L			676	10/10	100
4		20 3 6 9 6 6 8 1				SASN				53				L	0040					2					70		686	9.9/10	99
							Gradational Lower contact.																				696	10/10	100
8		20 3 1 5 6 8 6 0		6		SLSN								L	0030	4		SASN		4	6 6				70		706	9.7/10	97
							Seam occurs as occasional interbeds, and usually has wavy or ripple bedding																				716	9.4/10	94
12							671.3 } Coal seams 0 1/2cm thick																				718	2.0/2.0	100
							672.2 } Some thin veins also.																				721	2.1/3.0	70
							673.7-673.9 - Two thin Coal beds in bedded fractures.																				723	1.0/2.0	50
16							Becomes muddy near end of unit.																						
20		21 6 5 5 7 1 0 3		8		MDSN								L	0022			SASN		6 6 7					70				
							Seam occurs as thin bed.																	6 8 6 3 7 4 L					
							695.6-697.0 - Sandy zone - 1/2 cm																	6 9 5 2 6 8 L					
24							Mdst becomes darker & more carbonaceous near bottom																						
28		22 2 6 1 7 6 3 6	8 1 4			COAL																			70				
							H.W. taken from seam due to high recovery in that run.																						
							Thickness & F.I. from Expanded DEM. Log																						
32							710.3-710.7 - Bone broken up, some V beds.																						
							- 710.8 - Mdst.																						
							- 711.6 - Co-V, Mod banded.																						

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal Log

AREA: Elk Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/25 PAGE: 14 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32 33	34 35 36 37	38	39	40 41 42 43	44 45	46	47 48 49	50	51	52	53 54 55 56	57	58 59	60	61 62 63	64 65 66	67 68 69
								711.6		711.9			Bone																					
													714.0				Cd-U, hard, soft, slickensides, abg, bedding, fracture																726½	2.7 / 3.5	77.1
													716.9				Ids, w/ clay band																		
4						710.3	716.2						715.4				C-D, coal, bedding																732	3.7 / 5.5	67.3
							Sandstone						716.0				Lost																		
													717.0				C-D, broken up																736	3.3 / 4.0	82.5
													717.1				Mdn																		
8													717.6				C-D, broken up																741.	4.9 / 5.0	98
													718.0				Ids																		
													718.2				Mdn																		
													720.1				Cd-U, banded, broken up																		
12													721.0				Lost																		
													722.0				Cd-U, broken up																		
													723.0				Lost																		
													724.3				Cd-U, banded, Hard																		
16													724.5				C-flat, broken up																		
													725.7				Cd-U, Hard, banded																		
													726.5				Lost																		
													727.3				Mdn																		
20													727.4				C, broken up																		
													727.5				Bone																		
													728.2				Cd-U, banded																		
													728.3				Bone																		
24													730.2				C, w/ U, banded, Hard, D																		
													732.0				Lost																		
													732.3				C-D, flat																		
													732.5				Mdn																		
28													732.6				D, minor C, broken up																		
													732.7				Mdn																		
													734.7				C, broken up, soft																		
													736.2				Mdn																		
32													736.3				D-C, w/ U, banded, Hard																		
													736.0				Lost																		

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRI - EXPI - 9

BC Coal LOLOG

AREA: Fwin Creek HOLE No: EU-151 LOGGED BY: JAH DATE: 81/11/25 PAGE: 15 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
	/ /	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II ROCK % OF INTERVAL	ROCK II TYPE MODIFIER	ROCK II ROCK NAME	ROCK II QUALIFYING MATERIAL NAME	ROCK II QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																																	746	4.3/5.0	86
																																	751	4.5/5.0	90
																																	756	2.9/5.0	58
																																	761	4.3/5.0	86
																																	766	5.0/5.0	100
																																	776	9.6/10	96
																																	786	9.5/10	95
																																	796	9.7/10	97

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS
	234 445 7690			CBMD					N	0010				9			70
	239 445 7841		8	SASM					LD	0040 2				MDSN	666		70
	240 62 7899			EBMDC	01				N	0010				9			70

FOOTAGE OF C-B ANGLE MEASUREMENT
773366
777974

Rock I Characteristics (depth, lithology):

- 736.0 – 740.9 – Coal, Hard, banded. Solid Core.
- 741.0 – Lost.
- 742.3 – Coal, inter V, bands.
- 742.6 – Coal, grounded up.
- 745.3 – Coal-U Hard, banded.
- 746.0 – Lost.
- 750.5 – Coal-U Hard, banded, solid core.
- 751.0 – Lost.
- 752.7 – D-C, Numerous U bands. Broken up.
- 753.9 – Ground up, main C seam.
- 756.0 – Lost.
- 757.7 – Coal-U banded Hard.
- 757.8 – Mdn.
- 760.2 – Coal-U Hard, banded.
- 760.3 – Lost.
- 761.0 – Lost.
- 761.1 – Mdn.
- 762.3 – Coal-U Hard, banded.
- 763.6 – Coal-U, broken up.

DENS TA & Core F.W. corresponds well.

- 768.6 – 769.0 – Coal hard.

Stop Lower Cartbot.

- 784.1 – 784.5 – Coal, gd-U.

Numerous coaly bands throughout.

BC Coal LOG

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/26 PAGE: 16 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN.	Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/		/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR	TEXTURE MINOR	COLOUR MUNSELL SYSTEM	ROCK II ROCK % OF INTERVAL	ROCK II TYPE MODIFIER	ROCK II ROCK NAME	ROCK II QUALIFYING MATERIAL NAME	ROCK II QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
								Fairly sharp lower contact																										806	9.9/10.	99.
	24351																																			
4	7987						SASM							2			LZ		0040						2						66		816	9.9/10	99
																														79706	7	M				
																														82026	8	L	826	10/10	100
	25780																													82536	7	M				
8	8456				R		SLSM										LD		0030	2		SASM			548						66		836	10/10	100
								818.8 - 822.0 - Sharp lower contact, fragments commonly																						83066	6	M				
								Poorly sorted interbeds in																						83969	9	L	846	9.8/10	98
								822.0 - 831.0 - Fine sand - Lower																						84864	4	M				
12								837.3 - 839.0 - Sandy High Sil deformation, Convoluted bedding																									856	10.0/10	100
								840.2 Thin V bands																						85486	4	M	866.	9.5/10	95
								840.3 J																						85646	6	M			
								Bioturbated sandier layers below																						86256	2	M	876	9.8/10	98
16								Grades into a bioturbated Sand																												
																																		886	9.9/10	99
	29470																																			
20	9338						SASM						B7	59	3	LN	DZ	0050							468						66		896	9.5/10	95
								Thin coal - fairly gradual contact - 1.0 gradational change																						Hard						
								No wash.																												
								845.6 - 856.9 - Fine sand w/ slump structures																												
24								856.9 - 867.8 - Mud to Coarse sand																												
								867.8 → 883.0 Very coarse to granular sand																						87437	7	M				
								868.9 - 872.8 Coal Seam - Many fractures in this zone																												
								872.8 - 876.1 - Mostly rip-up clasts																												
28								876.1 - 877.1 - 1 cm band																												
								877.8 → 880.0 Clean, uniform sand, Colour Lavender																												
								883.7 - 889.1 - Granular Sand, some coarse grains																												
								889.1 - 890.8 - Silt band																												
32								890.8 - 892.9 - Gray-brown																												
								- 893.6 - Silty band																												
								894.4 - 896.5 - Silty band																												

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal Geolog

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/26 PAGE: 17 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32	33 34 35 36	37	38	39	40 41 42	43	44 45	46	47	48	49	50	51	52	53 54 55 56	57 58	59	60	61 62 63	64 65	66 67 68	69
								890.5 - 896.0 - Grey to light																								8 8 9 9 7 4		L		9.9/10	99
								896.0 - Lay because																								8 9 8 0 6 4		M	906		
																																9 0 7 7 6 4		L		9.7/10	97.
4								916.8 - 917.5 - Silty band																											916		
								917.5 - Brown very coarse																								9 1 7 5 6 8		L		9.9/10	99
								926.0 - 933.8 Med to coarse grained, Numerous coal specs																								9 2 6 2 5 9		L	926		
								Abrupt lower contact																								9 3 0 7 6 4		M			
8																																			936	9.7/10	97
																																			946	9.3/10	93
12	30 7 10 9 5 3 5				8		S A S N							3			L N D	0 0 4 0 2			S L S N			5 6 9								6 6		956	9.1/10	91
								939.6 - 944.4 - Rd. dark																								9 5 1 0 6 8		M			
								946.0 - 955.5 - Coarse to v. coarse																								9 5 8 8 6 6		M	966	9.9/10	99
								- 953.5 - v. coarse to granular																								9 6 9 0 7 7		M	976	10/10	100
16								Abrupt lower contact																													
																																			986	9.3/10	93
20	30 7 5 4 1 0 0 9 7				9		M D S N										N L	P 0 3 0 1			S A S N			6 6 0 1 2								6 6		996	9.3/10	93
								973.8 - 976.3 - Sesq bed, dip 90.																								9 9 0 6 7 5		L	1006	10/10	100.
								997.6 - Slickensided bedding plane																								9 9 1 5 6 2		M			
								1000.2 - Fossils in bedding plane																								1 0 1 0 6 6 8		M	1016	10/10	100
24								Fairly sharp lower contact																													
																																1 0 2 0 2 6 8		L		9.7/10	97
																																1 0 2 8 0 6 4		M	1026		
28	31 9 10 1 0 4 6 7				7		S A S N							L 5 3			L D Z	0 0 3 0 3			M D S N			5 2 2								6 6		1036	9.9/10	99
								1013.0 - 1014.8 - Thin Co veins in bedding fractures // to core axis.																											1045	8.4/9.0	93.3
								1031.7 ? Co veins in bedding fractures.																													
								1033.9																													
32								1036 - 1045 - Co veins more broken up.																													
								1036.3 - 1037.1 - Long Co vein in bedding fracture // to bedding.																													

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOG

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/30 PAGE: 18 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR	MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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	32 33	34 35	36	37	38	39	40 41	42	43	44 45	46	47 48	49	50	51	52	53 54	55	56	57	58	59	60	61 62	63	64 65	66	67 68	69
									1036.0 - Sideritic																					1 0 3 7	0 6 2	M			10/10		
																		v												1 0 4 6	4 6 2	M	1055		100	
	3 2 6 9 3																													1 0 5 6	4 6 3	L		9.9/10		
4	1 0 7 2 3						M D S	N										L		0 0 2 0											6 6		1065		99	
									Occasional		thin	Sand		Laminae																1 0 6 2	6 5 8	M		9.8/10		
																														1 0 6 9	8 6 8	M	1075		98	
	3 2 7 5 6																																	1.7/4.0		
8	1 0 7 4 4		1 0 0 0				C O A L																								6 6		1079		42.5	
									Mudstone core.									GRIT	DENS	and	by	lamina.													4.0/5.0		
									Th. from core																									1084		90	
									1072.3 - 1073.7 - Coal V. hard																												
12											- 1073.8 - M																							0.7/1.5		
											- 1074.3 - D.																							1055½		46.7	
																																		9.0/9.5		
																																		1095		94.7	
	3 2 5 3 6																																	4.3/6.0		
16	1 0 7 6 7						M D S	N										M		0 0 2 0											6 6		1101		71.7	
	3 3 3 4 5																																			
20	1 0 9 3 7		7 9 4				C O A L																								6 6					
									1075.0 - 1075.3																												
	Mudstone from Core								1075.3 - 1076.1																												
	Dull lustre in glass								1076.1		- 1076.7																										
24	seen in										- 1077.3																										
											- 1079.0																										
											- 1082.0																										
28											- 1084.0																										
											- 1084.4																										
											- 1085.5																										
											- 1086.7																										
32											- 1088.5																										
											- 1089.0																										
											- 1088.0																										

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal LOG

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/30 PAGE: 19 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR	TEXTURE MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY

BC Coal Colog

AREA: Ewin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/11/30 PAGE: 20 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/ /											

Line	PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY
																														11356	0	60	L		9.4/10.	94
																														11391	6	6	L	1156		
																														11512	7	6	M			
4		35372 11602						MDSN					6					NED	0020					1		770					66		1166	9.6/10.	96.
									1139.8 - 1142.3 - Broken up with coaly layers																					11588	6	8	M	1173	5.9/7.0	84.3
									1137.0 - 1137.6 - Thin Co joint in fresh core.																											
									1147.5 - 1148.6 - Reported - Soft																									1179	5.5/6.0	94.7
8									This sandy interbed is MDSN coal contact																											
																																		1186	6.2/7.0	88.6
12	3.5	35176 11730		883				COAL																							66				
									NO. impured from core due to poor recovery. Core to Gamma in 1.0.																											
									Th. taken from core point of view due to impurity, close to 1.5 m thick.																											
									1160.2 - 1160.9 - D-U Hard, dull bright banded.																											
16									- 1164.0 - C-D soft, [illegible]																											
									- 1164.2 - D dull Hard																											
									- 1164.9 - Mis																											
									- 1165.6 - Col-U hard band																											
20									- 1166.0 - Lot																											
									- 1167.9 - Col-U Highly [illegible]																											
									- 1169.1 - Mis																											
									- 1171.9 - Col-U Hard																											
24									- 1173.0 - Lot																											
		35826 11751						MDSN										N	0020												66				
		36168 11863		884				COAL																							66				
32	3.5								NW. E FU. from core due to high recovery																											

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KRL - EXPL - 9

BC Coal LOG

AREA: Erin Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/12/01 PAGE: 21 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT	FRACTURES INTENSITY	FRACTURES PRIMARY JOINT ANGLE	FRACTURES SECONDARY JOINT ANGLE	FRACTURES RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE FOOTAGE TO	LENGTH	CORE RECOVERY

BC Coal LOG

AREA: Fair Creek HOLE No: EV-151 LOGGED BY: JAH DATE: 81/12/01 PAGE: 22 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
/	/	/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS	ROCK I CHARACTERISTICS: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL: NAME	AMOUNT	MINOR QUALIFYING MATERIAL: NAME	AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE: MAJOR → MINOR	COLOUR MUNSELL SYSTEM	ROCK II: ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL: NAME	AMOUNT	STRUCTURE: FRACTURES: INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY	CORE RECOVERY: CORE FOOTAGE TO	LENGTH	CORE RECOVERY
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 32 33	34 35 36 37	38 39		40 41 42 43	44 45 46		47 48 49	50	51 52		53 54 55 56	57	58 59	60	61 62 63	64 65 66	67 68 69
																																	1233	9.1/11	22.7
	36754																																1238.	4.1/5.0	92
4	12065		722				COAL																								66				
								HLJ from core 76 from Dens																											
								1204.7 - 1205.9 - Cd-V, hard banded																											
										- 1206.0 - Lost																									
8										- 1206.1 - Cd-V hard.																									
										- 1206.7 - Lost																									
	37241																																		
12	12215						MDSN											0020												66				
								Becomes coaly and hard banded near bottom																											
								Lost at the coal loss for 2% - 1222.7 - 1223.1 - Lost at																											
								the end of the core. Core 1223.1 - 1223.3 - Lost core. Hard at																											
16								the bottom. Also the core contained many																											
								1219.6 - 1221.5 - Lost core.																											
	37341																																		
20	12248						SDSN						75		N			0050							9						66				
								Numerous Fe veins in fractures.																											
	37643																																		
24	12347						MDSN											0020							573						66				
								1234.3 - 1234.7 - Light coloured clay band. Slickensides. Fractures.																											
								Dense material.																											
	37674																																		
28	11.5 12357						COAL																								66				
								1234.7 - 1235.5 - Cd-V hard.																											
										- 1235.7 - Bower																									
								Sharp lower contact.																											
32																																			

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

BC Coal Colog

AREA: _____ HOLE No: _____ LOGGED BY: _____ DATE: _____ PAGE: 23 OF: 23

TYPE	HOLE NO.	AREA	G	LAT.	DEP.	ELEV.	DRILL CO.	T.D.	O.B.	CASING	WATER LEVEL	ANG.	AZIM

DATE	START	FIN. Day, Mo., Year	SIZE	TO	SIZE	TO	SIZE	TO	GEO. LOG	CO.	D.	CO.	GEOL.
	/	/											

PRIMARY CONTROL	DEPTH TO END OF INTERVAL DESCRIBED	TENTHS	RECOVERY %	TENTHS
	39172			
4 11·11	12850			

ROCK I CHARACTERISTICS

ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	MAJOR QUALIFYING MATERIAL NAME	MAJOR QUALIFYING MATERIAL AMOUNT	MINOR QUALIFYING MATERIAL NAME	MINOR QUALIFYING MATERIAL AMOUNT	BED THICKNESS	SORTING	GRAIN SIZE	SPHERICITY	ROUNDNESS	TEXTURE MAJOR → MINOR	COLOUR MUNSELL SYSTEM
		SASM					LB573					LU	0060

ROCK II

ROCK % OF INTERVAL	TYPE MODIFIER	ROCK NAME	QUALIFYING MATERIAL NAME	QUALIFYING MATERIAL AMOUNT

STRUCTURE

FRACTURES INTENSITY	PRIMARY JOINT ANGLE	SECONDARY JOINT ANGLE	RELATION	FOOTAGE OF C-B ANGLE MEASUREMENT	TENTHS	C-B ANGLE	RELIABILITY
278						71	
				12470	7	6	M
				12567	6	7	L
				12665	7	2	L
				12774	7	4	L
				12840	6	6	M

CORE RECOVERY

CORE FOOTAGE TO	LENGTH	CORE RECOVERY
1246	7.6/8.0	95
1256	9.7/10	97
1266	10/10	100
1276	8.8/10.	88
1285	8.8/9.0	97.8

1235.7-1236.0 - Ch.s coaly.
1236.0-1236.5 - Some minor coaly zones in fractures
1235.7-1237.6 - Uniform non-bedded seam
1243.6 → Becomes colour banded
1268.5-1269.9 Dark silty bands occur
1270.3-1270.7 S
1285.0 - End of Hole

ANL	DEPTH	REC %	SEAM	RAW ASH	RAW FSI	CLEAN FLOAT	CLEAN MOIST	ASH	V.M.	V.M.(DAF)	F.C.	FSI	SULF	D.D.M.	YIELD	B.T.U.	VERTICAL THICKNESS

KOI - EYPI - 9

APPENDIX II

The proximate analyses, washability tests and petrographic examinations of the coal seams sampled from diamond drillholes E.V.-150 and E.V.-151 were performed in the B.C. Coal Ltd. laboratory located in Sparwood, British Columbia.

A Geisler Plastometer was used in conducting fluidity tests on the samples. A Ruhr dilatometer was used for the dilatation tests.

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM
VERTICAL THICKNESS 0.76 DIP ANGLE 22
RECEIVED: 00/00/00 HH DD YY

INTERCEPT 13.81- 14.57 INTCPT THICKNESS 0.76 TRUE THICKNESS 0.70 M
LATITUDE 3346736.970 N DEPARTURE 659471.970 N ELEVATION 1614.190 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 96.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	0.00	0.00
ASH %	0.00	0.00
V.M. %	0.00	0.00
F.C. %	0.00	0.00
F.S.I.		
% TOTAL SULF.	0.00	0.00
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	0.
V.M. % (DAF)		0.0

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	0.0
TII - MAX. CONTRACTION TEMP.	DC	0.0
TIII - MAX. DILATATION TEMP.	DC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
0	0.0	TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID % RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
FROTH CELL TEST (0.0) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST (0.0) -60M + 0	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	

NOTES:

Sample #1

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM 5.S
VERTICAL THICKNESS 3.30 DIP ANGLE 30
RECEIVED: 00/00/00
MM DD YY

INTERCEPT 59.60- 62.90 INTCPT THICKNESS 3.30 TRUE THICKNESS 2.86 M
LATITUDE 5734736.970 N DEPARTURE 659471.970 N ELEVATION 1568.400 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 0.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	29.40
ASH %	57.80	10.40
V.M. %	12.40	22.50
F.C. %	29.80	67.10
F.S.I.	1	7
% TOTAL SULF.	0.27	0.52
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7836.
V.M. % (DAF)		29.4

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	398.0
FUSION TEMP.	DC	418.0
MAX FLUID TEMP.	DC	452.0
FINAL FLUID TEMP.	DC	483.0
SOLIDIFICATION TEMP.	DC	492.0
MELTING RANGE	DC	65.0
MAXIMUM FLUIDITY DD/M		778.1

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	409.0
TII - MAX. CONTRACTION TEMP.	DC	449.0
TIII - MAX. DILATATION TEMP.	DC	482.0
CONTRACTION	%	18.0
DILATATION	%	98.0

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	89.9	70.5	89.9	70.5
-28M + 60M	6.3	27.8	96.2	67.7
-60M + 0	3.8	28.9	100.0	66.2

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%
9	0.7
10	2.1
11	11.0
12	35.7
13	15.9
14	3.4

REACTIVE COMPONENTS	
TOTAL VITRINOID	69.0
REACTIVE SF. (1/2)	9.9
EXINOID & RESIN	0.2
TOTAL REACTIVES	79.1

INERT COMPONENTS	
INERT SF. (1/2)	9.8
MICRINOIDS	2.3
FUSINOIDS	2.9
MINERAL MATTER	5.9
TOTAL INERTS	20.9

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.24
BAL. INDEX 0.87 STRENGTH INDEX 5.07 PRED. COKE STAB. INDEX 63.80

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(89.9) -1/4'+28M	FLT.	1.30	4.0	2.9	7-1/2	4.0	2.9	43.4
		1.40	6.2	10.3	6-1/2	10.2	7.4	48.1
		1.50	5.1	20.9	3	15.3	11.9	40.4
		1.60	4.4	30.7	1-1/2	19.7	16.1	34.9
		1.70	3.8	39.3	1	23.5	19.8	
	SINK	1.70	76.5	86.1	NC	100.0	70.5	
(6.3) -28M+60M	FLT.	1.30	38.0	2.2	7-1/2	38.0	2.2	75.0
		1.40	16.0	7.2	7	54.0	3.7	37.1
		1.50	10.7	15.4	2	64.7	5.6	21.2
		1.60	4.6	25.9	1	69.3	7.0	10.1
		1.70	2.7	36.4	1	72.0	8.1	
	SINK	1.70	28.0	78.4	NC	100.0	27.8	
(3.8) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	6.3	2.8	7-1/2	6.3	2.8	44.9
		1.40	6.5	7.8	7	12.8	5.3	42.8
		1.50	5.7	14.9	5	18.5	8.3	38.6
		1.60	5.3	22.8	2	23.8	11.5	35.1
		1.70	4.7	31.0	1	28.5	14.7	
	SINK	1.70	71.5	82.8	NC	100.0	63.4	

FROTH CELL TEST

		WT.	ASH	WT.	ASH
(6.3) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

		WT.	ASH	WT.	ASH
(3.8) -60M + 0	FROTH	83.3	19.2	83.3	19.2
	TAILINGS	16.7	77.4	100.0	28.9

NOTES:

Sample #2

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM S.S
VERTICAL THICKNESS 13.59 DIP ANGLE 30
RECEIVED: 00/00/00 HM DD YY

INTERCEPT 62.90- 76.49 INTCPT THICKNESS 13.59 TRUE THICKNESS 11.77 M
LATITUDE 5546736.970 M DEPARTURE 639471.970 M ELEVATION 1365.100 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 85.0 % HM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	71.80
ASH %	17.40	8.10
V.M. %	19.10	20.40
F.C. %	63.50	71.50
F.S.I.	6	7
% TOTAL SULF.	0.26	0.34
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	6982.	7970.
V.M. % (DAF)		23.1

% (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	406.0
FUSION TEMP.	DC	436.0
MAX FLUID TEMP.	DC	457.0
FINAL FLUID TEMP.	DC	475.0
SOLIDIFICATION TEMP.	DC	488.0
MELTING RANGE	DC	42.0
MAXIMUM FLUIDITY DD/M		32.7

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	414.0
TII - MAX. CONTRACTION TEMP.	DC	453.0
TIII - MAX. DILATATION TEMP.	DC	453.0
CONTRACTION	%	16.0
DILATATION	%	-16.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1532

V-TYPES

TYPE	%
11	2.7
12	20.6
13	26.1
14	1.9
0	0.0
0	0.0

REACTIVE COMPONENTS	
TOTAL VITRINOID	54.3
REACTIVE SF. (1/2)	15.3
EXINOID % RESIN	0.1
TOTAL REACTIVES	69.7

INERT COMPONENTS	
INERT SF. (1/2)	15.3
MICRINOIDS	3.5
FUSINOIDS	7.0
MINERAL MATTER	4.5
TOTAL INERTS	30.3

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.32
BAL. INDEX 1.58 STRENGTH INDEX 3.43 PRED. COKE STAB. INDEX 60.70

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	87.4	22.6	87.4	22.6
-28M + 60M	7.3	11.2	94.7	21.7
-60M + 0	5.3	15.2	100.0	21.4

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(87.4) -1/4'+28M	FLT.	1.30	12.1	2.1	8-1/2	12.1	2.1	42.5
		1.40	28.8	6.6	7	40.9	5.3	43.4
		1.50	13.0	15.3	1-1/2	53.9	7.7	15.3
		1.60	1.7	27.9	1	55.6	8.3	11.9
		1.70	9.8	36.6	1	65.4	12.5	
	SINK	1.70	3.7	63.7	NC	69.1	15.3	
(7.3) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(5.3) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	27.6	2.6	8	27.6	2.6	63.4
		1.40	24.6	2.0	4 1/2	52.2	2.3	52.6
		1.50	18.7	14.4	1	70.9	5.5	32.7
		1.60	8.2	26.6	1	79.1	7.7	13.9
		1.70	3.2	37.6	1	82.3	8.9	
	SINK	1.70	17.7	69.4	NC	100.0	19.6	
FROTH CELL TEST								
(7.3) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(5.3) -60M + 0	FROTH		93.9	11.6	7	93.9	11.6	
	TAILINGS		6.1	71.2	NC	100.0	15.2	

NOTES:

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM INTERCEPT 202.16- 203.23 INTCPT THICKNESS 1.07 TRUE THICKNESS 0.94 M
VERTICAL THICKNESS 1.07 DIP ANGLE 29 LATITUDE 5546736.970 M DEPARTURE 639471.970 M ELEVATION 1425.840 M
RECEIVED: 00/00/00 WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
MM DD YY COMPOSITE: RECOVERY 0.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	0.00	0.00
ASH %	0.00	0.00
V.M. %	0.00	0.00
F.C. %	0.00	0.00
F.S.I.		
% TOTAL SULF.	0.00	0.00
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	0.
V.M. % (DAF)		0.0

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	0.0
TII - MAX. CONTRACTION TEMP.	DC	0.0
TIII - MAX. DILATATION TEMP.	DC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
0	0.0	TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID & RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

(0.0) -60M+ 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

Sample # 3

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM 4.S
VERTICAL THICKNESS 6.22 DIP ANGLE 25
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 251.49- 257.71 INTCPT THICKNESS 6.22 TRUE THICKNESS 5.64 M
LATITUDE 5546736.970 M DEPARTURE 659471.970 M ELEVATION 1376.310 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 71.6 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	73.60
ASH %	24.50	7.70
V.M. %	16.10	19.20
F.C. %	59.40	73.10
F.S.I.	2	5
% TOTAL SULF.	0.43	0.42
% P205 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7918.
V.M. % (DAF)		21.3

% (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	419.0
FUSION TEMP.	DC	450.0
MAX FLUID TEMP.	DC	459.0
FINAL FLUID TEMP.	DC	469.0
SOLIDIFICATION TEMP.	DC	485.0
MELTING RANGE	DC	19.0
MAXIMUM FLUIDITY DD/M		1.6

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	421.0
TII - MAX. CONTRACTION TEMP.	DC	470.0
TIII - MAX. DILATATION TEMP.	DC	470.0
CONTRACTION	%	16.0
DILATATION	%	-16.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES

TYPE	%
9	0.3
10	2.8
11	0.9
12	0.9
13	7.9
14	33.2

REACTIVE COMPONENTS		INERT COMPONENTS	
TOTAL VITRINOID	46.2	INERT SF. (1/2)	19.9
REACTIVE SF. (1/2)	20.0	MICRINOIDS	3.2
EXTINOID & RESIN	0.0	FUSINOIDS	6.4
		MINERAL MATTER	4.3
TOTAL REACTIVES	66.2	TOTAL INERTS	33.8

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.44
BAL. INDEX 2.38 STRENGTH INDEX 6.31 PRED. COKE STAB. INDEX 58.60

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	77.7	26.1	77.7	26.1
-28M + 60M	11.8	15.3	89.5	24.7
-60M + 0	10.5	15.8	100.0	23.7

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(77.7) -1/4'+28M	FLT.	1.30	16.7	4.2	7-1/2	16.7	4.2	77.3
		1.40	44.9	12.8	1-1/2	61.6	10.5	72.5
		1.50	12.9	18.9	1	74.5	11.9	21.3
		1.60	4.1	26.8	1	78.6	12.7	6.5
		1.70	1.1	33.7	1	79.7	13.0	
	SINK	1.70	20.3	77.8	NC	100.0	26.1	
(11.8) -28M+60M	FLT.	1.30	25.0	1.5	7-1/2	25.0	1.5	60.7
		1.40	29.5	5.3	6-1/2	54.5	3.6	62.1
		1.50	26.3	11.3	1-1/2	80.8	6.1	36.7
		1.60	6.7	23.5	1	87.5	7.4	10.0
		1.70	2.3	36.2	1	89.8	8.1	
	SINK	1.70	10.2	68.9	NC	100.0	14.3	
(10.5) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	23.7	1.9	7-1/2	23.7	1.9	68.4
		1.40	30.9	6.0	2	54.6	4.2	60.3
		1.50	17.2	13.6	1	71.8	6.3	29.7
		1.60	6.5	23.9	1	78.3	8.1	10.0
		1.70	1.5	35.6	1	79.8	8.6	
	SINK	1.70	20.2	80.5	NC	100.0	23.1	

FROTH CELL TEST

(11.8) -28M+60M	FROTH	0.0	0.0		0.0	0.0
	TAILINGS	0.0	0.0		0.0	0.0

FROTH CELL TEST

(10.5) -60M + 0	FROTH	95.3	13.1	6	95.3	13.1
	TAILINGS	4.7	71.6	NC	100.0	15.8

NOTES:

Sample #(4)

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM 3.5 INTERCEPT 277.77- 282.16 INTCPT THICKNESS 4.39 TRUE THICKNESS 3.95 M
VERTICAL THICKNESS 4.39 DIP ANGLE 26 LATITUDE 5546736.970 M DEPARTURE 659471.970 M ELEVATION 1350.230 M
RECEIVED: 00/00/00 WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
MM DD YY COMPOSITE: RECOVERY 68.1 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	64.80
ASH %	32.60	8.80
V.M. %	15.20	18.10
F.C. %	52.20	73.10
F.S.I.	2	6-1/2
% TOTAL SULF.	0.39	0.51
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7982.
V.M. % (DAF)		22.6

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	411.0
FUSION TEMP.	DC	437.0
MAX FLUID TEMP.	DC	466.0
FINAL FLUID TEMP.	DC	483.0
SOLIDIFICATION TEMP.	DC	493.0
MELTING RANGE	DC	46.0
MAXIMUM FLUIDITY DD/M		23.9

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	421.0
TII - MAX. CONTRACTION TEMP.	DC	404.0
TIII - MAX. DILATATION TEMP.	DC	404.0
CONTRACTION	%	12.0
DILATATION	%	-12.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1537

V-TYPES

TYPE	%
12	0.6
13	12.1
14	26.5
15	16.0
0	0.0
0	0.0

REACTIVE COMPONENTS	
TOTAL VITRINOID	55.2
REACTIVE SF. (1/2)	16.5
EXINOID & RESIN	0.0
TOTAL REACTIVES	71.7

INERT COMPONENTS	
INERT SF. (1/2)	16.5
MICRINOIDS	4.1
FUSINOIDS	2.7
MINERAL MATTER	5.0
TOTAL INERTS	28.3

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.45
BAL. INDEX 2.06 STRENGTH INDEX 6.67 PRED. COKE STAB. INDEX 57.20

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	84.6	32.5	84.6	32.5
-28M + 60M	8.7	15.5	93.3	30.9
-60M + 0	6.7	15.4	100.0	29.9

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(84.6) -1/4'+28M	FLT.	1.30	10.2	3.4	7-1/2	10.2	3.4	63.9
		1.40	33.1	9.3	1-1/2	43.3	7.9	70.2
		1.50	14.3	19.1	1	57.6	10.5	31.0
		1.60	6.5	29.5	1	64.3	12.4	14.7
		1.70	3.5	36.4	1	67.8	13.6	
	SINK	1.70	32.2	72.2	NC	100.0	32.5	
(8.7) -28M+60M	FLT.	1.30	27.5	1.6	7-1/2	27.5	1.6	71.8
		1.40	35.6	5.5	6-1/2	63.1	3.8	60.6
		1.50	17.7	13.8	1	80.8	5.9	25.9
		1.60	5.1	25.8	1	85.9	7.1	8.1
		1.70	2.0	37.7	1	87.9	7.8	
	SINK	1.70	12.1	71.1	NC	100.0	15.5	
(6.7) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	16.5	1.9	7-1/2	16.5	1.9	56.7
		1.40	24.4	6.6	6	40.9	4.7	61.9
		1.50	20.2	13.4	1	61.1	7.6	37.3
		1.60	6.7	23.3	1	67.8	9.1	15.3
		1.70	4.3	36.0	1	72.1	10.7	
	SINK	1.70	27.9	75.2	NC	100.0	28.7	
FROTH CELL TEST								
(8.7) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(6.7) -60M + 0	FROTH		94.8	12.8	5	94.8	12.8	
	TAILINGS		5.2	63.7	NC	100.0	15.4	

NOTES:

Sample #5

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM #3L
VERTICAL THICKNESS 2.77 DIP ANGLE 26
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 284.85- 287.62 INTCPT THICKNESS 2.77 TRUE THICKNESS 2.49 M
LATITUDE 3346736.970 M DEPARTURE 659471.970 M ELEVATION 1343.150 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 30.3 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	81.30
ASH %	14.10	7.90
V.M. %	17.90	19.20
F.C. %	68.00	72.90
F.S.I.	2	6-1/2
% TOTAL SULF.	0.37	0.38
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	7388.	7995.
V.M. % (DAF)		20.8

% (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	77.3	18.8	77.3	18.8
-28M + 60M	13.2	10.2	90.5	17.5
-60M + 0	9.5	11.5	100.0	17.0

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	412.0
FUSION TEMP.	DC	436.0
MAX FLUID TEMP.	DC	463.0
FINAL FLUID TEMP.	DC	486.0
SOLIDIFICATION TEMP.	DC	498.0
MELTING RANGE	DC	50.0
MAXIMUM FLUIDITY DD/M		60.1

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	423.0
TII - MAX. CONTRACTION TEMP.	DC	472.0
TIII - MAX. DILATATION TEMP.	DC	498.0
CONTRACTION	%	5.0
DILATATION	%	10.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1958

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
10	0.6	TOTAL VITRINOID	58.9	INERT SF. (1/2)	14.4
11	1.2	REACTIVE SF. (1/2)	14.5	MICRINOIDS	3.1
12	4.1	EXINOID & RESIN	0.0	FUSINOIDS	4.6
13	16.3	TOTAL REACTIVES	73.4	MINERAL MATTER	4.0
14	29.5			TOTAL INERTS	26.6
15	7.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.41
BAL. INDEX 1.37 STRENGTH INDEX 6.42 PRED. COKE STAB. INDEX 63.60

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(77.3) -1/4'+28M	FLT.	1.30	14.9	3.0	7-1/2	14.9	3.0	77.5
		1.40	51.0	9.2	1-1/2	65.9	7.8	76.2
		1.50	13.8	18.6	1	79.7	9.7	20.9
		1.60	4.0	28.6	1	83.7	10.6	6.2
		1.70	1.3	36.5	1	85.0	11.0	
	SINK	1.70	15.0	11.7	NC	100.0	11.1	
(13.2) -28M+60M	FLT.	1.30	46.9	1.6	7-1/2	46.9	1.6	84.4
		1.40	32.3	7.1	6-1/2	79.2	3.8	46.3
		1.50	11.1	17.3	1-1/2	90.3	5.5	14.3
		1.60	2.3	29.5	1	92.6	6.1	3.7
		1.70	1.2	38.4	1	93.8	6.5	
	SINK	1.70	6.2	65.5	NC	100.0	10.2	
(9.5) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	27.3	1.9	7-1/2	27.3	1.9	60.3
		1.40	31.2	6.7	6-1/2	58.5	4.5	53.6
		1.50	20.8	14.9	1	79.3	7.2	28.4
		1.60	6.7	30.9	1	86.0	9.0	7.9
		1.70	1.0	39.4	1	87.0	9.4	
	SINK	1.70	3.0	62.2	NC	90.0	11.2	
FROTH CELL TEST								
(13.2) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(9.5) -60M + 0	FROTH		93.9	8.3	B	93.9	8.3	
	TAILINGS		6.1	10.8	NC	100.0	8.5	

NOTES:

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM
VERTICAL THICKNESS 0.79 DIP ANGLE 27
RECEIVED: 00/00/00 HM DD YY

INTERCEPT 289.94- 290.73 INTCPT THICKNESS 0.79 TRUE THICKNESS 0.70 M
LATITUDE 5046736.970 M DEPARTURE 639471.970 M ELEVATION 1338.060 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 46.2 % HM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	0.00	0.00
ASH %	0.00	0.00
V.M. %	0.00	0.00
F.C. %	0.00	0.00
F.S.I.		
% TOTAL SULF.	0.00	0.00
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	0.
V.M. % (DAF)		0.0

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	OC	0.0
FUSION TEMP.	OC	0.0
MAX FLUID TEMP.	OC	0.0
FINAL FLUID TEMP.	OC	0.0
SOLIDIFICATION TEMP.	OC	0.0
MELTING RANGE	OC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	OC	0.0
TII - MAX. CONTRACTION TEMP.	OC	0.0
TIII - MAX. DILATATION TEMP.	OC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
		TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID & RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(0.0) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(0.0) -60M + 0	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	

NOTES:

Sample # 6

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM INTERCEPT 293.35- 293.90 INTCPT THICKNESS 0.55 TRUE THICKNESS 0.49 M
VERTICAL THICKNESS 0.55 DIP ANGLE 27 LATITUDE 3546736.970 M DEPARTURE 659471.970 M ELEVATION 1334.650 M
RECEIVED: 00/00/00 WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
MM DD YY COMPOSITE: RECOVERY 100.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	89.30
ASH %	13.00	8.30
V.M. %	18.60	19.70
F.C. %	68.40	72.00
F.S.I.	7-1/2	7-1/2
% TOTAL SULF.	0.47	0.50
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	7599.	7953.
V.M. % (DAF)		21.4

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	412.0
FUSION TEMP.	DC	434.0
MAX FLUID TEMP.	DC	469.0
FINAL FLUID TEMP.	DC	492.0
SOLIDIFICATION TEMP.	DC	500.0
MELTING RANGE	DC	58.0
MAXIMUM FLUIDITY DD/M		245.2

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	418.0
TII - MAX. CONTRACTION TEMP.	DC	448.0
TIII - MAX. DILATATION TEMP.	DC	494.0
CONTRACTION	%	23.0
DILATATION	%	58.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1554

V-TYPES

TYPE	%
11	1.3
12	1.3
13	10.0
14	36.0
15	17.3
16	0.7

REACTIVE COMPONENTS	
TOTAL VITRINOID	66.6
REACTIVE SF. (1/2)	11.3
EXINOID & RESIN	0.0
TOTAL REACTIVES	77.9

INERT COMPONENTS	
INERT SF. (1/2)	11.3
MICRINOIDS	1.8
FUSINOIDS	4.3
MINERAL MATTER	4.7
TOTAL INERTS	22.1

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.44
BAL. INDEX 2.14 STRENGTH INDEX 6.60 PRED. COKE STAB. INDEX 61.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	29.3	1.6	7-1/2	29.3	1.6	66.5
		1.40	34.5	7.0	7	63.8	4.5	61.5
		1.50	24.5	16.6	2	88.3	7.9	32.0
		1.60	6.2	31.0	1	94.5	9.4	8.0
		1.70	1.5	47.3	1	96.0	10.0	
	SINK	1.70	4.0	61.9	NC	100.0	12.2	
FROTH CELL TEST								
(0.0) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(0.0) -60M + 0	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	

NOTES:

Sample #7

PRINTED 02/09/82

DRILL HOLE: EV150 (CORE) SEAM M INTERCEPT 297.04- 297.80 INTCPT THICKNESS 0.76 TRUE THICKNESS 0.68 M
VERTICAL THICKNESS 0.76 DIP ANGLE 26 LATITUDE 5546736.970 M DEPARTURE 659471.970 M ELEVATION 1330.960 M
RECEIVED: 00/00/00 WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
MM DD YY COMPOSITE: RECOVERY 76.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	83.30
ASH %	14.40	7.60
V.M. %	18.90	21.70
F.C. %	66.70	70.70
F.S.I.	3-1/2	7
% TOTAL SULF.	0.48	0.53
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	7437.	8108.
V.M. % (DAF)		22.1

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	OC	387.0
FUSION TEMP.	OC	413.0
MAX FLUID TEMP.	OC	457.0
FINAL FLUID TEMP.	OC	491.0
SOLIDIFICATION TEMP.	OC	494.0
MELTING RANGE	OC	78.0
MAXIMUM FLUIDITY DD/M		992.4

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	OC	392.0
TII - MAX. CONTRACTION TEMP.	OC	430.0
TIII - MAX. DILATATION TEMP.	OC	483.0
CONTRACTION	%	22.0
DILATATION	%	129.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1356

V-TYPES

TYPE	%
11	1.2
12	13.6
13	32.0
14	14.8
0	0.0
0	0.0

REACTIVE COMPONENTS	
TOTAL VITRINOID	61.6
REACTIVE SF. (1/2)	12.8
EXINOID & RESIN	0.0
TOTAL REACTIVES	74.4

INERT COMPONENTS	
INERT SF. (1/2)	12.7
MICRINOIDS	2.9
FUSINOIDS	5.7
MINERAL MATTER	4.3
TOTAL INERTS	25.6

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.34
BAL. INDEX 1.36 STRENGTH INDEX 5.86 PRED. COKE STAB. INDEX 64.20

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	25.8	1.2	7-1/2	25.8	1.2	65.7
		1.40	35.8	6.2	7	61.6	4.1	60.0
		1.50	20.5	14.5	2	82.1	6.7	30.4
		1.60	8.0	27.0	1	90.1	8.5	12.5
		1.70	3.7	39.6	1	93.8	9.7	
	SINK	1.70	6.2	66.1	NC	100.0	13.2	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

(0.0) -60M+ 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

APPENDIX II A

Sample #(2)

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM 8.S
VERTICAL THICKNESS 4.36 DIP ANGLE 27
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 7.29- 11.65 INTCPT THICKNESS 4.36 TRUE THICKNESS 3.68 M
LATITUDE 5546876.130 M DEPARTURE 859152.130 M ELEVATION 1611.870 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 42.7 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	81.10
ASH %	17.70	6.10
V.M. %	23.20	25.30
F.C. %	59.10	68.60
F.S.I.	6-1/2	6-1/2
% TOTAL SULF.	0.38	0.35
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	7750.	8056.
V.M. % (DAF)		28.2

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	408.0
FUSION TEMP.	DC	430.0
MAX FLUID TEMP.	DC	458.0
FINAL FLUID TEMP.	DC	468.0
SOLIDIFICATION TEMP.	DC	487.0
MELTING RANGE	DC	38.0
MAXIMUM FLUIDITY DD/M		9.8

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	413.0
TII - MAX. CONTRACTION TEMP.	DC	455.0
TIII - MAX. DILATATION TEMP.	DC	455.0
CONTRACTION	%	12.0
DILATATION	%	-12.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1339

V-TYPES

TYPE	%
10	20.9
11	34.1
12	5.7
13	1.9
14	0.6
0	0.0

REACTIVE COMPONENTS

TOTAL VITRINOID	63.2
REACTIVE SF. (1/2)	12.4
EXINOID & RESIN	0.7
TOTAL REACTIVES	76.3

INERT COMPONENTS

INERT SF. (1/2)	12.3
MIDRINOIDS	1.7
FUSINOIDS	6.2
MINERAL MATTER	3.5
TOTAL INERTS	23.7

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.13
BAL. INDEX 0.83 STRENGTH INDEX 4.39 FRED. COKE STAB. INDEX 60.30

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	39.0	2.1	7	39.0	2.1	80.3
		1.40	30.3	5.6	5	69.3	3.6	47.3
		1.50	10.5	14.7	1	79.8	5.1	17.0
		1.60	4.2	29.1	1	84.0	6.3	7.5
		1.70	2.3	42.2	1	86.3	7.2	
	SINK	1.70	13.7	75.8	NC	100.0	16.6	

FROTH CELL TEST

(0.0) 28M+60M	FROTH	0.0	0.0		0.0	0.0
	TAILINGS	0.0	0.0		0.0	0.0

FROTH CELL TEST

(0.0) -60M + 0	FROTH	0.0	0.0		0.0	0.0
	TAILINGS	0.0	0.0		0.0	0.0

NOTES:

Sample #9

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM #3L
VERTICAL THICKNESS 4.15 DIP ANGLE 27
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 17.01- 21.16 INTCPT THICKNESS 4.15 TRUE THICKNESS 3.70 M
LATITUDE 5946876.130 M DEPARTURE 659152.130 M ELEVATION 1602.150 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 41.9 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	35.00
ASH %	50.80	8.50
V.M. %	16.10	25.90
F.C. %	33.10	65.60
F.S.I.	5-1/2	7
% TOTAL SULF.	0.41	0.62
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7901.
V.M. % (DAF)		32.7

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY: DATE RUN 00/00/00

START	DC	398.0
FUSION TEMP.	DC	416.0
MAX FLUID TEMP.	DC	451.0
FINAL FLUID TEMP.	DC	480.0
SOLIDIFICATION TEMP.	DC	483.0
MELTING RANGE	DC	64.0
MAXIMUM FLUIDITY DD/M		435.9

DILATATION (RUHR) DATE RUN 00/00/00

II - SOFT. TEMP.	DC	399.0
III - MAX. CONTRACTION TEMP.	DC	440.0
IIII - MAX. DILATATION TEMP.	DC	430.0
CONTRACTION	%	22.0
DILATATION	%	82.0

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1560

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
9	1.3	TOTAL VITRINOID	67.1	INERT SF. (1/2)	10.5
10	18.5	REACTIVE SF. (1/2)	10.7	MICRINOIDS	2.7
11	39.3	EXINOID & RESIN	0.3	FUSINOIDS	3.8
12	6.0			MINERAL MATTER	4.7
13	2.0	TOTAL REACTIVES	78.1	TOTAL INERTS	21.9
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.13
BAL. INDEX 0.73 STRENGTH INDEX 4.37 PRED. COKE STAB. INDEX 59.80

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	15.0	2.7	7-1/2	15.0	2.7	61.9
		1.40	11.3	7.7	7	26.3	4.8	43.1
		1.50	7.0	15.0	4-1/2	33.3	7.0	28.9
		1.60	4.0	24.1	3	37.3	8.8	21.6
		1.70	5.2	41.7	1	42.5	12.8	
	SINK	1.70	57.5	81.9	NC	100.0	52.5	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

(0.0) -60M+ 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

Sample # (10)

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM
VERTICAL THICKNESS 0.91 DIP ANGLE 27
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 29.27- 30.18 INTCPT THICKNESS 0.91 TRUE THICKNESS 0.81 M
LATITUDE 3046076.130 M DEPARTURE 659152.130 M ELEVATION 1389.890 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00 MM DD YY
COMPOSITE: RECOVERY 100.0 %

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	72.10
ASH %	23.80	7.60
V.M. %	21.20	25.10
F.C. %	55.00	67.30
F.S.I.	6	7-1/2
% TOTAL SULF.	0.72	0.94
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	8056.
V.M. % (DAF)		27.8

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

GIESELER PLASTICITY, DATE RUN 00/00/00

START	OC	338.0
FUSION TEMP.	OC	416.0
MAX FLUID TEMP.	OC	452.0
FINAL FLUID TEMP.	OC	482.0
SOLIDIFICATION TEMP.	OC	489.0
MELTING RANGE	OC	66.0
MAXIMUM FLUIDITY DD/M		463.4

DILATATION (RUHR) DATE RUN 00/00/00

II - SOFT. TEMP.	OC	393.0
III - MAX. CONTRACTION TEMP.	OC	434.0
IIII - MAX. DILATATION TEMP.	OC	475.0
CONTRACTION	%	24.0
DILATATION	%	122.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
		TOTAL VITRINOID	75.9	INERT SF. (1/2)	7.4
9	2.3	REACTIVE SF. (1/2)	7.4	MICRINOIDS	1.0
10	6.1	EXINOID & RESIN	0.6	FUSINOIDS	3.3
11	35.6			MINERAL MATTER	4.4
12	31.9	TOTAL REACTIVES	23.9	TOTAL INERTS	16.1
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.17
BAL. INDEX 0.55 STRENGTH INDEX 4.45 PRED. COKE STAB. INDEX 58.70

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0)	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
-1/4'+28M		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0)	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
-28M+60M		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0)	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
-60M+ 0		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0)	FLT.	1.30	39.9	2.9	8	39.9	2.9	73.0
-1/8'+ 0		1.40	18.4	7.9	7	58.3	4.0	37.9
		1.50	11.9	18.6	3-1/2	70.2	6.9	23.3
		1.60	6.7	29.3	3-1/2	76.9	8.8	12.1
		1.70	3.0	41.6	1	79.9	10.1	
	SINK	1.70	20.1	70.5	NC	100.0	22.2	

FROTH CELL TEST						
(0.0) -28M+60M	FROTH	0.0	0.0		0.0	0.0
	TAILINGS	0.0	0.0		0.0	0.0
FROTH CELL TEST						
(0.0) -60M + 0	FROTH	0.0	0.0		0.0	0.0
	TAILINGS	0.0	0.0		0.0	0.0

NOTES:

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM
VERTICAL THICKNESS 0.28 DIP ANGLE 27
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 35.24- 35.52 INTCPT THICKNESS 0.28 TRUE THICKNESS 0.25 M
LATITUDE 3546876.130 M DEPARTURE 659152.130 M ELEVATION 1383.920 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 0.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	0.00	0.00
ASH %	0.00	0.00
V.M. %	0.00	0.00
F.C. %	0.00	0.00
F.S.I.		
% TOTAL SULF.	0.00	0.00
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	0.
V.M. % (DAF)		0.0

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

II - SOFT. TEMP.	DC	0.0
III - MAX. CONTRACTION TEMP.	DC	0.0
IIII - MAX. DILATATION TEMP.	DC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
		TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID & RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

(0.0) -60M + 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

Sample # (11)

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM
VERTICAL THICKNESS 0.70 DIP ANGLE 29
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 44.18- 44.88 INTCPT THICKNESS 0.70 TRUE THICKNESS 0.61 M
LATITUDE 5546876.130 M DEPARTURE 659152.130 M ELEVATION 1374.980 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00 MM DD YY
COMPOSITE: RECOVERY 65.2 %

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	72.00
ASH %	20.40	8.70
V.M. %	20.60	24.30
F.C. %	59.00	67.00
F.S.I.	7	7-1/2
% TOTAL SULF.	0.80	0.84
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7861.
V.M. % (DAF)		25.9

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	399.0
TII - MAX. CONTRACTION TEMP.	DC	431.0
TIII - MAX. DILATATION TEMP.	DC	476.0
CONTRACTION	%	22.0
DILATATION	%	101.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
9	0.7	TOTAL VITRINOID	72.9	INERT SF. (1/2)	7.7
10	2.1	REACTIVE SF. (1/2)	7.7	MICRINOIDS	2.3
11	16.0	EXINOID & RESIN	0.0	FUSINOIDS	4.4
12	48.2			MINERAL MATTER	5.0
13	5.2	TOTAL REACTIVES	80.6	TOTAL INERTS	19.4
14	0.7				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.74 STRENGTH INDEX 4.77 PRED. COKE STAB. INDEX 61.90

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE DATE RUN 00/00/00

		S.G.	DIRECT WT.	DIRECT ASH	FSI	CUM. WT.	CUM. ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE DATE RUN 00/00/00

		S.G.	DIRECT WT.	DIRECT ASH	FSI	CUM. WT.	CUM. ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	36.8	2.9	8	36.8	2.9	65.4
		1.40	17.9	8.9	7-1/2	54.7	4.9	39.4
		1.50	14.2	17.2	4	68.9	7.4	28.0
		1.60	9.2	28.4	2	78.1	9.9	17.6
		1.70	5.5	38.7	1	83.6	11.8	
	SINK	1.70	16.4	64.0	NC	100.0	20.3	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

(0.0) -60M + 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

Sample # (12)

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM
VERTICAL THICKNESS 0.61 DIP ANGLE 27
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 64.63- 65.24 INTCPT THICKNESS 0.61 TRUE THICKNESS 0.53 M
LATITUDE 5546876.130 M DEPARTURE 659152.130 M ELEVATION 1534.530 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00 MM DD YY
COMPOSITE: RECOVERY 85.0 %

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	77.90
ASH %	19.90	6.10
V.M. %	20.90	24.70
F.C. %	59.20	69.20
F.S.I.	7-1/2	8
% TOTAL SULF.	0.90	1.07
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	6974.	811.
V.M. % (DAF)		26.1

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	OC	0.0
FUSION TEMP.	OC	0.0
MAX FLUID TEMP.	OC	0.0
FINAL FLUID TEMP.	OC	0.0
SOLIDIFICATION TEMP.	OC	0.0
MELTING RANGE	OC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	OC	403.0
TII - MAX. CONTRACTION TEMP.	OC	438.0
TIII - MAX. DILATATION TEMP.	OC	471.0
CONTRACTION	%	17.0
DILATATION	%	93.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1561

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
9	0.8	TOTAL VITRINOID	76.2	INERT SF. (1/2)	8.0
10	5.3	REACTIVE SF. (1/2)	8.1	MICRINOIDS	1.4
11	35.8	EXINOID & RESIN	0.0	FUSINOIDS	2.7
12	34.3			MINERAL MATTER	3.6
		TOTAL REACTIVES	84.3	TOTAL INERTS	15.7
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.18
BAL. INDEX 0.54 STRENGTH INDEX 4.48 PRED. COKE STAB. INDEX 59.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	51.0	2.1	8	51.0	2.1	76.7
		1.40	14.7	3.4	8	65.7	3.5	30.9
		1.50	11.8	15.7	5-1/2	77.5	5.4	20.2
		1.60	5.5	29.4	1	83.0	7.0	9.6
		1.70	2.7	40.5	1	85.7	8.0	
	SINK	1.70	14.3	74.0	NC	100.0	17.5	
FROTH CELL TEST								
(0.0) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(0.0) -60M + 0	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	

NOTES:

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM
VERTICAL THICKNESS 0.32 DIP ANGLE 24
RECEIVED: 00/00/00 HM DD YY

INTERCEPT 67.48- 70.00 INTCPT THICKNESS 0.52 TRUE THICKNESS 0.48 M
LATITUDE 3944876.130 M DEPARTURE 659102.130 M ELEVATION 1049.680 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 100.0 % HM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	0.00	0.00
ASH %	0.00	0.00
V.M. %	0.00	0.00
F.C. %	0.00	0.00
F.S.I.		
% TOTAL SULF.	0.00	0.00
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	0.
V.M. % (DAF)		0.0

% (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	GC	0.0
FUSION TEMP.	GC	0.0
MAX FLUID TEMP.	GC	0.0
FINAL FLUID TEMP.	GC	0.0
SOLIDIFICATION TEMP.	GC	0.0
MELTING RANGE	GC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

II - SOFT. TEMP.	GC	0.0
III - MAX. CONTRACTION TEMP.	GC	0.0
IIII - MAX. DILATATION TEMP.	GC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
		TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID & RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

(0.0) -60M+ 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

Sample # 13

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM 7.S INTERCEPT 82.20- 85.43 INTCPT THICKNESS 3.23 TRUE THICKNESS 2.95 M
VERTICAL THICKNESS 3.23 DIP ANGLE 24 LATITUDE 5546876.130 M DEPARTURE 657152.130 M ELEVATION 1536.960 M
RECEIVED: 00/00/00 WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
MM DD YY COMPOSITE: RECOVERY 39.6 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	74.90
ASH %	21.60	9.30
V.M. %	21.00	22.20
F.C. %	57.40	68.50
F.S.I.	6	7
% TOTAL SULF.	362.00	0.60
% P205 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	7281.	7657.
V.M. % (DAF)		26.8

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	403.0
FUSION TEMP.	DC	423.0
MAX FLUID TEMP.	DC	456.0
FINAL FLUID TEMP.	DC	481.0
SOLIDIFICATION TEMP.	DC	492.0
MELTING RANGE	DC	58.0
MAXIMUM FLUIDITY DD/M		175.4

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	410.0
TII - MAX. CONTRACTION TEMP.	DC	453.0
TIII - MAX. DILATATION TEMP.	DC	482.0
CONTRACTION	%	18.0
DILATATION	%	28.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1562

V-TYPES TYPE	%
10	6.5
11	30.3
12	15.5
13	2.7
14	0.5
0	0.0

REACTIVE COMPONENTS	
TOTAL VITRINOID	53.5
REACTIVE SF. (1/2)	13.6
EXINOID & RESIN	0.6
TOTAL REACTIVES	69.7

INERT COMPONENTS	
INERT SF. (1/2)	13.5
MICRINOIDS	4.5
FUSINOIDS	7.0
MINERAL MATTER	5.3
TOTAL INERTS	30.3

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.18
BAL. INDEX 1.23 STRENGTH INDEX 4.34 PRED. COKE STAB. INDEX 59.50

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

SIZE		S.G.	DIRECT WT.	DIRECT ASH	FSI	CUM. WT.	CUM. ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

SIZE		S.G.	DIRECT WT.	DIRECT ASH	FSI	CUM. WT.	CUM. ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	24.6	3.3	8	24.6	3.3	56.6
		1.40	23.1	8.1	6	47.7	5.6	57.5
		1.50	25.4	11.0	2-1/2	73.1	8.5	40.5
		1.60	8.7	27.5	1	81.8	10.6	13.3
		1.70	2.5	38.8	1	84.3	11.4	
	SINK	1.70	15.7	82.2	NC	100.0	22.5	
FROTH CELL TEST (0.0) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST (0.0) -60M + 0	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	

NOTES:

X

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM
VERTICAL THICKNESS 0.49 DIP ANGLE 31
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 88.72- 89.21 INTERPT THICKNESS 0.49 TRUE THICKNESS 0.42 M
LATITUDE 5846976.130 M DEPARTURE 659152.130 M ELEVATION 1330.440 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00 MM DD YY
COMPOSITE: RECOVERY 100.0 %

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	0.00	0.00
ASH %	0.00	0.00
V.M. %	0.00	0.00
F.C. %	0.00	0.00
F.S.I.		
% TOTAL SULF.	0.00	0.00
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	0.
V.M. % (DAF)		0.0
% (-1/8'+0 COAL FLOATED AT 1.50 S.G.)		

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	0.0
TII - MAX. CONTRACTION TEMP.	DC	0.0
TIII - MAX. DILATATION TEMP.	DC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
0	0.0	TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID & RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (NO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
FROTH CELL TEST (0.0) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST (0.0) -60M + 0	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	

NOTES:

Sample # 14

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM
VERTICAL THICKNESS 1.25 DIP ANGLE 31
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 97.59- 98.84 INTCPT THICKNESS 1.25 TRUE THICKNESS 1.07 M
LATITUDE 5546876.130 M DEPARTURE 659152.130 M ELEVATION 1521.570 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 100.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	82.30
ASH %	15.30	8.50
V.M. %	18.60	20.00
F.C. %	66.10	71.50
F.S.I.	2-1/2	3
% TOTAL SULF.	0.60	0.69
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	7160.	7228.
V.M. % (DAF)		22.0

% (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	0.0
TII - MAX. CONTRACTION TEMP.	DC	0.0
TIII - MAX. DILATATION TEMP.	DC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1543

V-TYPES

TYPE	%
10	3.4
11	12.2
12	16.0
13	7.6
14	3.0
0	0.0

REACTIVE COMPONENTS	
TOTAL VITRINOID	42.2
REACTIVE SF. (1/2)	18.5
EXINOID & RESIN	0.0
TOTAL REACTIVES	60.7

INERT COMPONENTS	
INERT SF. (1/2)	18.4
MICRINOIDS	4.3
FUSINOIDS	11.7
MINERAL MATTER	4.9
TOTAL INERTS	39.3

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.22
BAL. INDEX 2.04 STRENGTH INDEX 4.71 PRED. COKE STAB. INDEX 50.50

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	22.8	2.4	8	22.8	2.4	63.5
		1.40	34.9	6.7	2-1/2	57.7	5.0	62.9
		1.50	22.3	15.3	1	80.0	7.9	34.3
		1.60	8.9	27.7	1	88.9	9.9	12.0
		1.70	2.0	41.7	1	90.9	10.6	
	SINK	1.70	9.1	71.1	NC	100.0	16.1	

		DIRECT % WT.	DIRECT % ASH	CUM. % WT.	CUM. % ASH
FROTH CELL TEST (0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0
FROTH CELL TEST (0.0) -60M + 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

Sample #15

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM 6.S
VERTICAL THICKNESS 0.91 DIP ANGLE 25
RECEIVED: 00/00/00 HH DD YY

INTERCEPT 167.82- 170.73 INTCPT THICKNESS 0.91 TRUE THICKNESS 0.82 M
LATITUDE 5346876.130 M DEPARTURE 639152.130 M ELEVATION 1449.340 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 80.0 % HH DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	37.40
ASH %	41.30	8.50
V.M. %	17.10	21.70
F.C. %	75.80	69.80
F.S.I.	4	8-1/2
% TOTAL SULF.	0.63	0.81
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7935.
V.M. % (DAF)		16.4

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	CC	417.0
FUSION TEMP.	CC	442.0
MAX FLUID TEMP.	CC	459.0
FINAL FLUID TEMP.	CC	471.0
SOLIDIFICATION TEMP.	CC	493.0
MELTING RANGE	CC	29.0
MAXIMUM FLUIDITY DD/M		3

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	CC	418.0
TII - MAX. CONTRACTION TEMP.	CC	445.0
TIII - MAX. DILATATION TEMP.	CC	445.0
CONTRACTION	%	2.0
DILATATION	%	-2.0

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 1364

V-TYPES TYPE	%
7	1.0
8	2.5
9	2.5
10	6.6
11	14.7
12	23.6

REACTIVE COMPONENTS	
TOTAL VITRINOID	50.9
REACTIVE SF. (1/2)	16.1
EXINOID & RESIN	0.0
TOTAL REACTIVES	67.0

INERT COMPONENTS	
INERT SF. (1/2)	16.1
MICRINOIDS	3.9
FUSINOIDS	8.1
MINERAL MATTER	4.9
TOTAL INERTS	33.0

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.16
BAL. INDEX 1.45 STRENGTH INDEX 4.45 FRED. COKE STAB. INDEX 56.10

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	12.2	2.5	8-1/2	12.2	2.5	53.2
		1.40	13.4	6.5	7	25.6	4.6	44.9
		1.50	8.2	14.5	5	33.8	7.0	34.9
		1.60	8.6	24.7	1	42.4	10.6	29.7
		1.70	5.7	36.6	1	48.1	13.7	
	SINK	1.70	51.9	73.6	NC	100.0	44.8	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

(0.0) -60M+ 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

Sample # 16

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM S.S
VERTICAL THICKNESS 2.41 DIP ANGLE 20
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 216.55- 218.96 INTCPT THICKNESS 2.41 TRUE THICKNESS 2.26 M
LATITUDE 5346876.130 M DEPARTURE 659152.130 M ELEVATION 1402.610 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 0.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	43.80
ASH %	41.40	8.20
V.M. %	14.40	20.20
F.C. %	44.20	71.60
F.S.I.	1-1/2	7
% TOTAL SULF.	0.44	0.54
% P205 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7905.
V.M. % (DAF)		24.6

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	418.0
FUSION TEMP.	DC	439.0
MAX FLUID TEMP.	DC	463.0
FINAL FLUID TEMP.	DC	481.0
SOLIDIFICATION TEMP.	DC	494.0
MELTING RANGE	DC	48.0
MAXIMUM FLUIDITY DD/M		19.7

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	418.0
TII - MAX. CONTRACTION TEMP.	DC	445.0
TIII - MAX. DILATATION TEMP.	DC	445.0
CONTRACTION	%	7.0
DILATATION	%	-7.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
0	0.0	TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID & RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 FRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	14.4	3.2	7-1/2	14.4	3.2	64.2
		1.40	19.2	8.9	2-1/2	33.6	6.5	51.6
		1.50	7.9	20.1	1	41.5	9.1	24.3
		1.60	4.8	32.6	1	46.3	11.5	20.7
		1.70	6.0	44.3	1	52.3	15.3	
	SINK	1.70	47.7	71.4	NC	100.0	42.0	

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	17.5	2.2	8	17.5	2.2	61.7
		1.40	14.3	6.6	5	31.8	4.2	48.5
		1.50	10.7	14.3	1	42.5	6.7	31.5
		1.60	5.5	22.4	1	48.0	8.5	17.5
		1.70	3.5	33.8	1	51.5	10.2	
	SINK	1.70	48.5	70.4	NC	100.0	39.4	

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -28M+60M	FLT.	1.30	44.3	1.8	9	44.3	1.8	78.0
		1.40	19.9	6.5	7	64.2	3.3	38.0
		1.50	11.4	15.6	1-1/2	75.6	5.1	18.7
		1.60	4.0	25.5	1	79.6	6.1	8.1
		1.70	2.7	37.6	1	82.3	7.2	
	SINK	1.70	17.7	67.1	NC	100.0	17.8	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

FROTH CELL TEST							
(0.0) -28M+60M	FROTH	0.0	0.0		0.0	0.0	
	TAILINGS	0.0	0.0		0.0	0.0	

(0.0) -60M+ 0	FLT. 1.30	0.0	0.0	0.0	0.0	0.0	0.0
	1.40	0.0	0.0	0.0	0.0	0.0	0.0
	1.50	0.0	0.0	0.0	0.0	0.0	0.0
	1.60	0.0	0.0	0.0	0.0	0.0	0.0
	1.70	0.0	0.0	0.0	0.0		
	SINK 1.70	0.0	0.0	0.0	0.0		

FROTH CELL TEST							
(0.0) -60M + 0	FROTH	0.0	0.0		0.0	0.0	
	TAILINGS	0.0	0.0		0.0	0.0	

NOTES:

Sample # 17

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM 5.5
VERTICAL THICKNESS 13.85 DIP ANGLE 20
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 218.95- 232.81 INTCPT THICKNESS 13.85 TRUE THICKNESS 13.02 M
LATITUDE 5346876.130 M DEPARTURE 639152.130 M ELEVATION 1400.200 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 81.4 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	69.00
ASH %	22.90	8.30
V.M. %	17.60	21.50
F.C. %	59.50	70.20
F.S.I.	2-1/2	6
% TOTAL SULF.	0.27	0.35
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7925.
V.M. % (DAF)		22.8

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	422.0
FUSION TEMP.	DC	440.0
MAX FLUID TEMP.	DC	467.0
FINAL FLUID TEMP.	DC	482.0
SOLIDIFICATION TEMP.	DC	493.0
MELTING RANGE	DC	42.0
MAXIMUM FLUIDITY DD/M		73

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	418.0
TII - MAX. CONTRACTION TEMP.	DC	463.0
TIII - MAX. DILATATION TEMP.	DC	463.0
CONTRACTION	%	11.0
DILATATION	%	-11.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES

TYPE	%
11	1.6
12	7.9
13	29.9
14	11.0
15	2.1
0	0.0

REACTIVE COMPONENTS		INERT COMPONENTS	
TOTAL VITRINOID	52.5	INERT SF. (1/2)	15.9
REACTIVE SF. (1/2)	15.9	MICRINOIDS	4.3
EXINOID & RESIN	0.0	FUSINOIDS	6.7
		MINERAL MATTER	4.7
TOTAL REACTIVES	68.4	TOTAL INERTS	31.6

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.35
BAL. INDEX 1.87 STRENGTH INDEX 3.84 PRED. COKE STAB. INDEX 60.30

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	87.1	22.0	87.1	22.0
-28M + 60M	8.1	12.2	95.2	21.2
-60M + 0	4.8	14.4	100.0	20.8

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(87.1) -1/4'+28M	FLT.	1.30	14.3	3.9	7	14.3	3.9	69.2
		1.40	41.9	9.7	1-1/2	56.2	8.2	68.2
		1.50	13.5	19.1	1	69.7	10.3	25.0
		1.60	6.8	26.9	1	76.5	11.6	14.2
		1.70	4.7	33.0	1	81.2	13.0	
	SINK	1.70	18.8	60.5	NC	100.0	22.0	
(8.1) -28M+60M	FLT.	1.30	41.4	2.0	9	41.4	2.0	79.2
		1.40	30.7	6.9	6	72.1	4.1	48.5
		1.50	13.4	15.7	1-1/2	85.5	5.9	19.1
		1.60	4.0	28.2	1	89.5	6.9	6.0
		1.70	1.5	36.1	1	91.0	7.4	
	SINK	1.70	9.0	61.4	NC	100.0	12.2	
(4.8) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	22.0	2.2	9	22.0	2.2	62.2
		1.40	25.6	6.7	3-1/2	47.6	4.6	56.7
		1.50	17.8	14.7	1-1/2	65.4	7.4	32.2
		1.60	6.8	25.9	1	72.2	9.1	14.5
		1.70	4.3	33.2	1	76.5	10.5	
	SINK	1.70	23.5	69.8	NC	100.0	24.4	
(8.1) -28M+60M	FROTH CELL TEST							
	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
(4.8) -60M + 0	FROTH CELL TEST							
	FROTH		92.3	10.7	6-1/2	92.3	10.7	
	TAILINGS		7.7	58.3	NC	100.0	14.4	

NOTES:

Sample # 18

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM INTERCEPT 326.92- 327.56 INTCPT THICKNESS 0.64 TRUE THICKNESS 0.58 M
VERTICAL THICKNESS 0.64 DIP ANGLE 24 LATITUDE 5546076.130 M DEPARTURE 659152.130 M ELEVATION 1292.240 M
RECEIVED: 00/00/00 WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
MM DD YY COMPOSITE: RECOVERY 100.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)	RAW	*CLEAN
% OF 1/8' X 0	100.00	44.00
ASH %	37.90	6.40
V.M. %	14.20	19.20
F.C. %	47.90	74.40
F.S.I.	1	6
% TOTAL SULF.	0.39	0.58
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	8154.
V.M. % (DAF)		22.9

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

SIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	410.0
III - MAX. CONTRACTION TEMP.	DC	456.0
IIII - MAX. DILATATION TEMP.	DC	436.0
CONTRACTION	%	14.0
DILATATION	%	-14.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
12	1.5	TOTAL VITRINOID	49.3	INERT SF. (1/2)	17.4
13	8.9	REACTIVE SF. (1/2)	17.5	MICRINOIDS	3.7
14	35.0	EXINOID & RESIN	0.0	FUSINOIDS	8.4
15	3.9			MINERAL MATTER	3.7
0	0.0	TOTAL REACTIVES	66.8	TOTAL INERTS	33.2
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.43
BAL. INDEX 2.46 STRENGTH INDEX 6.55 PRED. COKE STAB. INDEX 59.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	12.8	1.7	8-1/2	12.8	1.7	62.5
		1.40	19.7	5.8	2	32.5	4.2	58.1
		1.50	10.5	13.6	1	43.0	6.5	28.8
		1.60	4.5	27.0	1	47.5	8.4	17.3
		1.70	4.5	37.9	1	52.0	11.0	
	SINK	1.70	48.0	78.3	NC	100.0	43.3	
FROTH CELL TEST								
(0.0) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(0.0) -60M + 0	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	

NOTES:

Sample #19

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM 4.S
VERTICAL THICKNESS 5.19 DIP ANGLE 24
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 328.26- 333.45 INTCPT THICKNESS 5.19 TRUE THICKNESS 4.74 M
LATITUDE 5346876.130 M DEPARTURE 659152.130 M ELEVATION 1290.900 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00 MM DD YY
COMPOSITE: RECOVERY 79.4 %

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	76.60
ASH %	19.10	7.40
V.M. %	16.40	19.50
F.C. %	64.50	73.10
F.S.I.	3	3-1/2
% TOTAL SULF.	0.39	0.43
% P205 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	6894.	8009.
V.M. % (DAF)		20.3

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	414.0
FUSION TEMP.	DC	440.0
MAX FLUID TEMP.	DC	467.0
FINAL FLUID TEMP.	DC	480.0
SOLIDIFICATION TEMP.	DC	493.0
MELTING RANGE	DC	40.0
MAXIMUM FLUIDITY DD/M		7.7

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	417.0
TII - MAX. CONTRACTION TEMP.	DC	459.0
TIII - MAX. DILATATION TEMP.	DC	439.0
CONTRACTION	%	17.0
DILATATION	%	-17.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES

TYPE	%
9	0.5
10	2.0
12	6.8
13	12.4
14	18.8
15	8.9

REACTIVE COMPONENTS	
TOTAL VITRINOID	49.4
REACTIVE SF. (1/2)	19.0
EXINOID & RESIN	0.0
TOTAL REACTIVES	68.4

INERT COMPONENTS	
INERT SF. (1/2)	18.9
MICRINOIDS	3.3
FUSINOIDS	3.3
MINERAL MATTER	4.1
TOTAL INERTS	31.6

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.40
BAL. INDEX 2.06 STRENGTH INDEX 6.15 PRED. COKE STAB. INDEX 59.50

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	8.2	9.6	8.2	9.6
-60M + 0	6.4	10.8	14.6	10.1

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	12.5	2.8	7-1/2	12.5	2.8	76.7
		1.40	51.9	8.2	2-1/2	64.4	7.2	76.2
		1.50	12.1	18.7	1	76.5	9.0	20.6
		1.60	5.2	29.8	1	81.7	10.3	8.9
		1.70	2.3	36.3	1	84.0	11.0	
	SINK	1.70	16.0	76.1	NC	100.0	21.4	
(8.2) -28M+60M	FLT.	1.30	50.5	1.5	9	50.5	1.5	79.0
		1.40	24.4	6.8	4-1/2	74.9	3.2	39.9
		1.50	13.4	13.7	1	88.3	4.8	18.4
		1.60	4.0	24.9	1	92.3	5.7	6.9
		1.70	2.5	36.4	1	94.8	6.5	
	SINK	1.70	5.2	66.2	NC	100.0	9.6	
(6.4) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	23.1	1.6	9	23.1	1.6	61.1
		1.40	28.6	4.4	4	51.7	3.0	56.1
		1.50	20.9	11.0	1	72.6	5.3	34.4
		1.60	8.2	21.3	1	80.8	7.0	14.2
		1.70	3.8	31.4	1	84.6	8.1	
	SINK	1.70	15.4	70.8	NC	100.0	17.7	
FROTH CELL TEST (8.2) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST (6.4) -60M + 0	FROTH		61.0	7.4	7	61.0	7.4	
	TAILINGS		39.0	16.0	3-1/2	100.0	10.8	

NOTES:

Sample #20

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM 3.S
VERTICAL THICKNESS 3.90 DIP ANGLE 24
RECEIVED: 00/00/00 NM DD YY

INTERCEPT 353.72- 357.62 INTCPT THICKNESS 3.90 TRUE THICKNESS 3.56 M
LATITUDE 5546876.130 M DEPARTURE 659152.130 M ELEVATION 1265.440 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00 NM DD YY
COMPOSITE: RECOVERY 88.3 %

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	60.80
ASH %	32.30	9.50
V.M. %	14.50	18.60
F.C. %	53.20	71.90
F.S.I.	2	7
% TOTAL SULF.	0.31	0.42
% P205 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	7883.
V.M. % (DAF)		21.4

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	416.0
FUSION TEMP.	DC	434.0
MAX FLUID TEMP.	DC	468.0
FINAL FLUID TEMP.	DC	486.0
SOLIDIFICATION TEMP.	DC	500.0
MELTING RANGE	DC	52.0
MAXIMUM FLUIDITY DD/M		31.8

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	419.0
TII - MAX. CONTRACTION TEMP.	DC	462.0
TIII - MAX. DILATATION TEMP.	DC	477.0
CONTRACTION	%	15.0
DILATATION	%	5.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%
11	0.5
12	1.1
13	6.8
14	32.0
15	12.1
0	0.0

REACTIVE COMPONENTS		INERT COMPONENTS	
TOTAL VITRINOID	52.5	INERT SF. (1/2)	13.6
REACTIVE SF. (1/2)	15.7	MICRINOIDS	4.7
EXINOID & RESIN	0.0	FUSINOIDS	6.2
		MINERAL MATTER	5.3
TOTAL REACTIVES	68.2	TOTAL INERTS	31.8

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.44
BAL. INDEX 2.42 STRENGTH INDEX 6.65 PRED. COKE STAB. INDEX 59.40

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	83.1	33.8	83.1	33.8
-28M + 60M	9.1	17.9	92.2	32.2
-60M + 0	7.8	19.0	100.0	31.2

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(83.1) -1/4'+28M	FLT.	1.30	11.7	3.4	7-1/2	11.7	3.4	63.7
		1.40	30.9	9.9	2	42.6	8.1	69.8
		1.50	15.8	19.9	1	58.4	11.3	31.8
		1.60	5.5	29.4	1	63.9	12.9	12.7
		1.70	3.0	39.5	1	66.9	14.1	
	SINK	1.70	33.1	73.8	NC	100.0	33.8	
(9.1) -28M+60M	FLT.	1.30	37.2	2.3	8	37.2	2.3	71.8
		1.40	24.2	7.8	6-1/2	61.4	4.5	43.2
		1.50	12.7	13.9	1-1/2	74.1	6.1	24.4
		1.60	8.2	22.1	1	82.3	7.7	13.3
		1.70	3.2	28.7	1	85.5	8.5	
	SINK	1.70	14.5	73.2	NC	100.0	17.9	
(7.8) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
FROTH CELL TEST (9.1) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST (7.8) -60M + 0	FROTH		51.1	12.5	6	51.1	12.5	
	TAILINGS		48.9	25.7	4	100.0	19.0	

NOTES:

Sample # 21

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM #3L
VERTICAL THICKNESS 3.42 DIP ANGLE 24
RECEIVED: 00/00/00 MM DD YY

INTERCEPT 358.26- 361.68 INTCPT THICKNESS 3.42 TRUE THICKNESS 3.12 M
LATITUDE 0044876.130 M DEPARTURE 6391[illegible].130 M ELEVATION 1260.900 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 88.4 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	100.00	0.00
ASH %	19.40	8.40
V.M. %	18.50	21.10
F.C. %	62.10	70.50
F.S.I.	7	8-1/2
% TOTAL SULF.	0.37	0.55
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	6985.	7924.
V.M. % (DAF)		23.0

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	399.0
FUSION TEMP.	DC	439.0
MAX FLUID TEMP.	DC	461.0
FINAL FLUID TEMP.	DC	487.0
SOLIDIFICATION TEMP.	DC	493.0
MELTING RANGE	DC	57.0
MAXIMUM FLUIDITY DD/M		264.5

DILATATION (RUHR) DATE RUN 00/00/00

II - SOFT. TEMP.	DC	413.0
III - MAX. CONTRACTION TEMP.	DC	451.0
IIII - MAX. DILATATION TEMP.	DC	487.0
CONTRACTION	%	18.0
DILATATION	%	3.1

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
12	4.9	TOTAL VITRINOID	69.9	INERT SF. (1/2)	10.1
13	9.8	REACTIVE SF. (1/2)	10.1	MICRINOIDS	2.7
14	41.9	EXINOID & RESIN	0.0	FUSINOIDS	2.5
15	12.6	TOTAL REACTIVES	80.0	MINERAL MATTER	4.7
16	0.7			TOTAL INERTS	20.0
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.44
BAL. INDEX 1.26 STRENGTH INDEX 6.73 FRED. COKE STAB. INDEX 65.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	85.6	21.2	85.6	21.2
-28M + 60M	8.5	0.0	94.1	19.3
-60M + 0	5.9	11.9	100.0	18.8

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT WT.	DIRECT ASH	FSI	CUM. WT.	CUM. ASH	+/- .1 S.G.
(85.6) -1/4'+28M	FLT.	1.30	17.0	2.9	7-1/2	17.0	2.9	68.7
		1.40	39.7	10.2	6	56.7	8.0	69.0
		1.50	17.2	20.7	4-1/2	73.9	11.0	27.4
		1.60	5.4	32.2	2	79.3	12.4	10.4
		1.70	3.2	39.6	1	82.5	13.5	
	SINK	1.70	17.5	57.8	NC	100.0	21.2	
(8.5) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(5.9) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT WT.	DIRECT ASH	FSI	CUM. WT.	CUM. ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(8.5) -28M+60M	FROTH		0.0	0.0		0.0	0.0	
	TAILINGS		0.0	0.0		0.0	0.0	
FROTH CELL TEST								
(5.9) -60M + 0	FROTH		66.5	8.4	7-1/2	66.5	8.4	
	TAILINGS		33.5	18.8	6	100.0	11.9	

NOTES:

Sample # 22

PRINTED 02/09/82

RILL HOLE: EV151 (CORE) SEAM	INTERCEPT 363.60- 364.39	INTCPT THICKNESS 0.79	TRUE THICKNESS 0.72 M
VERTICAL THICKNESS 0.79	DIP ANGLE 24	LATITUDE 5546876.130 N	DEPARTURE 659152.130 N	ELEVATION 1253.560 M
	RECEIVED: 00/00/00	WEIGHT 0.00 KG	MOISTURE 0.0 %	COMPLETE: 00/00/00
	MM DD YY	COMPOSITE:	RECOVERY 100.0 %	MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	100.00	89.30
ASH %	9.80	6.90
V.M. %	17.30	18.70
F.C. %	72.70	74.40
F.S.I.	6-1/2	7
% TOTAL SULF.	0.58	0.45
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	7913.	8123.
V.M. % (DAF)		19.4

% (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	407.0
TII - MAX. CONTRACTION TEMP.	DC	449.0
TIII - MAX. DILATATION TEMP.	DC	488.0
CONTRACTION	%	21.0
DILATATION	%	19.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
12	0.5	TOTAL VITRINOID	54.3	INERT SF. (1/2)	17.1
13	8.7	REACTIVE SF. (1/2)	17.2	MICRINOIDS	3.4
14	41.8	EXINOID & RESIN	0.0	FUSINOIDS	4.1
15	3.3			MINERAL MATTER	3.9
0	0.0	TOTAL REACTIVES	71.5	TOTAL INERTS	28.5
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.44

BAL. INDEX 1.99 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 62.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

FROTH CELL TEST

(0.0) -60M+ 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:

PRINTED 02/07/82

DRILL HOLE: EV151 (CORE) SEAM INTERCEPT 367.27- 367.84 INTCPT THICKNESS 0.55 TRUE THICKNESS 0.50 M
VERTICAL THICKNESS 0.53 DIP ANGLE 24 LATITUDE 5946876.130 M DEPARTURE 659152.139 M ELEVATION 1231.870 M
RECEIVED: 00/00/00 WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
MM DD YY COMPOSITE: RECOVERY 72.2 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	%CLEAN
% OF 1/8' X 0	0.00	0.00
ASH %	0.00	0.00
V.M. %	0.00	0.00
F.C. %	0.00	0.00
F.S.I.		
% TOTAL SULF.	0.00	0.00
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	0.
V.M. % (DAF)		0.0
% (-1/8'+0 COAL FLOATED AT 1.50 S.G.)		

GIESELER PLASTICITY, DATE RUN 00/00/00

START	GC	0.0
FUSION TEMP.	GC	0.0
MAX FLUID TEMP.	GC	0.0
FINAL FLUID TEMP.	GC	0.0
SOLIDIFICATION TEMP.	GC	0.0
MELTING RANGE	GC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

II - SOFT. TEMP.	GC	0.0
III - MAX. CONTRACTION TEMP.	GC	0.0
IIII - MAX. DILATATION TEMP.	GC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
0	0.0	TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID % RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

FROTH CELL TEST

(0.0) -28M+60M	FROTH	0.0	0.0		0.0	0.0
	TAILINGS	0.0	0.0		0.0	0.0

FROTH CELL TEST

(0.0) -60M+ 0	FROTH	0.0	0.0		0.0	0.0
	TAILINGS	0.0	0.0		0.0	0.0

NOTES:

PRINTED 02/09/82

DRILL HOLE: EV151 (CORE) SEAM M
VERTICAL THICKNESS 0.31 DIP ANGLE 24
RECEIVED: 00/00/00 HH DD YY

INTERCEPT 376.43- 376.74 INTCPT THICKNESS 0.31 TRUE THICKNESS 0.28 M
LATITUDE 3546876.130 M DEPARTURE 639152.130 M ELEVATION 1242.730 M
WEIGHT 0.00 KG MOISTURE 0.0 % COMPLETE: 00/00/00
COMPOSITE: RECOVERY 0.0 % HH DD YY

PROXIMATE ANALYSIS (DRY BASIS)

	RAW	*CLEAN
% OF 1/8' X 0	0.00	0.00
ASH %	0.00	0.00
V.M. %	0.00	0.00
F.C. %	0.00	0.00
F.S.I.		
% TOTAL SULF.	0.00	0.00
% P2O5 (PHOSPHATE)	0.00	0.00
GROSS CAL. VALUE BTU/LB	0.	0.
V.M. % (DAF)		0.0

* (-1/8'+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 00/00/00

START	DC	0.0
FUSION TEMP.	DC	0.0
MAX FLUID TEMP.	DC	0.0
FINAL FLUID TEMP.	DC	0.0
SOLIDIFICATION TEMP.	DC	0.0
MELTING RANGE	DC	0.0
MAXIMUM FLUIDITY DD/M		

DILATATION (RUHR) DATE RUN 00/00/00

TI - SOFT. TEMP.	DC	0.0
TII - MAX. CONTRACTION TEMP.	DC	0.0
TIII - MAX. DILATATION TEMP.	DC	0.0
CONTRACTION	%	0.0
DILATATION	%	0.0

PETROGRAPHIC DATA DATE COMPLETED 00/00/00 PELLET NUMBER 0

V-TYPES TYPE	%	REACTIVE COMPONENTS		INERT COMPONENTS	
0	0.0	TOTAL VITRINOID	0.0	INERT SF. (1/2)	0.0
0	0.0	REACTIVE SF. (1/2)	0.0	MICRINOIDS	0.0
0	0.0	EXINOID & RESIN	0.0	FUSINOIDS	0.0
0	0.0			MINERAL MATTER	0.0
0	0.0	TOTAL REACTIVES	0.0	TOTAL INERTS	0.0
0	0.0				
0	0.0				

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.00
BAL. INDEX 0.00 STRENGTH INDEX 0.00 PRED. COKE STAB. INDEX 0.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4')

SIZE	WT.%	ASH%	CUMULATIVE WT.%	CUMULATIVE ASH%
-1/4'+ 28M	0.0	0.0	0.0	0.0
-28M + 60M	0.0	0.0	0.0	0.0
-60M + 0	0.0	0.0	0.0	0.0

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -1/4'+28M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

WASHABILITY (WT.%) AND SIZE — DATE RUN 00/00/00

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(100.0) -1/8'+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -28M+60M	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

FROTH CELL TEST

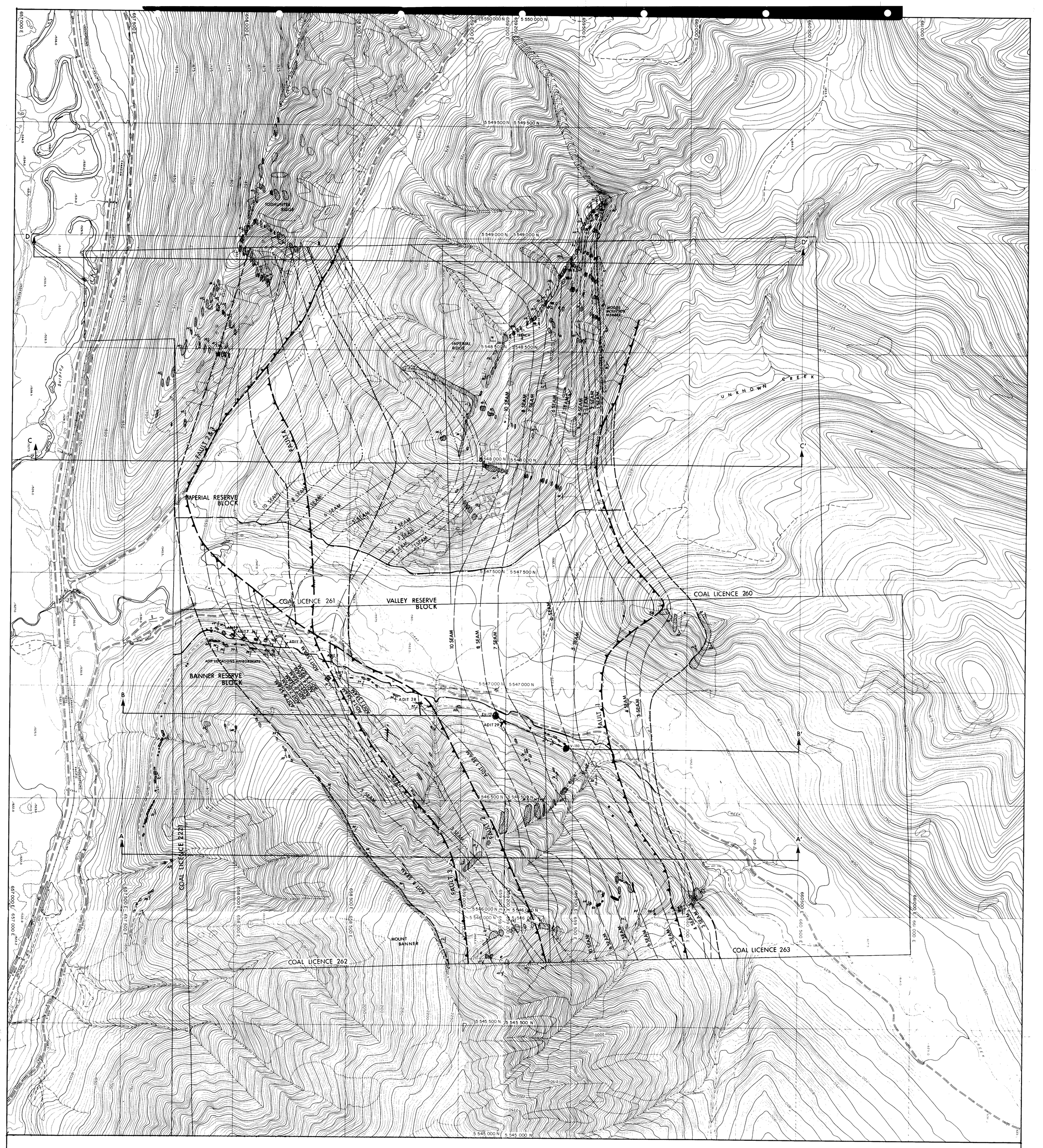
(0.0) -28M+60M	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

		S.G.	DIRECT % WT.	DIRECT % ASH	FSI	CUM. % WT.	CUM. % ASH	+/- .1 S.G.
(0.0) -60M+ 0	FLT.	1.30	0.0	0.0		0.0	0.0	0.0
		1.40	0.0	0.0		0.0	0.0	0.0
		1.50	0.0	0.0		0.0	0.0	0.0
		1.60	0.0	0.0		0.0	0.0	0.0
		1.70	0.0	0.0		0.0	0.0	
	SINK	1.70	0.0	0.0		0.0	0.0	

FROTH CELL TEST

(0.0) -60M+ 0	FROTH	0.0	0.0	0.0	0.0
	TAILINGS	0.0	0.0	0.0	0.0

NOTES:



LEGEND

- LICENCE BOUNDARY
- FORMATION BOUNDRIES PROJECTED
- THRUST FAULT PROJECTED
- SEAM TRACE PROJECTED
- RESERVE BLOCK BOUNDARIES
- 750 METRE COVER LINE PROJECTED

0 metres 200 400 600 800 1000

1 Cm = 50 metres

N

B C Coal — SPARWOOD B.C.

EWIN CREEK C.L. 260 - 263, 2221

SURFACE GEOLOGY

DESIGNED J.A.H.	DATE FEB., 1982
DRAWN R.J.T.	SCALE 1: 5000
CHECKED	135-20-1
APPROVED	

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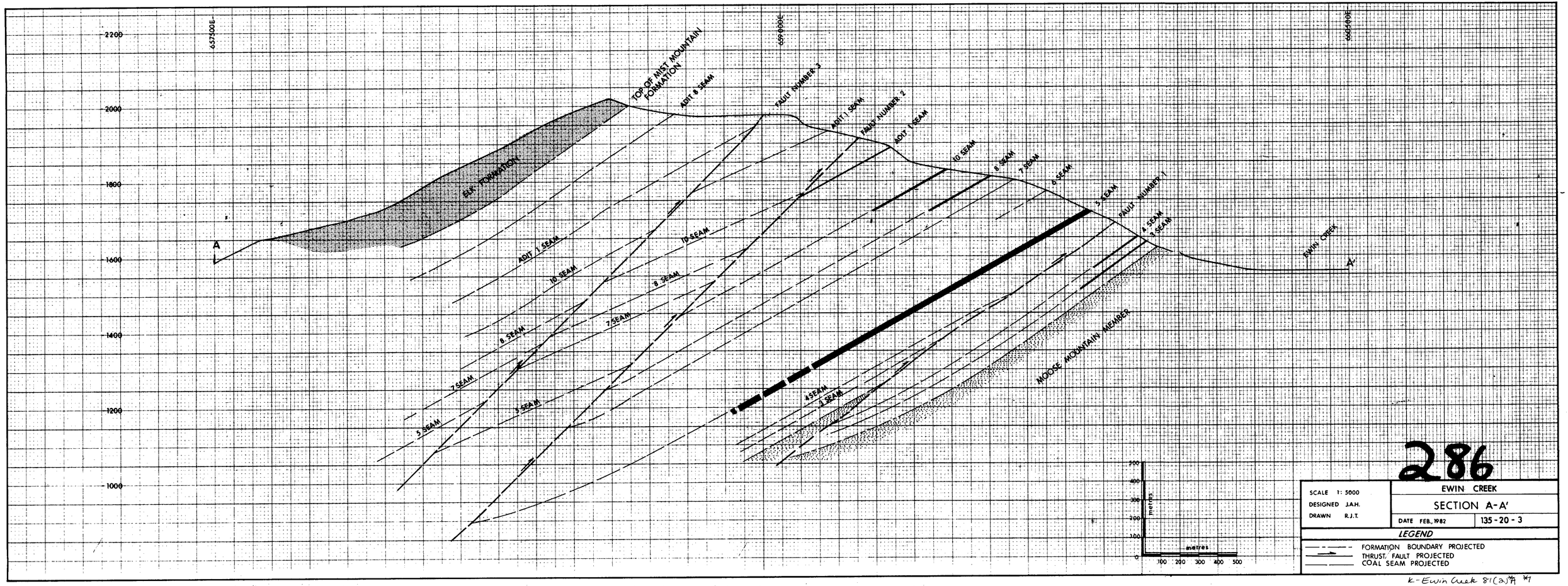
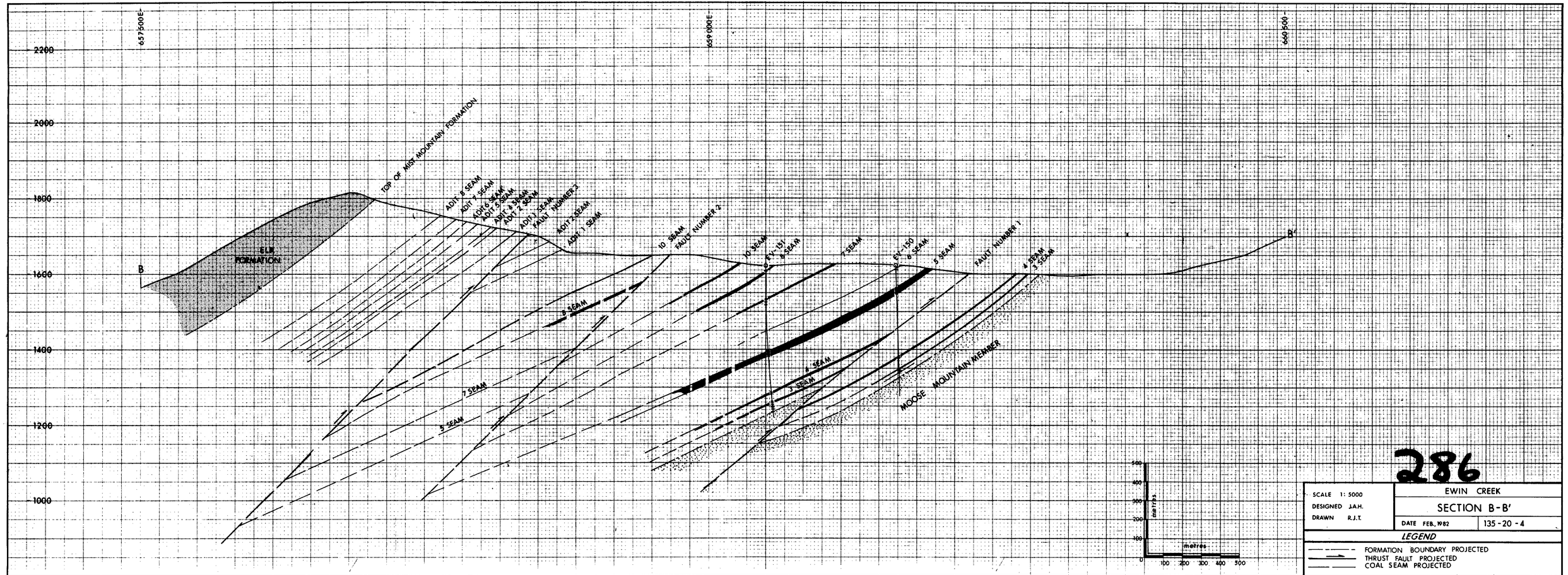
K-Ewin Creek 81(a)JA #1

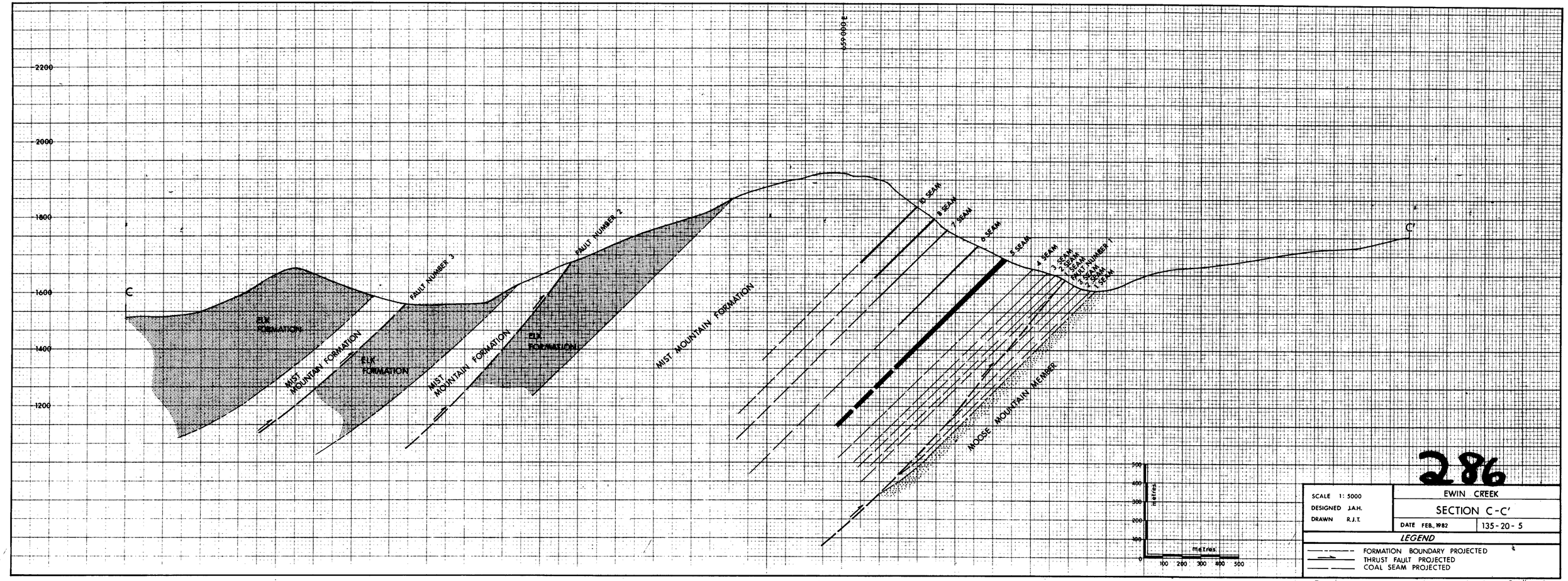


286

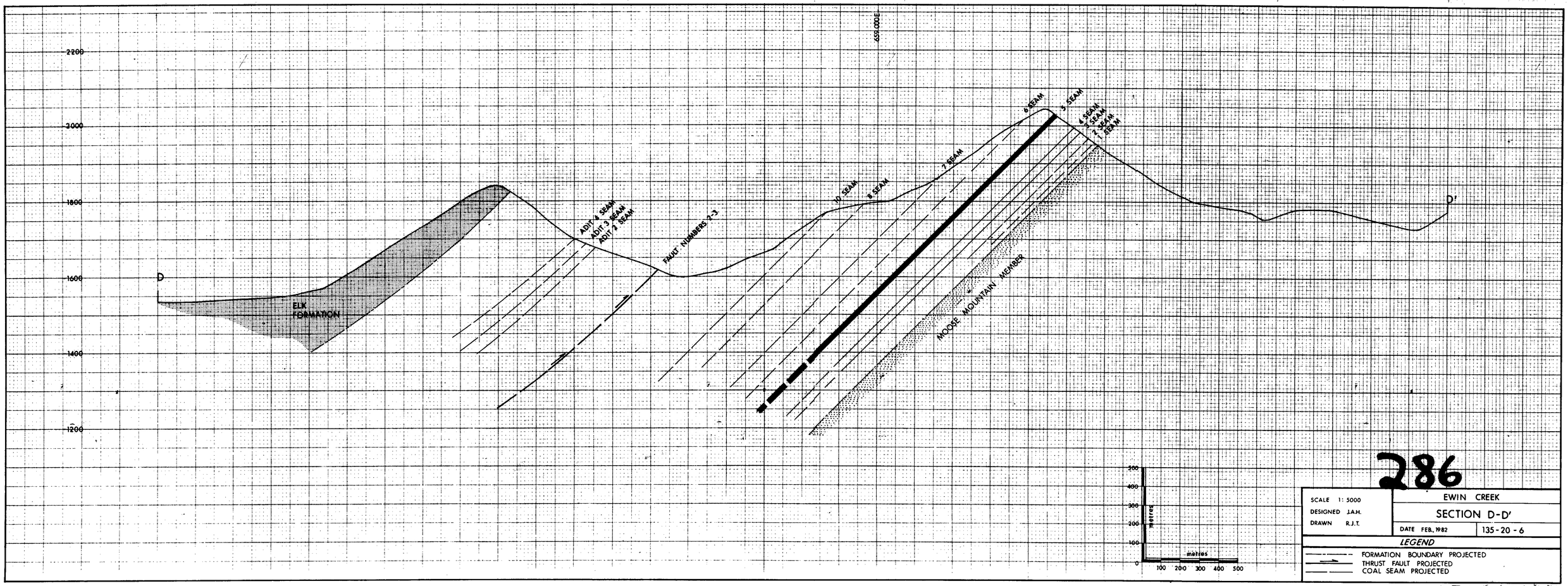
k-Ewin Creek 81(a)A #1



K-Ewin Creek 81G2YA #1



K-Ewin Creek 81(2)A #1



K-Ewin Creek 31(2)*A *1

B.C. COAL LTD.

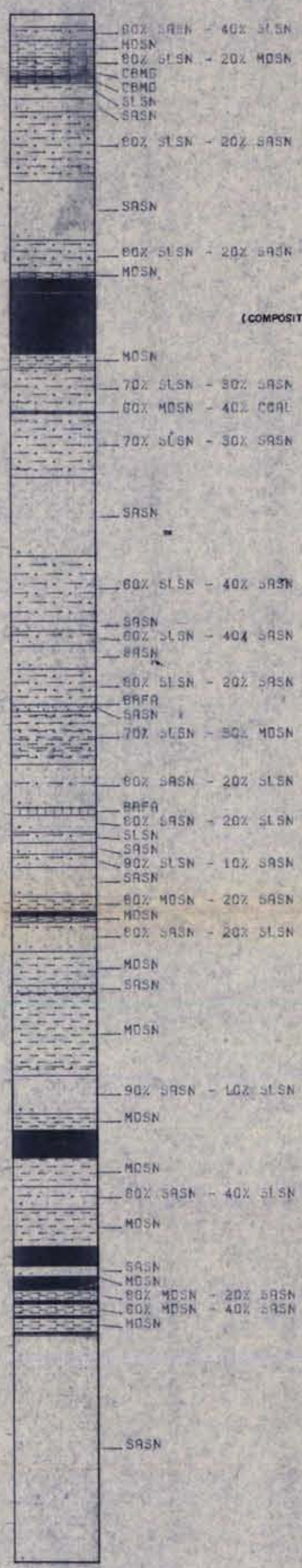
HOLE NUMBER EV150

LATITUDE= 5546736.937 DEPARTURE= 659471.968

VERTICAL SCALE= 1CM TO 1000 G COMPLETED= 81-11-1

GEOLOGIST = JAH MEASUREMENTS IN METRIC

TOP ELEV = 1628.00



	RAW		CLEAN						
SEAM	ASH	FSI	ASH	FSI	VM (daf)	FC	DDM	cal/gm	Rō
(COMPOSITE)	5	25.3	6	8.5	7	24.4	70.6	32.7	7,944	1.32
4	24.5	2	7.7	5	20.8	73.1	1.6	7,918	1.44
3	32.6	2	8.8	6.5	19.8	73.1	23.9	7982	1.45
3L	14.1	2	17.9	6.5	20.8	72.9	60.1	7995	1.41

TOTAL DEPTH = 348.78

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K-Ewin Creek 81(3)A *1

BC Coal SPARWOOD B.C.

EWIN CREEK C.L.260-263,2221
DIAMOND DRILLHOLE EV-150

DESIGNED JAH	DATE FEB, 1982
DRAWN PAT	SCALE AS NOTED ABOVE
CHECKED	135-20-8
APPROVED	

P. C. COAL LTD.

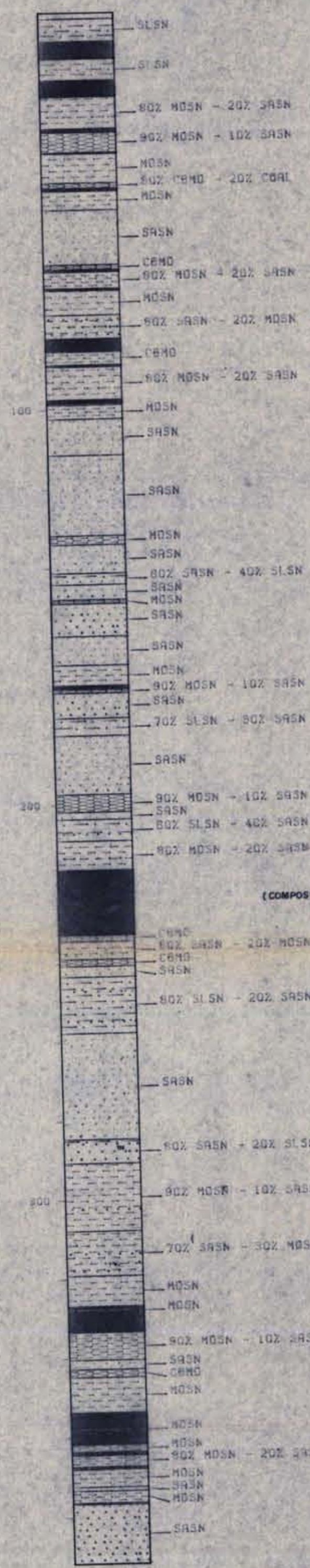
HOLE NUMBER EV151

LATITUDE= 5546876.124 DEPARTURE= 659152.124

VERTICAL SCALE= 1CM TO 1000 C COMPLETED= 81-11-11

GEOLOGIST = JAH MEASUREMENT IN METRIC

TOP ELEV = 1619.16



	RAW		CLEAN						
SEAM	ASH	FSI	ASH	FSI	VM (daf)	FC	DDM	cal/gm	Rō
8	17.7	6.5	6.1	6.5	26.9	68.6	9.8	8,056	1.13
8L	50.8	5.5	8.5	7	28.3	65.6	435.9	7,901	1.13
7	21.6	6	9.3	7	24.5	68.5	175.4	7,657	1.18
6	41.3	4	8.5	8.5	23.7	69.8	3.0	7,935	1.16
(COMPOSITE) 5	25.6	2	8.3	6.5	23.2	70.4	7.3	7,922	1.35
4	19.1	3	7.4	5.5	21.1	73.1	7.7	8,009	1.40
3	32.3	2	9.5	7	20.6	71.9	51.8	7,883	1.44
3L	19.4	7	8.4	8.5	23.0	70.5	264.5	7,924	1.44

TOTAL DEPTH = 391.77

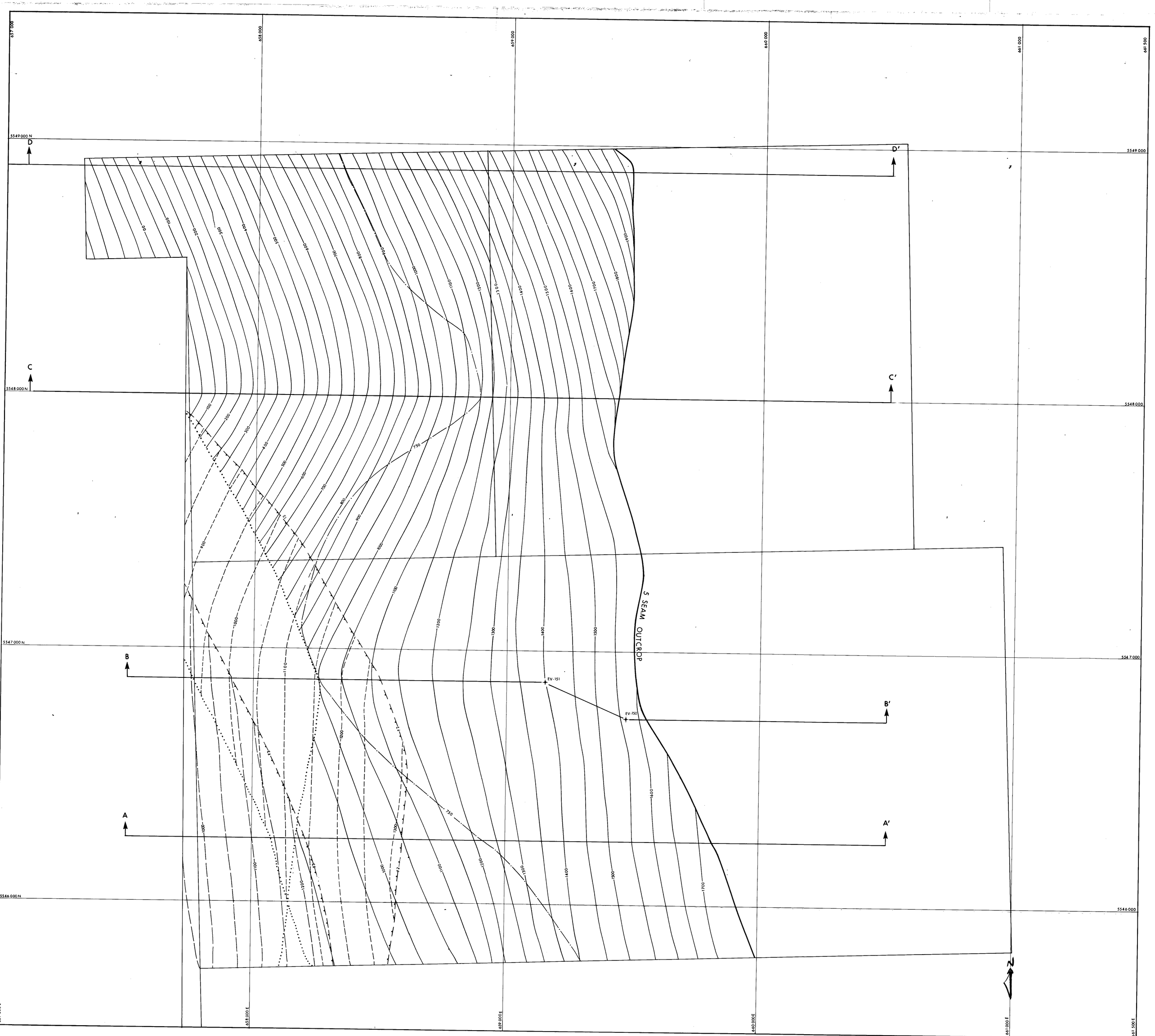
BC Coal SPARWOOD B.C.

K-Ewin Creek 81(3)*A *1

EWIN CREEK C.L. 260-263,2221

DIAMOND DRILLHOLE EV-151

DESIGNED JAH	DATE FEB, 1982
DRAWN PAT	SCALE AS NOTED ABOVE
CHECKED	135-20-9
APPROVED	



LEGEND

- 1700 — HW STRUCTURE CONTOUR SHOWING ELEVATION
- 750 — 750 m COVER LINE
- THRUST FAULT UPPER CONTACT
- THRUST FAULT LOWER CONTACT

0 metres 100 200 300 400
1 Cm = 50 m

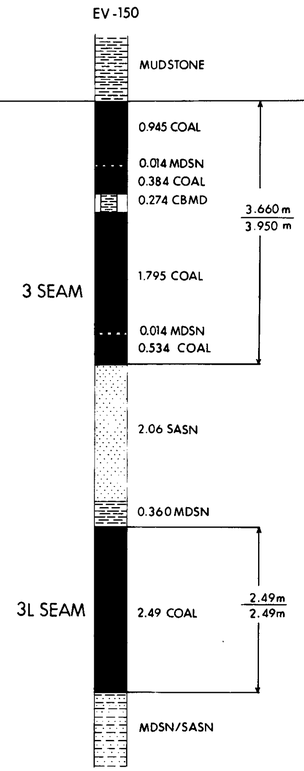
B C Coal

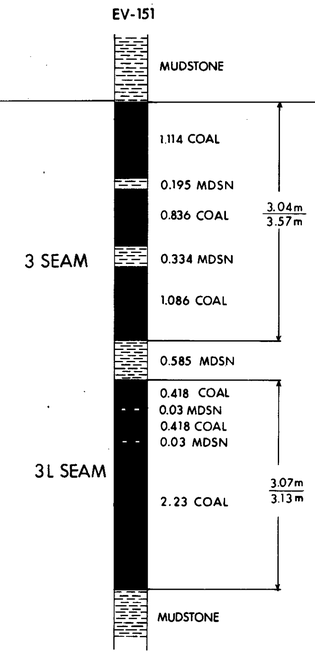
SPARWOOD B.C.

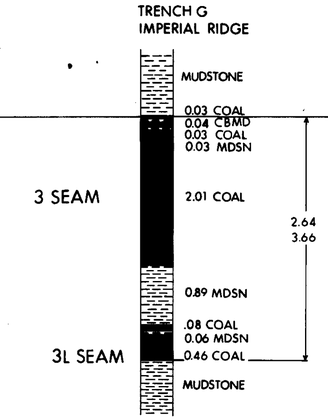
No. 5 SEAM
HANGING WALL STRUCTURE CONTOURS
EWIN CREEK COAL LICENCES

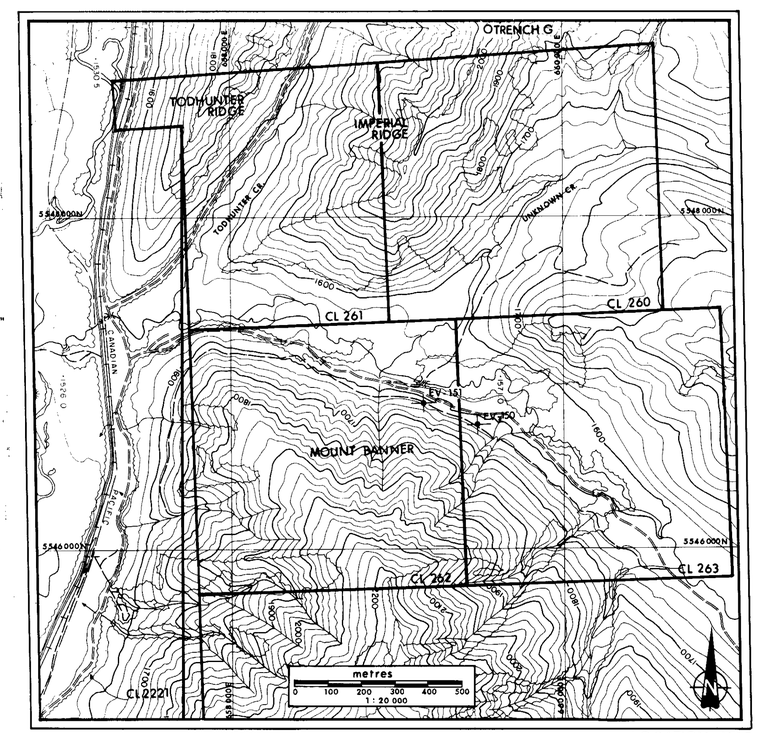
DESIGNED J A H	DATE JAN., 1982
DRAWN R.J.T.	SCALE 1: 5000
	135 - 20 - 11

K-Ewin Creek 81(2)A #1









LOCATION MAP

LEGEND

- COAL
- COALY MUDSTONE
- CARBONACEOUS MUDSTONE
- MUDSTONE
- IRON CONCRETION

0 0.5 1.0 1.5 2.0 metres

BC Coal

SPARWOOD B.C.

EWIN CREEK

CL 260 - 263, 2221

3 SEAM CORRELATION CHART

DESIGNED J.A.H.	DATE JAN., 1982
DRAWN R.J.T.	SCALE 1:50
CHECKED	135-20-12
APPROVED	

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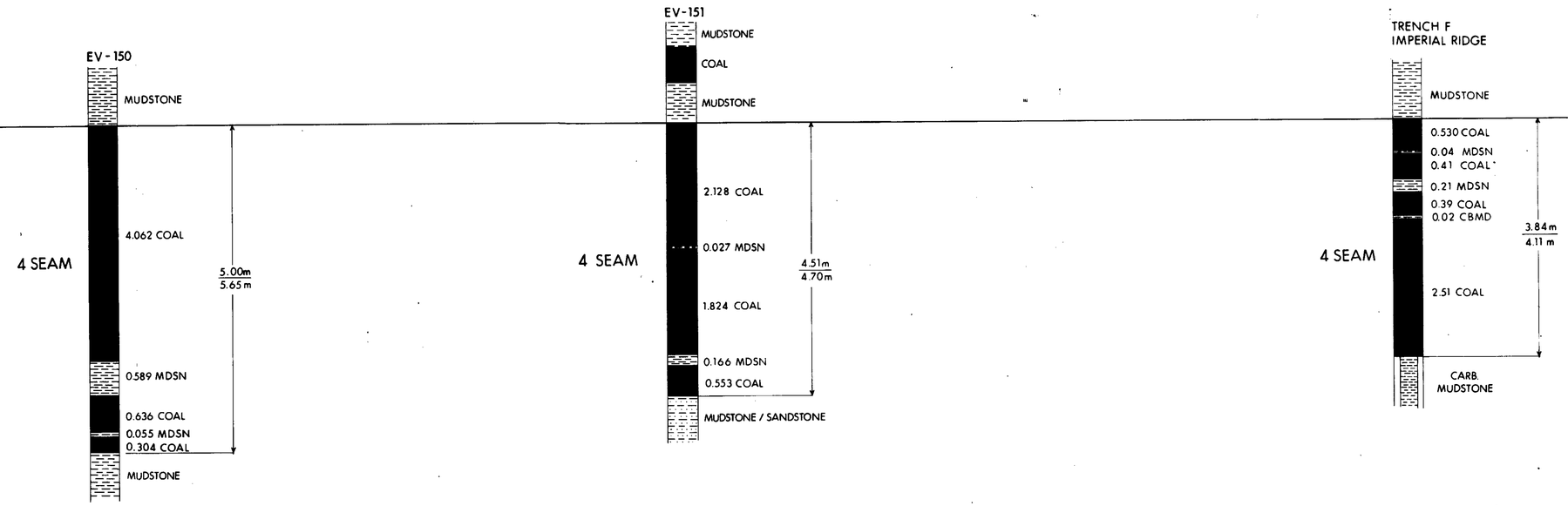
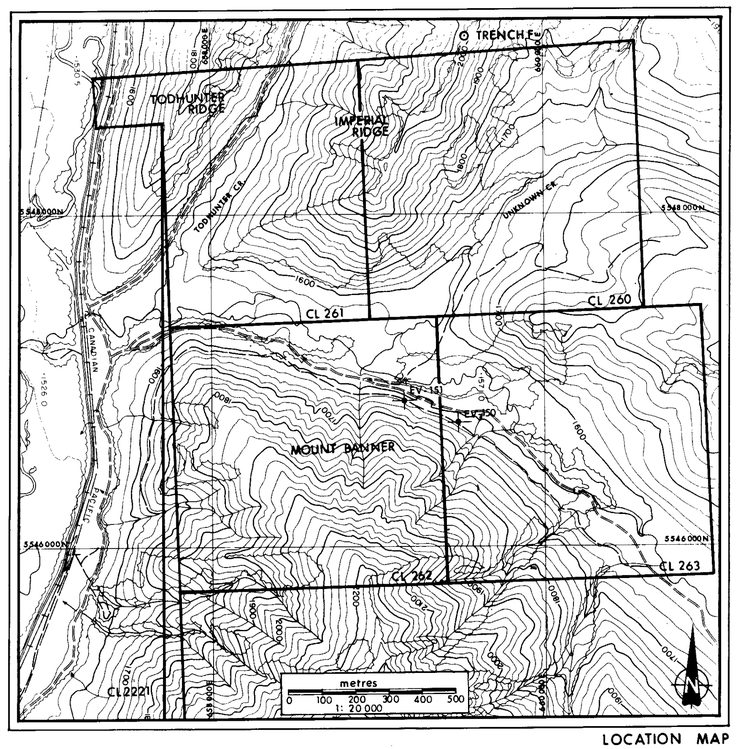
K-Ewin Creek 81(2)*A *1





LOCATION MAP

LEGEND

- COAL
- COALY MUDSTONE
- CARBONACEOUS MUDSTONE
- MUDSTONE
- IRON CONCRETION

0 0.5 1.0 1.5 2.0 metres

BC Coal

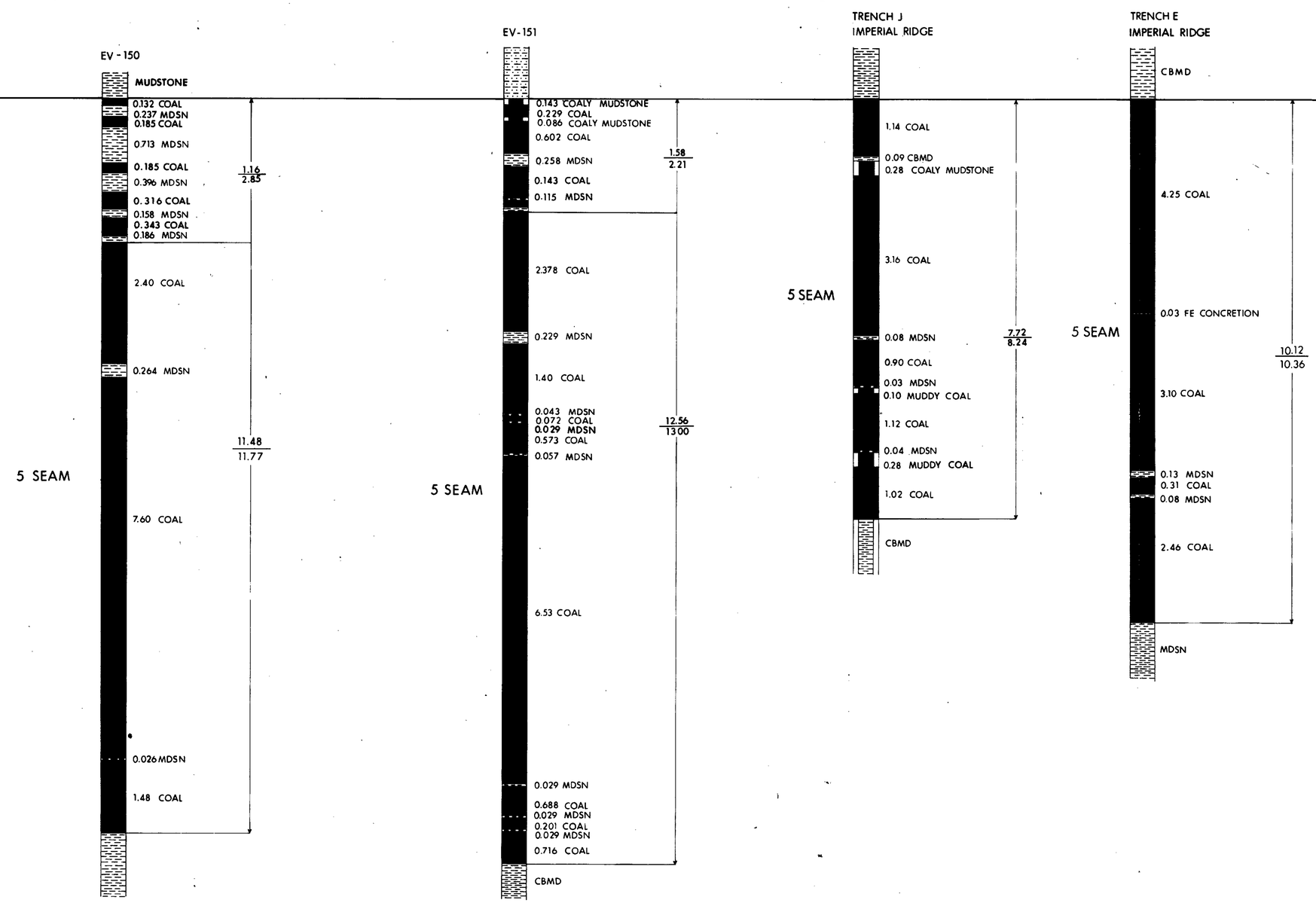
SPARWOOD B. C.

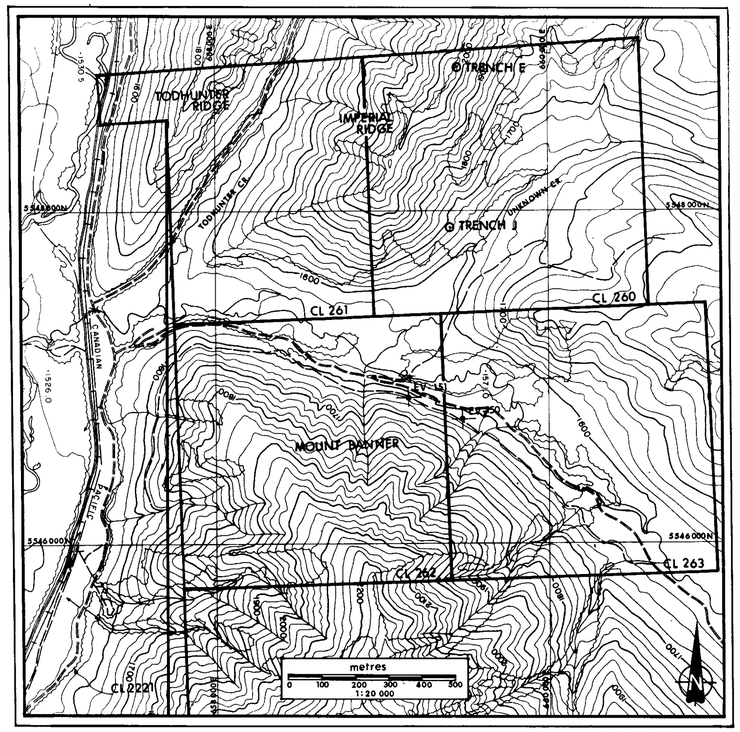
EWIN CREEK
CL 260 - 263, 2221
4 SEAM CORRELATION CHART

DESIGNED J.A.H.	DATE JAN., 1982
DRAWN R.J.T.	SCALE 1: 50
	135-20-13

286

K-Ewin Creek 81L2JA #1





LOCATION MAP

LEGEND

- COAL
- COALY MUDSTONE
- CARBONACEOUS MUDSTONE
- MUDSTONE
- IRON CONCRETION

0 0.5 1.0 1.5 2.0 metres

B C Coal SPARWOOD B. C.

EWIN CREEK
CL 260 - 263, 2221
5 SEAM CORRELATION CHART

DESIGNED J.A.H.	DATE JAN, 1982
DRAWN R.J.T.	SCALE 1: 50
	135-20-14

286

K-Ewin Creek 81(2)A #1

Rec-13

ROKE OIL ENTERPRISES LTD.

COMPANY B.P. CNRL LETHEM
WELL 8-27
LOCATION ARTIC TRIBE
FIELD LETHEM, ARTIC TRIBE
COUNTY/PROV. ALBERTA
COUNTRY CANADA

286

Date Run: 1-Dec-1988
Date Proc.: 1-Dec-1988
Depth Scale: 1:200

Elevations: KB 1000 m
DF
GL 996 m

Permanent Datum: GROUND LEVEL
Log Measured From: KB 4 m above Perm. Datum
Drilling Measured From: KB

Run No. ONE
Depth Driller 1000 m
Depth Logger 1000 m
Bottom Log Interval 1000 m
Top Log Interval 0 m
Casing Driller 244.5 mm @ 0 m
Casing Logger 244.5 mm @ 0 m
Bit Size 203 mm
Type Fluid in Hole WATER
Density 1.0 g/cc
Viscosity 50 s
Fluid Loss N.A.
Source of Sample CIRCULATION
Rm @ Meas. Temp. 0.1 @ 20 °C
Rmf @ Meas. Temp. 0.1 @ 20 °C
Rmc @ Meas. Temp. 0.1 @ 20 °C
Rm @ BHT 0.1 @ 20 °C
Time Since Circ. 4 hrs
Max. Rec. Temp. 20 °C
Equip. Location CALGARY
Recorded By FERGUSON
Witnessed By BOTTS

EQUIPMENT DATA

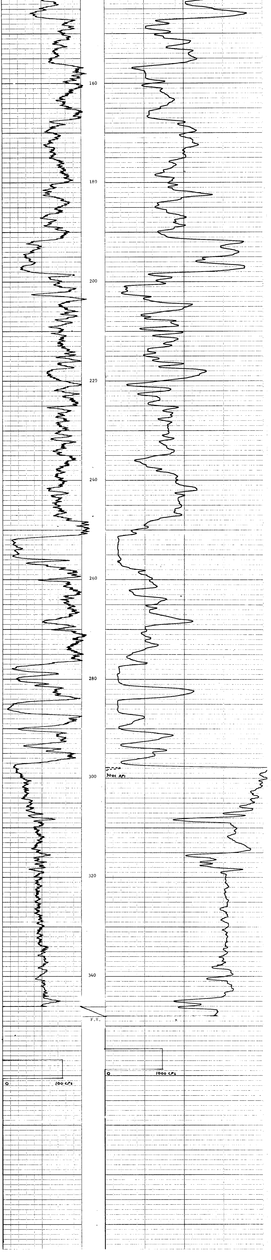
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		TOOL TYPE	NEUTRON/NEUTRON
DIAMETER	32MM	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	32MM
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	10CM	TYPE	PROPORTIONAL
DISTANCE TO SOURCE	20	LENGTH	
		SOURCE MODEL NO.	MSC-A-50-W
GENERAL		SERIAL NO.	265
MONIT TRUCK NO.	37	STRENGTH	4.5CM
INSTRUMENT TRUCK NO.	37	TYPE	AmBe
TOOL SERIAL NO.	CSU1254309	STRENGTH	2.109GIG

LOGGING DATA

GENERAL						GAMMA RAY						NEUTRON			
RUN NO.	DATUM FROM	TO	SPEED M/MIN	T.C. SEC	SENS SETTING	ZERO DIV.	ATS R UNITS PER LOG DIV.	T.C. SEC	SENS SETTING	ZERO DIV.	SP% UNITS PER LOG DIV.
ONE	0	15	4	3	100	0	15	3	100	0	150
ONE	15	346	4	3	100	0	15	3	100	0	150

REMARKS

GAMMA RAY	DEPTH	NEUTRON
GAMMA RAY INCREASES		NEUTRON INCREASES
0 API 150		0 1000 1000



ROKE SIDEWALL DEVELOG

OIL DEVELOPMENTS LTD. CALGARY, ALBERTA

FILE NO. 286

COMPANY B.A. OIL CANADA

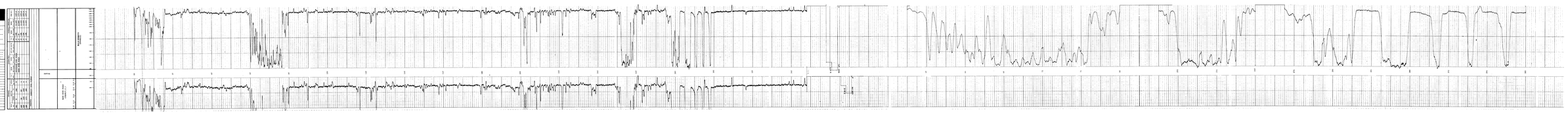
WELL 10-10

LOCATION NEW LAKE

FIELD NEW LAKE

	PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL	Elev. 0
Log Measured From	GROUND LEVEL	Ele. 0 Above Perm. Datum
Drl. Meas. From	GROUND LEVEL	Elev. 0

Date	1966
Run Number	ONE
Depth Driller	2000
Depth Logger	2000
Bottom Log Int.	2000
Top Log Int.	1800
Casing Driller	9 5/8" @
Casing Logger	9 5/8" @
Bit Size	8 3/4"
Type Fluid	SALTWATER
Dens.	10.0
Visc.	40
pH	10
Fluid Loss	8 cc
Source of Sample	CIRC.
Rm @ Meas. Temp.	.7 @ 80
Rmf @ Meas. Temp.	.6 @ 80
Rmc @ Meas. Temp.	.9 @ 80
Source: Rmf/Rmc	MEASD
Rm @ BHT	.3 @ 200
Time Since Circ.	24
Max. Rec. Temp.	200
Equip. Location	7
Recorded By	GRAHAM
Witnessed By	MOTT



ROKE

OIL ENTERPRISES LTD.
GAMMA RAY NEUTRON LOG
CALGARY ALBERTA

Field Copy Only #1

WELL	FILE NO.
Lsd. Blk.	COMPANY ROKE OIL ENTERPRISES LTD.
Twp.	WELL 1-2-D-SOUTH
Rge.	FIELD
M.	COUNTY
PROVINCE ALBERTA	
Other Services:	
Permanent Datum: GROUND LEVEL	Elev.
Log Measured From:	10 Ft. Above Perm. Datum
Drilling Measured From:	K.B.

286

Date	1-2-74		
Run No.	ONE		
Depth-Driller	3280		
Depth-Logger	3286		
Bottom Log Interval	3284		
Top Log Interval	SURFACE		
Casing-Driller	8 5/8 @ 30		
Casing-Logger	30		
Bit Size	7 7/8		
Type Fluid in Hole	GEL CHEM		
Dens.	9.6		
Visc.	50		
Pm			
Pf/Mf			
Chlorides	3,500		
Source of Sample	CIRCULATION		
Rm @ Meas. Temp.			
Rmf @ Meas. Temp.			
Rmc @ Meas. Temp.			
Source: Rmf/Rmc			
Rm @ BHT			
Time Since Circ.	5 HRS.		
Max. Rec. Temp.	100°F.		
Equip. Location	1-2-D-SOUTH		
Recorded By	MARTIN		
Witnessed By	MR. KOSTUK		

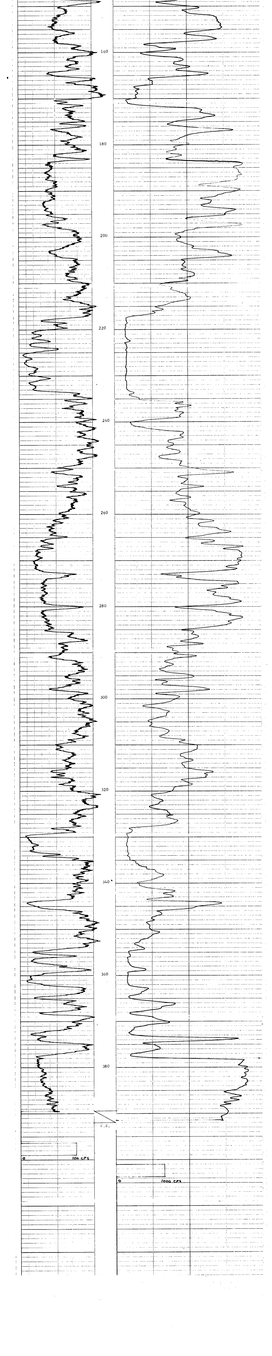
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	
TOOL MODEL NO.		LOG DIR.	
DIAMETER	3 3/8	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	3 3/8
TYPE	SCINTILLATION	DETECTOR MODEL NO.	
LENGTH	5.00	TYPE	PROPORTIONAL
DISTANCE TO A SOURCE	26	LENGTH	5.00
GENERAL		DISTANCE TO A SOURCE	MRC N-55-W
		MODEL NO.	215
JOINT TRUCK NO.	37	SPACING	5.00
INSTRUMENT TRUCK NO.	37	TYPE	Helium
TOOL SERIAL NO.	CORTLANDS	STRENGTH	5 CURIES

LOGGING DATA

GENERAL					GAMMA RAY				NEUTRON			
RUN NO.	FROM	TO	SPEED U.M.P.	F.C. SEC.	SENS SETTINGS	DIV. 1 CPS	AT X 10 UNITS PER 1 DIV.	F.C. SEC.	SENS SETTINGS	DIV. 1 CPS	AT X UNITS PER 1 DIV.	
ONE	0	24	4	1	500	4	15	1	1000	4	100	
ONE	24	281	4	1	500	2	15	1	500	2	100	

REMARKS



ROKE

286

K-Ewin Creek 81(3)A #1

COMPANY : BCC
DRILL HOLE : EV150 HOLE TYPE : DDH
DRILL AREA : EWNCR
PROVINCE : BC
AZIMUTH FROM GRID : 0
SIZE1 :
TO DEPTH1 : 0.00
GEOPHYSICAL LOG COMPANY : ROK
DS :Y

LATITUDE : 5546736.97 NORTHING
DEPARTURE : 659471.97 EASTING
ELEVATION : 1628.00
MAGNETIC DECLINATION : 19 12 00
SLANT ANGLE : 90
SIZE2 : HQ.3
TO DEPTH2 : 348.70
GEOPHYSICAL LOG TYPE : GED

START DATE : 241081
FINISH DATE : 011181
GEOLOGIST : JAH
DRILL COMPANY : CCL
WATER LEVEL : 194
SIZE3 :
TO DEPTH3 : 0.00
GRID : UTM GRID

286

NO.	CABLE DEPTH	ANGLE OF INC.	AZIMUTH COURSE OBS.	AZIMUTH COURSE COR.	COURSE INTERVAL CABLE	COURSE INTERVAL VERT	TOTAL VERT DEPTH	COURSE DISPLACEMENT LAT.	COURSE DISPLACEMENT DEP.	TOTAL DISPLACEMENT LAT.	TOTAL DISPLACEMENT DEP.	COORDINATES LATITUDE	COORDINATES DEPARTURE	COORDINATES ELEVATION	POLAR COORDINATES RAD	POLAR COORDINATES AZMTH	POLAR COORDINATES INC.
1	15.0	0.1	204.0	223.2	15	15.0	15.0	-0.0	-0.0	-0.0	-0.0	5546736.9	659471.9	1613.0	0.0	223.2	0.0
2	30.0	0.1	325.7	344.9	15	15.0	30.0	0.0	-0.0	0.0	0.0	5546737.0	659471.9	1598.0	0.0	286.1	0.0
3	45.0	0.4	41.2	60.4	15	15.0	45.0	0.0	0.1	0.0	0.0	5546737.0	659472.0	1583.0	0.1	36.9	0.1
4	60.0	0.1	35.3	54.5	15	15.0	60.0	0.0	0.1	0.1	0.1	5546737.1	659472.1	1568.0	0.1	46.9	0.1
5	75.0	0.9	87.6	106.8	15	15.0	75.0	-0.0	0.1	0.0	0.2	5546737.0	659472.2	1553.0	0.2	77.4	0.1
6	90.0	1.2	65.9	85.1	15	15.0	90.0	0.0	0.3	0.1	0.5	5546737.0	659472.5	1538.0	0.5	81.6	0.3
7	105.0	1.3	113.4	132.6	15	15.0	105.0	-0.2	0.2	-0.1	0.7	5546736.8	659472.7	1523.0	0.8	101.3	0.3
8	120.0	1.6	61.6	80.8	15	15.0	120.0	0.1	0.4	-0.1	1.1	5546736.9	659473.1	1508.0	1.1	94.5	0.4
9	135.0	1.6	56.8	76.0	15	15.0	135.0	0.1	0.4	0.0	1.5	5546737.0	659473.5	1493.0	1.5	89.4	0.4
10	150.0	2.5	73.2	92.4	15	15.0	149.9	-0.0	0.5	-0.0	2.1	5546737.0	659474.0	1478.1	2.1	90.2	0.5
11	165.0	2.5	66.7	85.9	15	15.0	164.9	0.0	0.7	0.0	2.7	5546737.0	659474.7	1463.1	2.7	89.1	0.7
12	180.0	2.5	61.4	80.6	15	15.0	179.9	0.1	0.7	0.1	3.4	5546737.1	659475.4	1448.1	3.4	87.5	0.7
13	195.0	2.5	62.3	81.5	15	15.0	194.9	0.1	0.7	0.2	4.0	5546737.2	659476.0	1433.1	4.1	86.5	0.7
14	210.0	2.6	63.0	82.2	15	15.0	209.9	0.1	0.7	0.3	4.7	5546737.3	659476.7	1418.1	4.7	85.9	0.7
15	225.0	2.6	68.0	87.2	15	15.0	224.9	0.0	0.7	0.4	5.4	5546737.3	659477.4	1403.1	5.4	86.0	0.7
16	240.0	2.6	73.1	92.3	15	15.0	239.8	-0.0	0.7	0.3	6.1	5546737.3	659478.0	1388.2	6.1	86.7	0.7
17	255.0	2.6	64.5	83.7	15	15.0	254.8	0.1	0.7	0.4	6.7	5546737.4	659478.7	1373.2	6.7	86.4	0.7
18	270.0	2.6	104.3	123.5	15	15.0	269.8	-0.4	0.6	0.0	7.3	5546737.0	659479.3	1358.2	7.3	89.6	0.7
19	285.0	2.6	67.3	86.5	15	15.0	284.8	0.0	0.7	0.1	8.0	5546737.1	659479.9	1343.2	8.0	89.4	0.7
20	300.0	3.0	59.2	78.4	15	15.0	299.8	0.1	0.7	0.2	8.7	5546737.2	659480.7	1328.2	8.7	88.4	0.7
21	315.0	3.0	60.0	79.2	15	15.0	314.7	0.1	0.8	0.4	9.5	5546737.4	659481.4	1313.3	9.5	87.7	0.8
22	330.0	3.0	63.4	82.6	15	15.0	329.7	0.1	0.8	0.5	10.2	5546737.5	659482.2	1298.3	10.2	87.3	0.8
23	345.0	3.0	6.1	25.3	15	15.0	344.7	0.7	0.3	1.2	10.6	5546738.2	659482.5	1283.3	10.6	83.6	0.8

K-Ewin Creek 81(3)A #1

COMPANY : BCC
DRILL HOLE : EV151 HOLE TYPE : DDH
DRILL AREA : EWNCR
PROVINCE : BC
AZIMUTH FROM GRID : 0
SIZE1 : HQ.3
TO DEPTH1 : 391.77
GEOPHYSICAL LOG COMPANY : ROK
DS :Y

LATITUDE : 5546876.13 NORTHING
DEPARTURE : 659152.13 EASTING
ELEVATION : 1619.16
MAGNETIC DECLINATION : 19 12 00
SLANT ANGLE : 90
SIZE2 :
TO DEPTH2 : 0.00
GEOPHYSICAL LOG TYPE : GED

START DATE : 021181
FINISH DATE : 111181
GEOLOGIST : JAN
DRILL COMPANY : CEL
WATER LEVEL : 194
SIZE3 :
TO DEPTH3 : 0.00
GRID : UTM GRID

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NO.	CABLE DEPTH	ANGLE OF INC.	AZIMUTH COURSE OBS.	AZIMUTH COURSE COR.	COURSE INTERVAL CABLE	COURSE INTERVAL VERT	TOTAL VERT DEPTH	COURSE DISPLACEMENT LAT.	COURSE DISPLACEMENT DEP.	TOTAL DISPLACEMENT LAT.	TOTAL DISPLACEMENT DEP.	COORDINATES LATITUDE	COORDINATES DEPARTURE	COORDINATES ELEVATION	POLAR COORDINATES RAD	POLAR COORDINATES AZMTH	POLAR COORDINATES INC.
1	15.0	1.6	51.2	70.4	15	15.0	15.0	0.1	0.4	0.1	0.4	5546876.3	659152.5	1604.2	0.4	70.4	0.4
2	30.0	1.2	21.7	40.9	15	15.0	30.0	0.3	0.2	0.4	0.6	5546876.5	659152.8	1589.2	0.8	56.5	0.4
3	45.0	1.2	37.5	56.7	15	15.0	45.0	0.2	0.3	0.6	0.9	5546876.7	659153.0	1574.2	1.1	56.6	0.3
4	60.0	1.6	36.0	55.2	15	15.0	60.0	0.2	0.3	0.8	1.2	5546876.9	659153.3	1559.2	1.5	56.2	0.4
5	75.0	1.6	34.8	54.0	15	15.0	75.0	0.2	0.3	1.1	1.6	5546877.2	659153.7	1544.2	1.9	55.7	0.4
6	90.0	2.5	47.8	67.0	15	15.0	90.0	0.2	0.5	1.3	2.1	5546877.4	659154.2	1529.2	2.4	58.2	0.5
7	105.0	2.5	42.3	61.5	15	15.0	104.7	0.3	0.6	1.6	2.6	5546877.7	659154.8	1514.2	3.1	58.9	0.7
8	120.0	2.5	36.1	55.3	15	15.0	119.9	0.4	0.5	2.0	3.2	5546878.1	659155.3	1499.2	3.7	58.3	0.7
9	135.0	2.5	35.4	54.6	15	15.0	134.9	0.4	0.5	2.3	3.7	5546878.5	659155.8	1484.3	4.4	57.7	0.7
10	150.0	2.5	30.2	49.4	15	15.0	149.9	0.4	0.5	2.8	4.2	5546878.9	659156.3	1469.3	5.0	56.6	0.7
11	165.0	2.9	27.1	46.3	15	15.0	164.9	0.5	0.5	3.3	4.7	5546879.4	659156.9	1454.3	5.8	55.4	0.7
12	180.0	3.1	31.3	50.5	15	15.0	179.8	0.5	0.6	3.8	5.3	5546879.9	659157.5	1439.3	6.5	54.8	0.8
13	195.0	3.5	50.0	69.2	15	15.0	194.8	0.3	0.8	4.1	6.1	5546880.2	659158.3	1424.3	7.4	55.4	0.9
14	210.0	3.8	40.8	60.0	15	15.0	209.8	0.5	0.8	4.6	7.0	5546880.7	659159.1	1409.4	8.3	56.8	1.0
15	225.0	3.8	71.5	90.7	15	15.0	224.7	-0.0	1.0	4.5	8.0	5546880.7	659160.1	1394.4	9.2	60.3	1.0
16	240.0	3.7	56.9	76.1	15	15.0	239.7	0.2	1.0	4.8	8.9	5546880.9	659161.1	1379.4	10.1	61.8	1.0
17	255.0	3.8	43.7	62.9	15	15.0	254.7	0.4	0.9	5.2	9.8	5546881.4	659161.9	1364.5	11.1	61.9	1.0
18	270.0	4.1	38.3	57.5	15	15.0	269.6	0.6	0.9	5.8	10.7	5546881.9	659162.8	1349.5	12.1	61.6	1.0
19	285.0	4.3	73.7	92.9	15	15.0	284.6	-0.1	1.1	5.7	11.8	5546881.9	659163.9	1334.6	13.1	64.0	1.1
20	300.0	4.3	72.9	92.1	15	15.0	299.6	0.0	1.1	5.7	12.9	5546881.8	659165.0	1319.6	14.1	66.2	1.1
21	315.0	4.4	46.8	66.0	15	15.0	314.5	0.5	1.0	6.2	13.9	5546882.3	659166.1	1304.7	15.2	66.2	1.1
22	330.0	4.6	56.2	75.4	15	15.0	329.5	0.3	1.1	6.5	15.1	5546882.6	659167.2	1289.7	16.4	66.8	1.2
23	345.0	4.8	65.7	84.9	15	14.9	344.4	0.1	1.2	6.6	16.3	5546882.7	659168.4	1274.8	17.6	68.1	1.2
24	360.0	4.8	53.0	72.2	15	14.9	359.3	0.4	1.2	7.0	17.5	5546883.1	659169.6	1259.8	18.8	68.3	1.3
25	375.0	4.9	60.1	79.3	15	14.9	374.3	0.2	1.2	7.2	18.8	5546883.3	659170.9	1244.9	20.1	69.0	1.3
26	390.0	5.2	47.1	66.3	15	14.9	389.2	0.5	1.2	7.7	20.0	5546883.8	659172.1	1229.9	21.4	68.9	1.3