000

E.L. 50/82

139001

NICHOLAS RANGE DRILLING PROGRAMME, APRIL/MAY 1985

BASIC DATA REPORT

DDH's 24, 25, 26, 27 AND 28

PREPARED FOR

CORNWALL COAL COMPANY N.L.

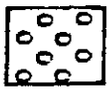
BY

McELROY BRYAN & ASSOCIATES PTY LIMITED

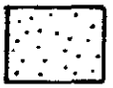
REPORT 60/1/9 J.H. BRYAN JUNE 1985

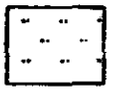
001

139002


CONGLOMERATE, pebble to granule

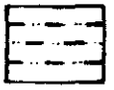

BRECCIA


SANDSTONE

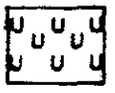

SILTSTONE


CLAYSTONE


STONE, COALY OR CARBONACEOUS


MUDSTONE


SHALE, SILTSHALE, CLAYSHALE


WEATHERED and UNCONSOLIDATED MATERIAL


INTERBEDDED


UNKNOWN


COAL, UNDIFFERENTIATED
(in sections of scale less than 1:50)


COAL, BRIGHT

COAL, BRIGHT with DULL BANDS

COAL, DULL and BRIGHT

COAL, MAINLY DULL with NUMEROUS BRIGHT BANDS

COAL, DULL to DULL with MINOR BRIGHT BANDS

COAL INTERLAYED with NON-COAL

NON-COAL INTERLAYED with COAL

COAL, STONY

STONE, COALY

COAL, WEATHERED

COAL, HEAT ALTERED


IGNEOUS, acid and intermediate


IGNEOUS, basic


SCREE, igneous-basic and clay

LEGEND FOR GRAPHIC LOGS & COAL SECTIONS

PREPARED BY McELROY BRYAN & ASSOCIATES PTY LTD

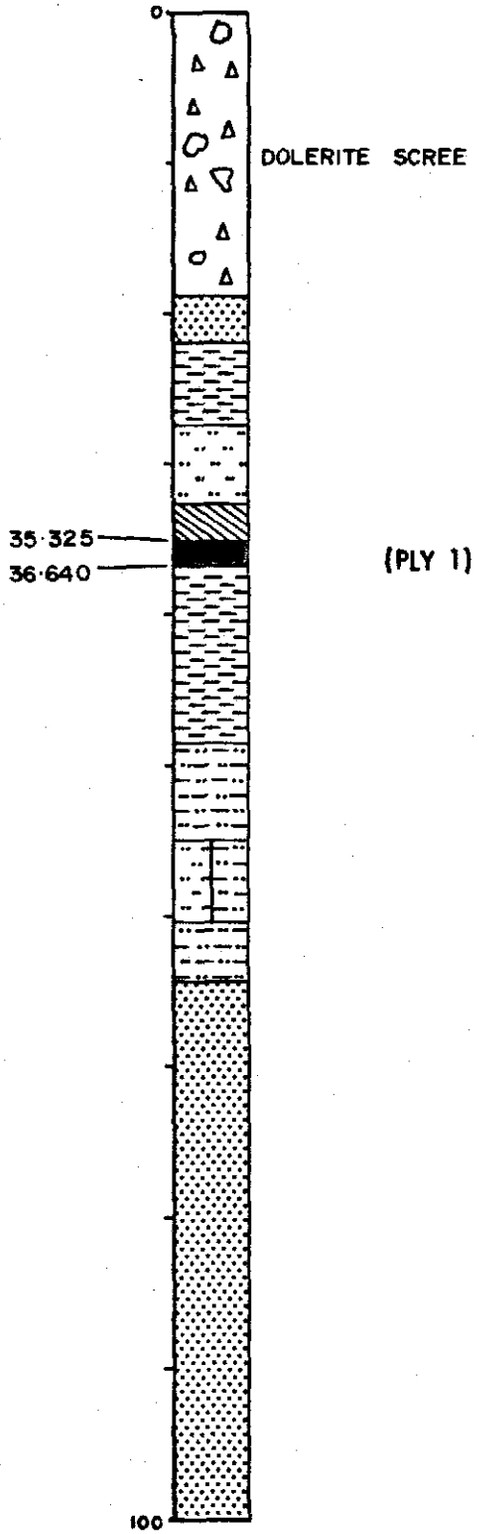
002

139003

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 24



5 cm

SCALE 1:20 DRAWN J.H.B. DATE January, 1985 PAGE 1 OF 2

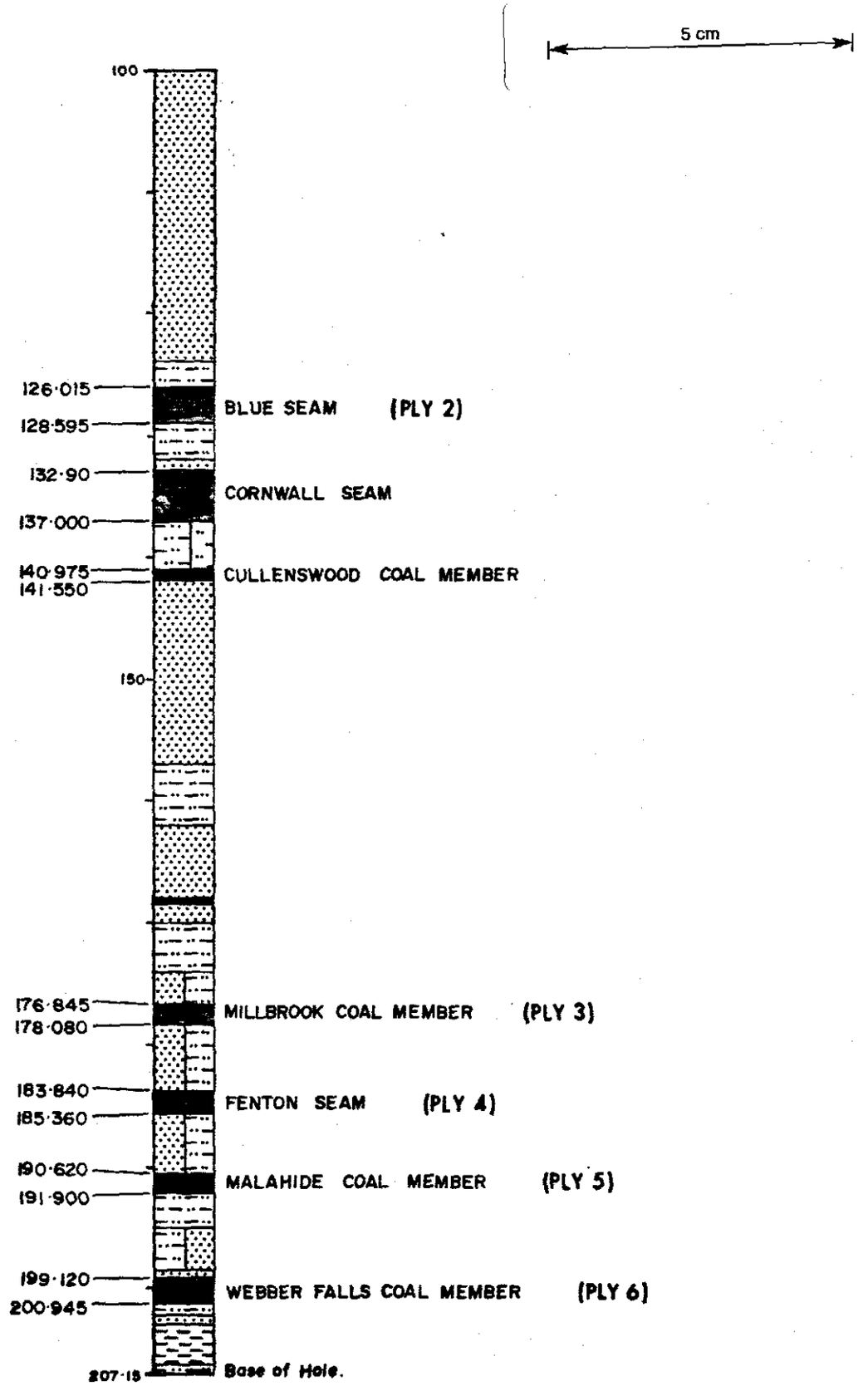
003

139004

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 24

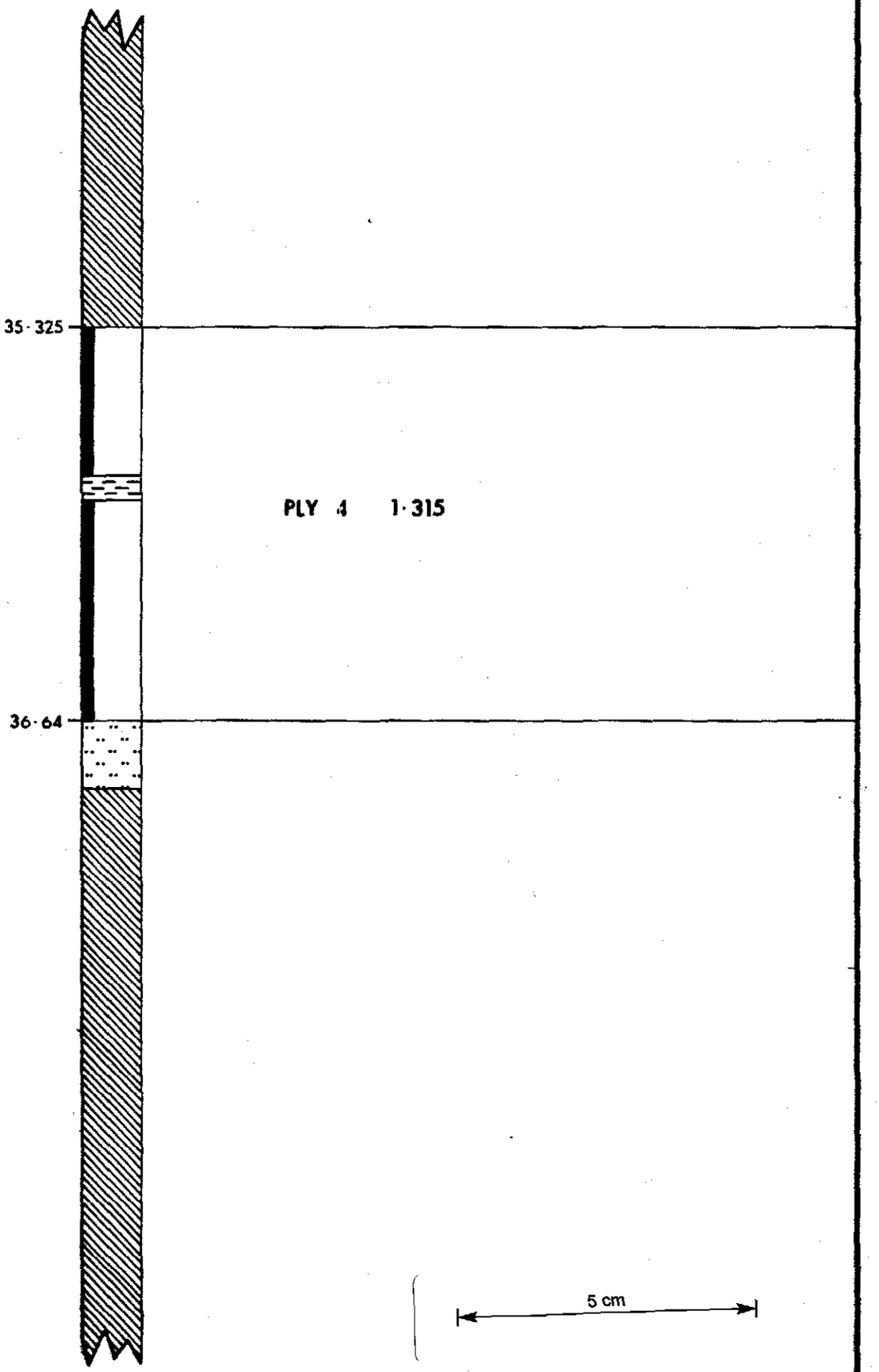


SCALE 1:20 DRAWN J.H.B. DATE January, 1985 PAGE 2 OF 2

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 24



SCALE 1:20 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

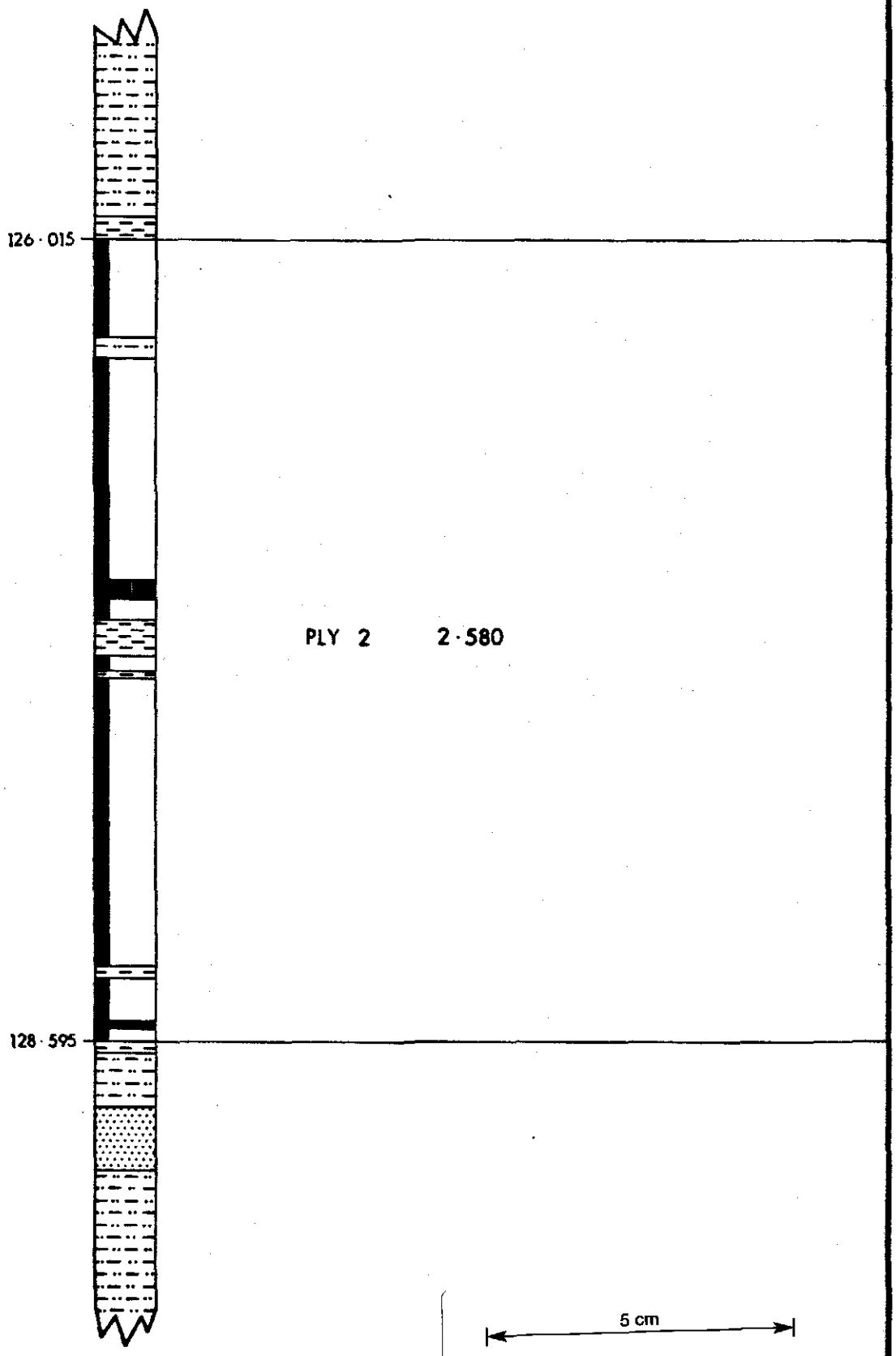
005

139006

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 24



SCALE 1:20 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

006

139007

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 24

Core loss
in coal

CORNWALL SEAM

4·100

(NOT SAMPLED)

SEAM MINED
OUT IN THIS AREA

5 cm

SCALE 1:20 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

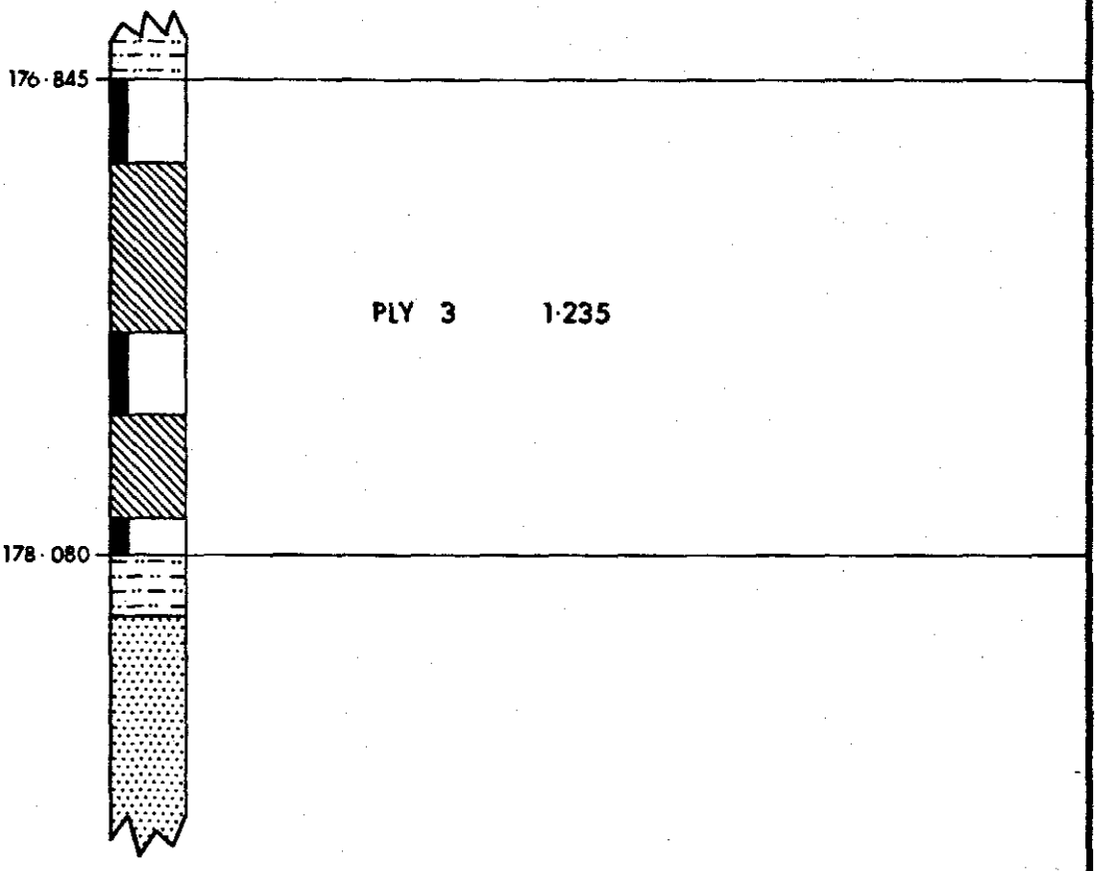
007

139008

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 24



5 cm

SCALE 1:20 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

008

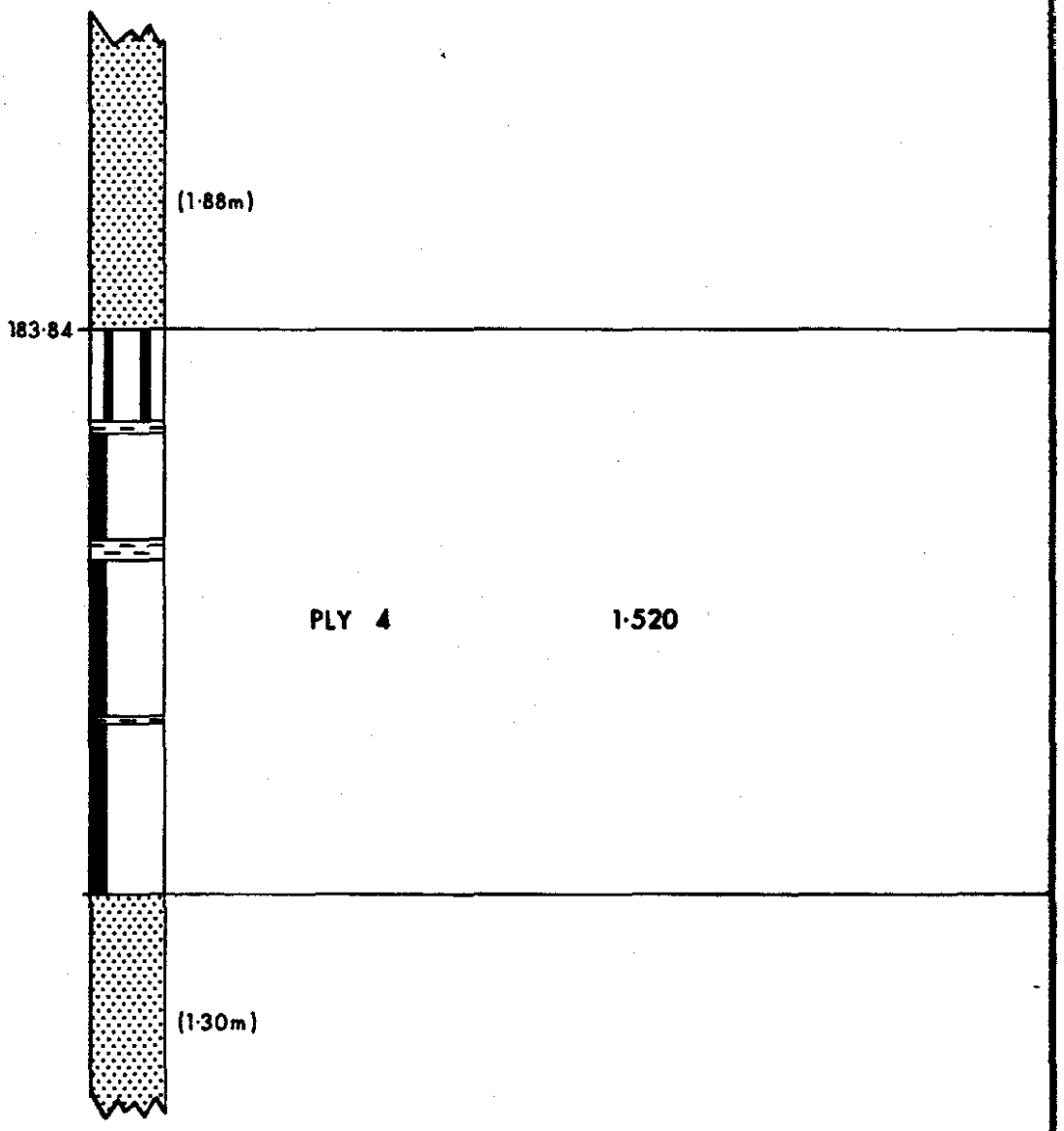
139009

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 24

Fenton Seam



5 cm

SCALE 1:20 DRAWN C.G.L. DATE January, 1985 PAGE 1 OF 1

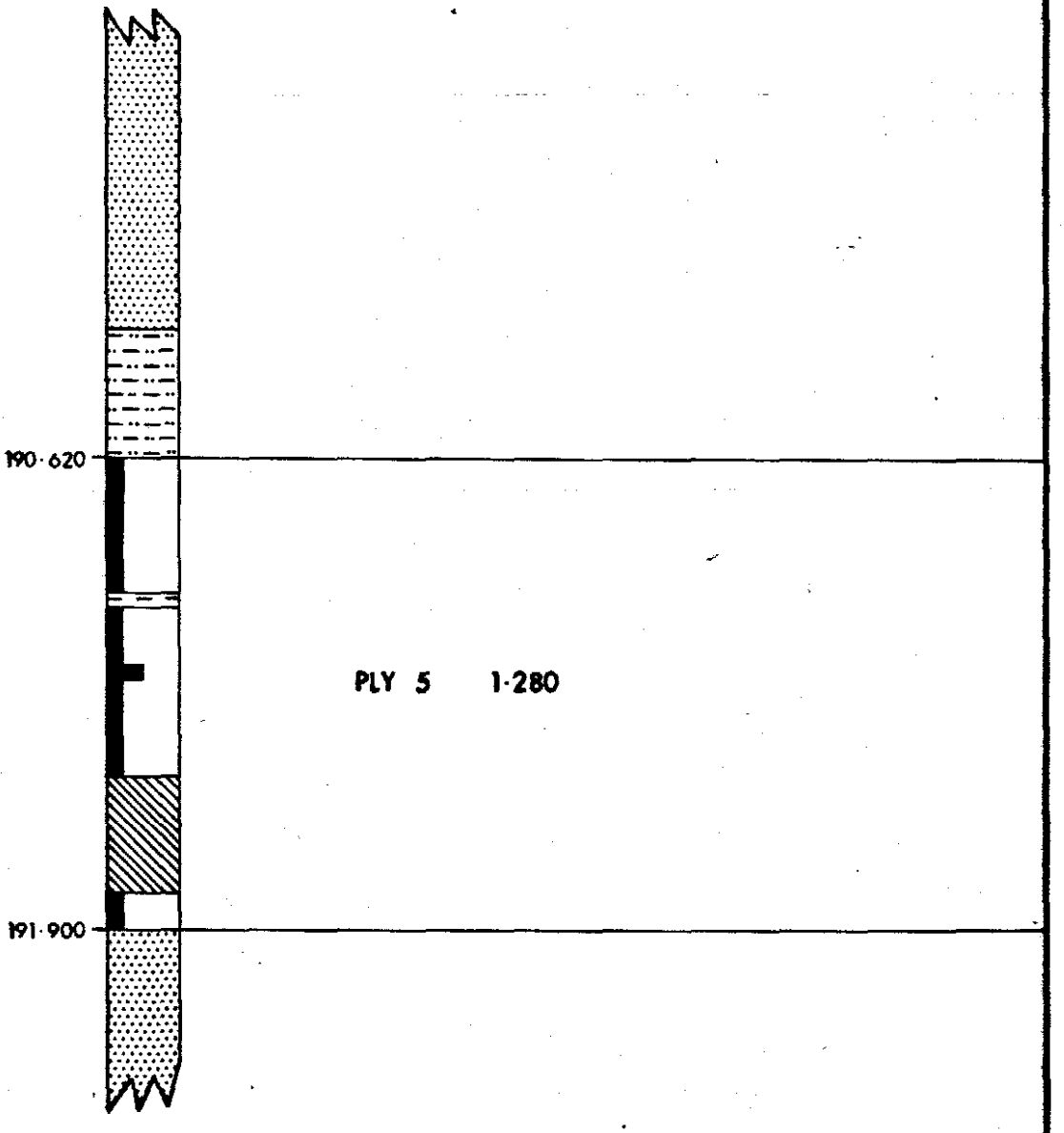
009

139010

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 24



SCALE 1:20 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

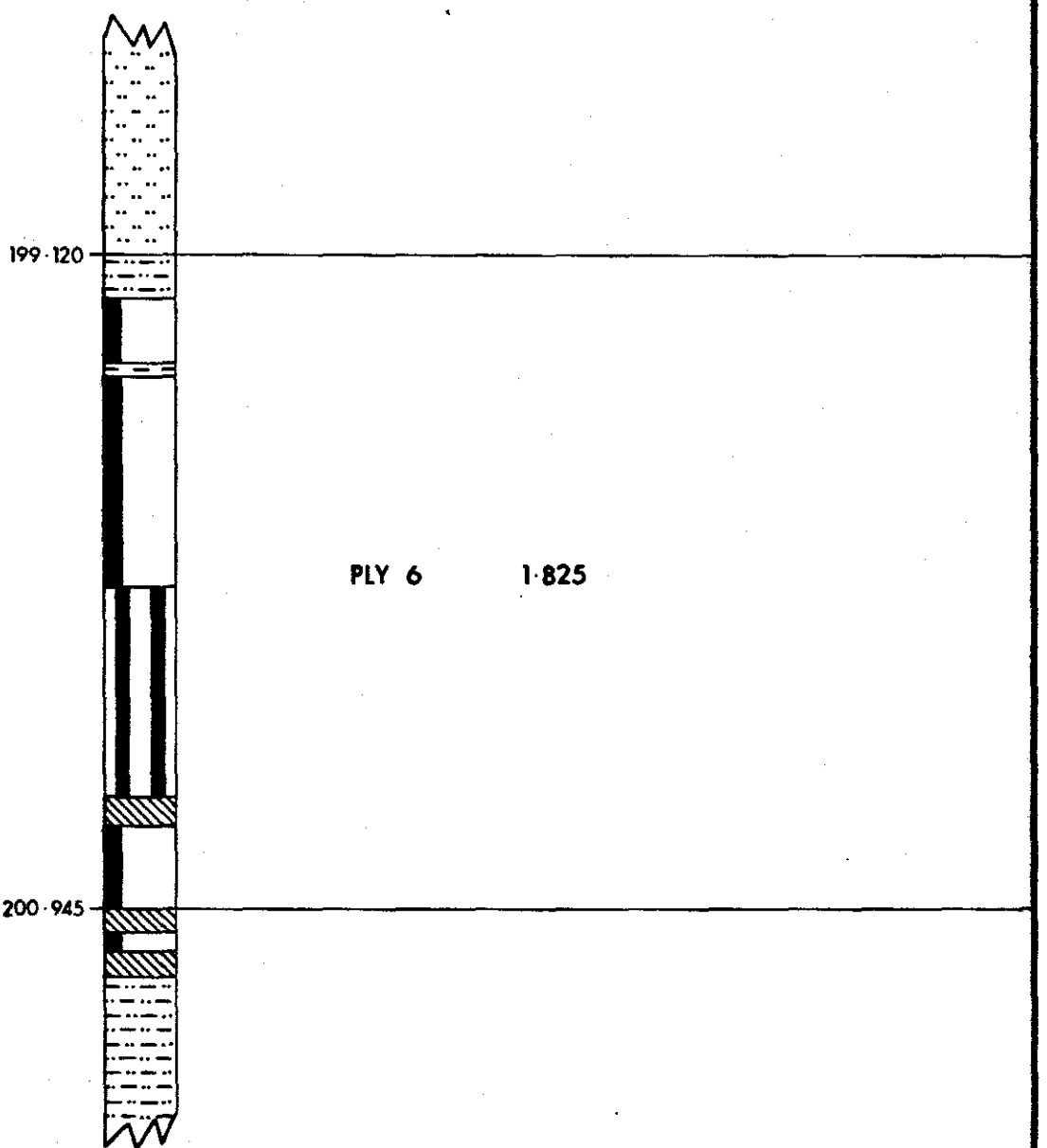
010

139011

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

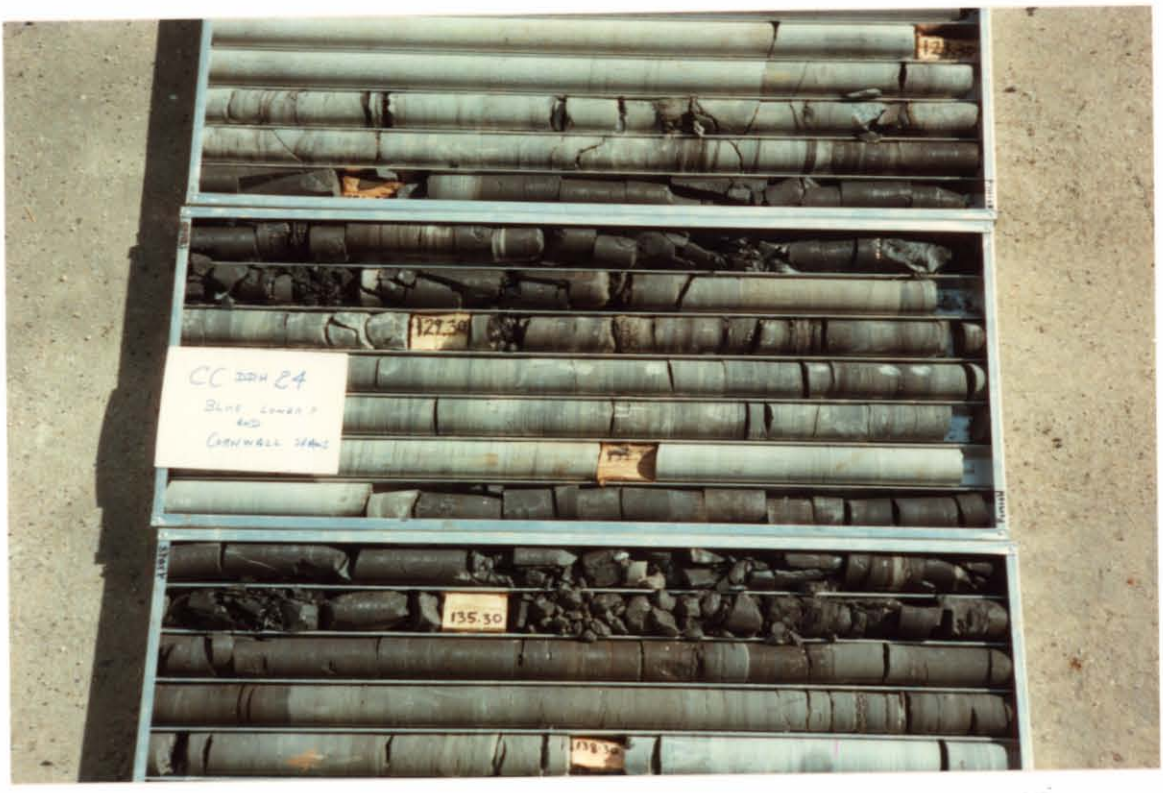
DDH 24



SCALE 1:20 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

011

139012



Cornwall Coal Mt Nicholas

DDH 24
Ply 2 126.015 - 128.595
Cornwall Seam 132.90 - 137.000

Cornwall Coal Mt Nicholas

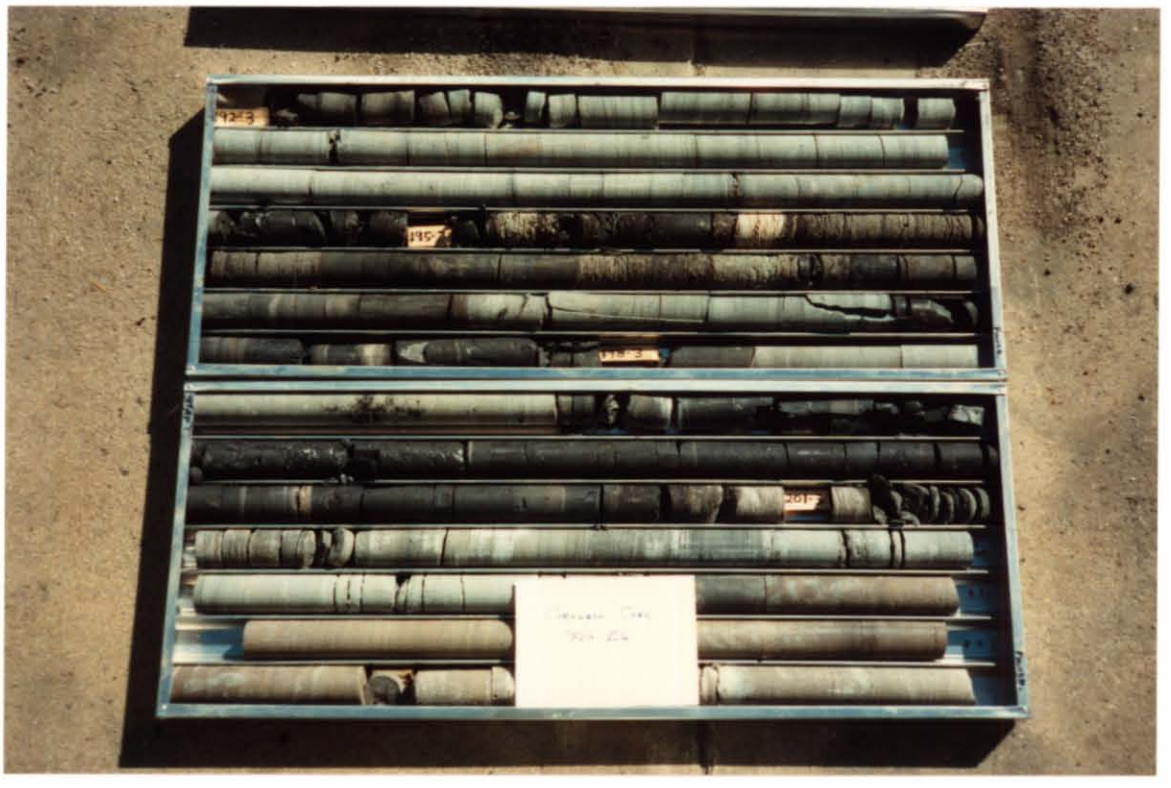
DDH 24
Ply 3 176.845 - 178.080
Ply 4 183.840 - 185.360

012

139013

Cornwall Coal Mt Nicholas

DDH 24
Ply 5 190.620 - 191.900



Cornwall Coal Mt Nicholas

DDH 24
Ply 6 199.120 - 200.945

013

139014

CORNWALL COAL MT NICHOLAS D.D.H. 24

Location: Mt. Nicholas
AMG Co-ordinates: E 595 924.5
N 5399 743.3
Collar R.L.: 603.6 m
Total Depth: 207.15 m

Logged by: J.H. Bryan
Drilled by: Stacpoole Drilling
Commenced: 1.4.85
Completed: 22.4.85

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
DOLERITE - scree (non core)	18.50	18.50	
SANDSTONE, grey, lithic, soft	3.00	21.50	
SILTSTONE, grey, hard	0.40	21.90	
CLAYSTONE, grey, soft at top, (core loss due to hard siltstone grinding away the soft claystone), becoming harder and carbonaceous with grey/green mudstone bands	5.33	27.23	
SILTSTONE, grey, hard, grading to sandstone, medium - becoming white and greasy towards base - tuffaceous?	5.32	32.55	
CLAYSTONE, dark grey to black, carbonaceous throughout with minor buff coloured soft claystone interbeds	2.775	35.325	
COAL, dull with minor bright bands	0.50	35.825	)
CLAYSTONE, grey to brown, hard	0.08	35.905	) PLY 1 Thickness: 1.315m

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
COAL, dull with minor bright bands	0.735	36.64)	PLY 1
SILTSTONE, grey, hard	0.22	36.86	
CLAYSTONE, dark grey to black (coaly in part) with interbeds of soft buff coloured claystone - ?tuffaceous	11.74	48.60	
MUDSTONE, grey, laminated in part, with occasional silty and sandy phases	6.49	55.09	
SILTSTONE/CLAYSTONE INTERBEDDED, with minor coaly bands - dark grey to black mostly with soft buff claystone in units up to 0.25m	5.34	60.43	
MUDSTONE, grey, weak - breaks up readily on exposure to air	3.68	64.11	
SANDSTONE, grey, lithic, fine grained at top, becoming coarser towards base, coaly wisps and bands are sporadic but up to 0.30m thick	59.89	124.00	
MUDSTONE, grey to grey-green - occasional carbonaceous wisps, irregular joints and fractures show slickensides	1.930	125.93	

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
CLAYSTONE, black, grey and green/grey	0.085	126.015	
COAL, dull	0.315	126.330	
MUDSTONE, grey, hard, laminated	0.060	126.390	
COAL, dull	0.715	127.105	
, bright	0.060	127.165	
, dull	0.070	127.235	
CLAYSTONE, grey with carbonaceous bands	0.105	127.340	?LOWER SEAM
COAL, dull with minor bright bands	0.040	127.380	PLY 2
CLAYSTONE, grey, hard	0.015	127.395	Thickness 2.58m
COAL, dull (core broken and crushed in part	0.935	128.330	
CLAYSTONE, grey, hard	0.025	128.355	
COAL, dull	0.145	128.500	
, bright	0.025	128.525	
, dull	0.070	128.595	
CLAYSTONE, grey/brown, carbonaceous	0.020	128.615	
MUDSTONE, grey	0.180	128.795	

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
SANDSTONE, grey/brown, medium, lithic, slightly carbonaceous	0.195	128.990	
MUDSTONE, grey with sandstone phases	0.335	129.325	
COAL, bright	0.025	129.350	
MUDSTONE, mid to dark grey and carbonaceous to coaly throughout	0.670	130.020	
MUDSTONE, grey with minor sandy phases	1.780	131.800	
SANDSTONE, grey, fine grained, lithic, hard	1.100	132.900	
MUDSTONE, grey, soft	0.055	132.955	)
CLAYSTONE, black, carbonaceous	0.030	132.985	)
COAL, dull and bright	0.025	133.010	)
CLAYSTONE, black, carbonaceous	0.470	133.480	) CORNWALL SEAM
COAL, dull	0.650	134.130	) (not sampled)) Thickness: 4.10m
CLAYSTONE, brown - ?tuffaceous	0.045	134.175	)
COAL, dull	0.240	134.415	)
CLAYSTONE, coaly	0.065	134.480	)

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
COAL, dull with lenticular grey claystone band 0.005m thick	0.400	134.880	CORNWALL SEAM
CORE LOSS in coal	0.420	135.300	
COAL, dull, core badly broken up, very difficult to drill due to high pressure!?	0.265	135.565	
, dull with occasional bands of coaly claystone	0.920	136.485	
MUDSTONE, grey/green	0.050	136.535	
COAL, dull to stony	0.070	136.605	
CLAYSTONE, mid grey to black, carbonaceous to coaly in part	0.395	137.000	
MUDSTONE, grey to grey/green, soft	1.390	138.390	
SILTSTONE, grey, hard with minor claystone bands	1.340	139.730	
CLAYSTONE, grey, soft, laminated	0.430	140.160	
CLAYSTONE, black, carbonaceous to coaly	0.520	140.680	
MUDSTONE, grey/green, laminated	0.295	140.975	

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
MUDSTONE, dark grey to black, carbonaceous	0.100	141.075	
COAL, dull to stony	0.210	141.285	CULLENSWOO COAL MEMBE Thickness: 0.575m
CLAYSTONE, brown, carbonaceous, soft, fissile	0.040	141.325	
CLAYSTONE, black, carbonaceous, coaly in part	0.225	141.550	
SANDSTONE, grey, lithic, hard, fine grained at top with some siltstone bands, mostly medium grained sandstone with some coarser and finer phases throughout	15.23	156.780	
MUDSTONE, grey to green/grey	0.550	157.330	
COAL, dull	0.030	157.360	
MUDSTONE, grey/green, laminated in part with minor fine grained sandstone interbeds	4.290	161.650	
SANDSTONE, grey, fine grained, thickly bedded	1.400	163.050	
SANDSTONE, grey, medium grained, lithic with occasional fine grained phases	4.730	167.780	

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
CLAYSTONE, grey, soft	0.070	167.850	
COAL, dull	0.060	167.910	
CLAYSTONE, brown, soft, laminated	0.020	167.930	
COAL, dull	0.090	168.020	
CLAYSTONE, black, carbonaceous	0.070	168.090	
SANDSTONE, fine grained, grey to dark grey and mostly carbonaceous	1.620	169.710	
MUDSTONE, grey to grey/green, soft with sandstone phases up to 0.4m thick	4.410	174.120	
SILTSTONE, grey, hard (competent unit)	0.550	174.670	
MUDSTONE, grey/green, soft	0.750	175.420	
SANDSTONE, grey, medium, lithic	1.160	176.580	
SILTSTONE, dark grey, hard	0.065	176.645	
SANDSTONE, grey, fine grained	0.080	176.725	
MUDSTONE, mid grey, hard	0.120	176.845	
COAL, dull	0.215	177.060	)
CLAYSTONE, black, coaly, carbonaceous throughout	0.440	177.500	) PLY 3 Thickness 1.235m

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
COAL, dull with grey claystone pebbles (0.03m across)	0.210	177.710	
CLAYSTONE, black, coaly throughout	0.270	179.980	PLY 3
COAL, dull, core broken in part	0.100	178.080	
MUDSTONE, grey to grey/green, hard, grading to sandstone unit below	0.150	178.230	
SANDSTONE, grey, lithic, medium grained	1.030	179.260	
MUDSTONE, grey/green, hard, abundant plant debris on bedding planes becoming sandy towards base	2.700	181.960	
SANDSTONE, grey, lithic, fine grained at top becoming coarser towards base	1.880	183.840	
COAL, dull to stony	0.250	184.090	
CLAYSTONE, brown, soft - ?tuffaceous	0.030	184.120	FENTON SEAM
COAL, dull	0.290	184.410	PLY 4
CLAYSTONE, brown to buff, soft, waxy, ?tuffaceous	0.055	184.465	Thickness 1.52m
COAL, dull	0.420	184.885	

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
CLAYSTONE, grey	0.020	184.905	FENTON SEAM PLY 4
COAL, dull	0.455	185.360	
SANDSTONE, grey, lithic, fine to medium grained	1.300	186.660	
MUDSTONE, grey, laminated in part, becoming sandy towards base	2.275	188.935	
SANDSTONE, grey, lithic, fine grained, hard, becoming coarser towards base sandstone becomes thinly bedded at base	1.335	190.270	
MUDSTONE, grey/green, laminated (weak 'strata parts readily along bedding planes)	0.350	190.620	
COAL, dull to stony	0.370	190.990	
CLAYSTONE, light grey, hard	0.035	191.025	
COAL, dull	0.165	191.190	
, dull and bright	0.030	191.220	
, dull	0.270	191.490	PLY 5 Thickness 1.28m
CLAYSTONE, black, coaly	0.320	191.810	
COAL, dull	0.090	191.900	

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
SANDSTONE, grey, lithic, fine grained, hard, carbonaceous in part, sub-vertical joints	0.540	192.440	
MUDSTONE, grey, laminated	1.010	193.450	
SILTSTONE, grey, hard (reasonably competent strata)	0.850	194.300	
MUDSTONE, grey, laminated, weak	0.760	195.060	
COAL, dull	0.280	195.340	
CLAYSTONE, buff, waxy, soft	0.050	195.390	
COAL, dull to stony, fissile in part	0.240	195.630	
CLAYSTONE, white to cream coloured	0.060	195.690	
MUDSTONE, dark grey to black, coaly in part and carbonaceous throughout	1.520	197.210	
MUDSTONE, grey to grey/green	0.530	197.740	
COAL, dull	0.120	197.860	
CLAYSTONE, black, carbonaceous	0.045	197.905	
COAL, dull	0.065	197.970	
CLAYSTONE, grey to black, carbonaceous	0.090	198.060	

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
COAL, dull to stony	0.240	198.300	
CLAYSTONE, black, carbonaceous	0.100	198.400	
SILTSTONE, grey, hard, grading to fine sandstone (competent strata)	0.720	199.120	
MUDSTONE, grey, soft, fissile	0.120	199.240	PLY 6 Thickness 1.825m
COAL, dull to stony	0.170	199.410	
CLAYSTONE, brown, hard, composed of claystone pellets	0.030	199.440	
COAL, dull	0.600	200.040	
, stony	0.580	200.620	
CLAYSTONE, grey to black, carbonaceous	0.085	200.705	
COAL, stony	0.240	200.945	
CLAYSTONE, black, carbonaceous	0.060	201.005	
COAL, dull	0.050	201.055	
CLAYSTONE, black, carbonaceous to coaly	0.080	201.135	
MUDSTONE, grey, irregular bedding	1.055	202.190	

CORNWALL COAL MT NICHOLAS D.D.H. 24

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
SANDSTONE, grey, lithic, medium grained	0.720	202.910	
CLAYSTONE, mid brown, massive, distinctive unit, different from all claystones above - becomes grey/brown or grey at about 205.0m	3.120	206.030	
CLAYSTONE, black to dark brown, carbonaceous throughout and coaly in part	0.220	206.250	
MUDSTONE, grey, laminated, hard	0.900	207.150	

BASE OF HOLE

025

· 139026

SGS Australia Pty Ltd
(incorporated in NSW)

74 McEvoy Street
Alexandria NSW 2015
Telephone (02) 699 7625
Telex 22395

McELROY BRYAN & ASSOCIATES
156 MOWBRAY ROAD
WILLOUGHBY N.S.W. 2068

ATTN : DR. J. H. BRYAN

REPORT NO: SL 2999 CLIENT REF. NO:.....

DATE SAMPLES IN: 19.04.85 DATE REPORT OUT: 26.04.85

SAMPLED IN ACCORDANCE WITH:.....

SAMPLE SUPPLIED BY CLIENT.

REPORT TITLE: ANALYSIS OF DDH CC 24 PLY 1 AND DDH CC PLY 2

The tests contained in this report have been carried out in accordance with the Australian Standards or other NATA approved methods listed below:

DETERMINED BY THIS LABORATORY NATA Reg. 1062

AS 1038 Pt. 1	Total Moisture
AS 1038 Pt. 3	Proximate Analysis
AS 1038 Pt. 5	Specific Energy
AS 1038 Pt. 6	Ultimate Analysis
AS 1038 Pt. 8	Chlorine (high temp)
AS 1038 Pt 9	Phosphorus
AS 1038 Pt. 11	Forms of Sulphur
AS 1038 Pt. 12.1	Crucible Swelling Number
AS 1038 Pt. 12.2	Gray King Coke Type
AS 1038 Pt. 14.1	Ash Analysis
AS 1038 Pt. 15	Fusibility of Ash
AS 1038 Pt. 20	Hardgrove Grindability Index
AS 1038 Pt. 21	Relative Density (density bottle)
AS 2137	Gieseler Plastometer automatic continuous stirring method
AS 2486	Reflectance of Vitrinite
AS 2515	Maceral Analysis
ISO 349	Audibert Arnu Dilatometer
ISO 335	Roga Index
ISO 1018	Moisture Holding Capacity
BS 1016 Pt. 17	Size Analysis
LECO Method	Total Sulphur

026

139027

SGS Australia Pty. Ltd.

REPORT No: SL 2999

DDH CC 24 PLY 1

COAL ANALYSIS REPORT

RAW COAL

Mass Received	3.242	kg
Moisture	5.6	%
Ash	34.5	%
Volatile Matter	22.9	%
Fixed Carbon	37.0	%
Relative Density	1.63	%

COLIN MEADS
MANAGER - LABORATORIES

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 2999

DDH CC 24 PLY 2

RAW COAL

Mass Received	kg	5.346
Moisture	%	5.2
Ash	%	26.0
Volatile Matter	%	24.0
Fixed Carbon	%	44.8
Relative Density		1.52

	Mass %	Ash %	
- 20 + 0.5mm	95.3	25.2	(calculated)
- 0.5mm + 0	4.7	28.7	
	100.0	25.4	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

		Fractional (%)		Cumulative (%)	
Relative Density		Mass	Ash	Mass	Ash
Floats	1.60	78.9	12.5	78.9	12.5
Sinks	1.60	21.1	72.7	100.0	25.2

-20 + 0.5mm

Floats 1.60 MATERIAL

Yield (of total)	%	75.2
Moisture	%	5.2
Ash	%	12.5
Volatile Matter	%	27.5
Fixed Carbon	%	54.8
Sulphur	%	0.34
Specific Energy (MJ/kg)		27.22
Relative Density		1.45

COLIN MEADS
MANAGER - LABORATORIES

028

139029

SGS (incorporated in NSW) **SGS Australia Pty Ltd**

74 McEvoy Street
Alexandria NSW 2015
Telephone (02) 699 7625
Telex 22395

McElroy Bryan & Associates
156 Mowbray Road,
WILLOUGHBY. N.S.W. 2068.

Attention: DR. J. H. BRYAN

REPORT NO: SL 3009 CLIENT REF. NO: Letter JHB:Vg 26/4/85.

DATE SAMPLES IN: 26/4/85 DATE REPORT OUT: 3/05/85

SAMPLED IN ACCORDANCE WITH:

REPORT TITLE: As analysis of samples cc 24 PLY 3 to cc 24 PLY 6.

The tests contained in this report have been carried out in accordance with the Australian Standards or other NATA approved methods listed below:

DETERMINED BY THIS LABORATORY NATA Reg. 1062

AS 1038 Pt. 1	Total Moisture
AS 1038 Pt. 3	Proximate Analysis
AS 1038 Pt. 5	Specific Energy
AS 1038 Pt. 6	Ultimate Analysis
AS 1038 Pt. 8	Chlorine (high temp)
AS 1038 Pt 9	Phosphorus
AS 1038 Pt. 11	Forms of Sulphur
AS 1038 Pt. 12.1	Crucible Swelling Number
AS 1038 Pt. 12.2	Gray King Coke Type
AS 1038 Pt. 14.1	Ash Analysis
AS 1038 Pt. 15	Fusibility of Ash
AS 1038 Pt. 20	Hardgrove Grindability Index
AS 1038 Pt. 21	Relative Density (density bottle)
AS 2137	Gieseler Plastometer automatic continuous stirring method
AS 2486	Reflectance of Vitrinite
AS 2515	Maceral Analysis
ISO 349	Audibert Arnu Dilatometer
ISO 335	Roga Index
ISO 1018	Moisture Holding Capacity
BS 1016 Pt. 17	Size Analysis
LECO Method	Total Sulphur

Samples supplied by client.

Analytical data on air-dried basis.

029

139030

SGS Australia Pty. Ltd.

REPORT No: SL 3009

Analysis \ Sample Ref.	cc 24 PLY 3 Raw Coal		cc 24 PLY 5 Raw Coal			
Total Moisture %						
Moisture %	5.7		5.9			
Ash %	43.1		37.0			
Volatile Matter %	19.0		20.3			
Fixed Carbon %	32.2		36.8			
Crucible Swelling No.						
Total Sulphur %						
Specific Energy Mj/kg						
Mass Kg	3.084		3.022			
Relative Density	1.72		1.66			

Analysis \ Sample Ref.						
Total Moisture %						
Moisture %						
Ash %						
Volatile Matter %						
Fixed Carbon %						
Crucible Swelling No.						
Total Sulphur %						
Specific Energy Mj/kg						

BASIS RESULTS REPORTED ON Air - Dried

030

139031

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3009

cc 24 PLY 4

RAW COAL

Mass Received	kg	3.548
Moisture	%	6.6
Ash	%	30.8
Volatile Matter	%	20.3
Fixed Carbon	%	42.3
Relative Density		1.61

	Mass %	Ash %	
- 20 + 0.5mm	94.9	29.0	(calculated)
- 0.5mm + 0	5.1	42.4	
	100.0	29.0	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

		Fractional (%)		Cumulative (%)	
Relative Density		Mass	Ash	Mass	Ash
Floats	1.60	67.6	16.5	67.6	16.5
1.60 - F	1.70	9.4	38.0	77.0	19.1
Sinks	1.70	23.0	62.1	100.0	29.0

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	5.8	5.9
Ash	%	16.5	19.1
Volatile Matter	%	24.2	23.3
Fixed Carbon	%	53.5	51.7
Sulphur	%	0.35	0.33
Specific Energy (MJ/kg)		26.04	24.72
Relative Density		1.47	1.49

031

139032

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No :

cc 24 PLY 6

RAW COAL

Mass Received	kg	3.002
Moisture	%	4.7
Ash	%	42.9
Volatile Matter	%	17.1
Fixed Carbon	%	35.3
Relative Density		1.77

	Mass %	Ash %	
- 20 + 0.5mm	96.4	43.3	(calculated)
- 0.5mm + 0	3.6	38.8	
	100.0	43.3	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

Relative Density		Fractional (%)		Cumulative (%)	
		Mass	Ash	Mass	Ash
Floats	1.60	28.2	21.2	28.2	21.2
S/ 1.60 - F	1.70	24.5	34.7	52.7	27.5
Sinks	1.70	47.3	61.0	100.0	43.3

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	5.0	4.8
Ash	%	21.2	27.6
Volatile Matter	%	20.5	19.4
Fixed Carbon	%	53.3	48.20
Sulphur	%	0.22	0.18
Specific Energy (MJ/kg)		24.02	21.40
Relative Density		1.54	1.63

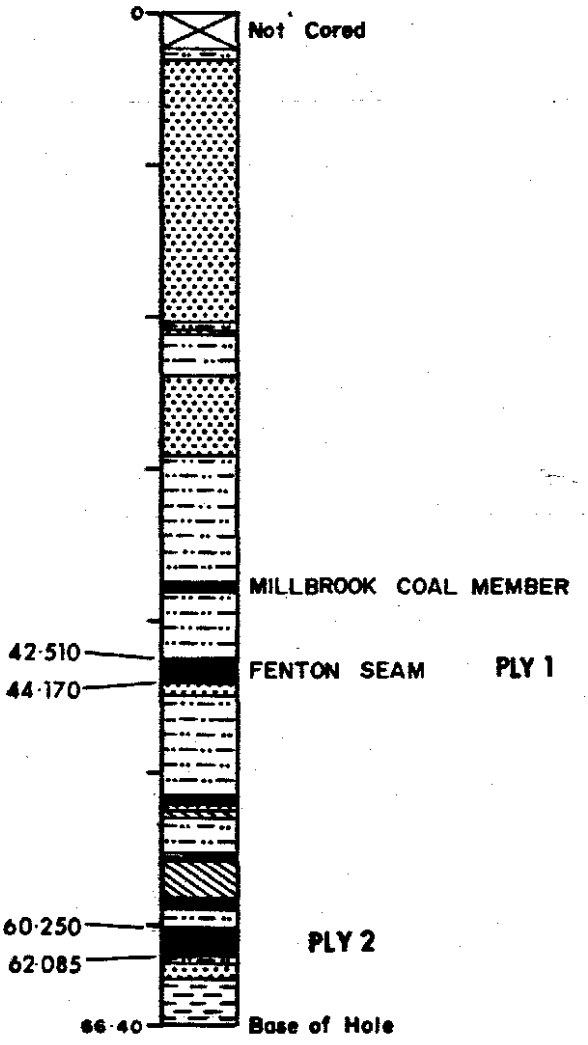
032

139033

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 25



5 cm

SCALE 1:500 DRAWN C.G.L. DATE MAY, 1985. PAGE 1 OF 1

033

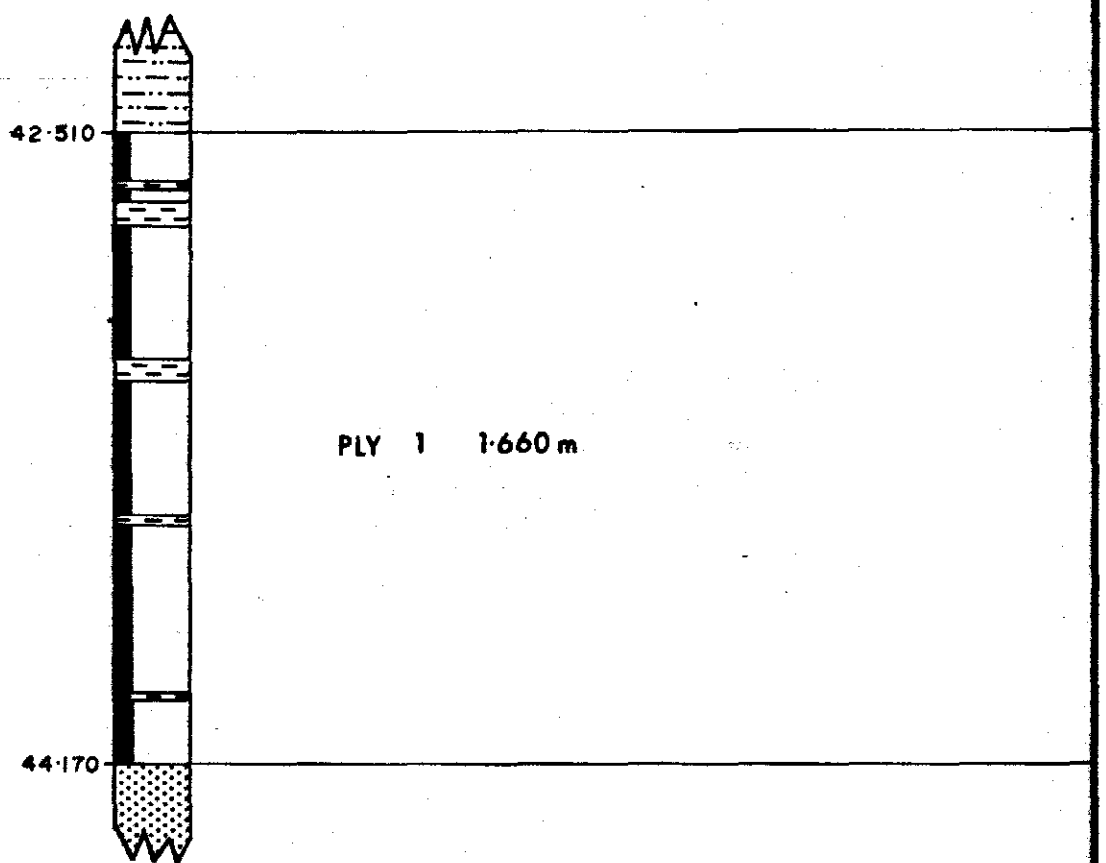
139034

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 25

Fenton Seam



5 cm

SCALE 1:20 DRAWN C.G.L. DATE MAY, 1985 PAGE 1 OF 1

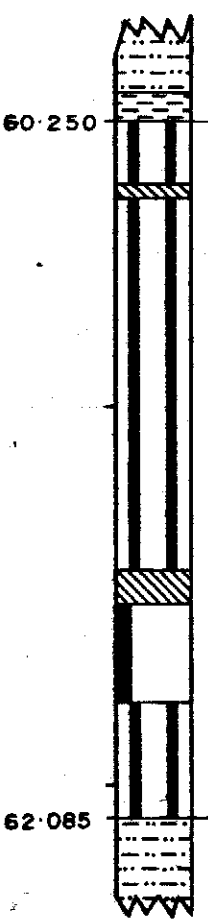
034

139035

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 25



PLY 2 1·835m

5 cm

SCALE 1:20 DRAWN C.G.L. DATE MAY, 1985 PAGE 1 OF 1

035

139036

Cornwall Coal Mt Nicholas

DDH 25
Ply 1 42.510 - 44.170

Cornwall Coal Mt Nicholas

DDH 25
Ply 2 60.250 - 62.085

036

139037

CORNWALL COAL MT NICHOLAS D.D.H. 25

Location: 1.2km N.E. of Cornwall Village
AMG Co-ordinates: E $_{5}96\ 079.5$
N $_{53}99\ 185.0$
Collar R.L.: 459.2
Total Depth: 66.40m

Logged by: J.H. Bryan
Drilled by: Stacpoole Drilling
Commenced: 23.4.85
Completed: 26.4.85

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remark
SOIL and WEATHERED SANDSTONE	2.70	2.70	Tricone Roller Bit 0 - 2.70m
MUDSTONE, brown/grey, moderately weathered	0.650	3.35	
SANDSTONE, brown, slightly to moderately weathered - minor mudstone interbeds (unweathered from 7.5m to 10.0m) (unweathered from 17.5m except for ironstained joints)	17.12	20.47	
MUDSTONE, grey with ironstained joints	0.40	20.87	
SANDSTONE, grey, fine grained	0.38	21.25	
MUDSTONE, grey to grey/green, core broken in part, numerous joints	2.45	23.70	
SANDSTONE, grey, medium grained, lithic, massive	5.55	29.25	
MUDSTONE, black to dark grey, carbonaceous to coaly	0.260	29.51	

CORNWALL COAL MT NICHOLAS D.D.H. 25

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
MUDSTONE, grey/green, partly sandy, soft, abundant plant debris on bedding planes	8.09	37.60	
CORE LOSS AT TOP OF COAL	0.39	37.99	
COAL, dull	0.23	38.22	Millbrook Coal Member Thickness: 0.38m
CLAYSTONE, black, coaly	0.08	38.30	
COAL, dull	0.07	38.37	
CLAYSTONE, dark brown/black, carbonaceous	0.050	38.42	
MUDSTONE, grey, soft, with minor sandstone interbeds, parts readily along bedding planes (weak strata; poor roof), carbonaceous at base	4.09	42.51	
COAL, dull	0.120	42.63	FENTON SEAM Thickness: 1.66m PLY 1
CLAYSTONE, grey, hard	0.020	42.65	
COAL, dull	0.035	42.685	
CLAYSTONE, grey/brown, waxy, soft	0.065	42.75	
COAL, dull	0.350	43.10	

038

CORNWALL COAL MT NICHOLAS D.D.H. 25

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
CLAYSTONE, brown, soft, ?tuffaceous	0.060	43.16	
COAL, dull	0.350	43.51	FENTON SEAM
CLAYSTONE, grey, soft	0.030	43.54	PLY 1
COAL, dull	0.440	43.98	
CLAYSTONE, grey/brown, soft	0.020	44.00	
COAL, dull with minor bright bands	0.170	44.17	
SANDSTONE, grey, lithic, clayey	0.860	45.03	
MUDSTONE, grey, soft, some sandy phases	6.52	51.55	
COAL, dull to stony	0.37	51.92	
CLAYSTONE, grey, hard	0.035	51.955	
COAL, dull to stony	0.125	52.08	
SANDSTONE, grey/brown, carbonaceous	0.260	52.34	
MUDSTONE, black, carbonaceous	0.290	52.63	
MUDSTONE, dark grey at top becoming grey to grey/green	2.68	55.31	

CORNWALL COAL MT NICHOLAS D.D.H. 25

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
COAL, dull to stony	0.200	55.51	
CLAYSTONE, brown, fissile	0.015	55.525	
COAL, dull	0.160	55.685	
CLAYSTONE, brown, fissile	0.020	55.705	
COAL, dull to stony	0.180	55.885	
CLAYSTONE, grey, soft, waxy	0.040	55.925	
MUDSTONE, black, carbonaceous	2.275	58.20	
MUDSTONE, grey/green	0.36	58.56	
COAL, dull to stony	0.47	59.03	
MUDSTONE, grey to grey/green with numerous sandy phases (relatively weak roof strata - more competent than most mudstones)	1.15	60.18	
CLAYSTONE, brown to black, hard	0.070	60.25	
COAL, stony	0.165	60.415	PLY 2 Thickness: 1.835m
CLAYSTONE, black, carbonaceous	0.040	60.455	
COAL, dull to stony	0.980	61.435	

040

139041

CORNWALL COAL MT NICHOLAS D.D.H. 25

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
CLAYSTONE, black, carbonaceous	0.090	61.525	)
			) PLY 2
COAL, dull	0.260	61.785	)
			)
COAL, stony	0.300	62.085	)
MUDSTONE, grey	0.460	62.545	
SANDSTONE, grey to grey/brown, lithic	1.125	63.67	
CLAYSTONE, black, carbonaceous at top, grading to mid brown, hard (distinctive claystone below Webber Falls Coal Member), occasional thin coaly phases	2.73	66.40	
			BASE OF HOLE

041

139042

SGS Australia Pty Ltd
(incorporated in NSW)

74 McEvoy Street
Alexandria NSW 2015
Telephone (02) 699 7625
Telex 22395

McElroy Bryan and Associates
Pty Limited,
156 Mowbray Road,
WILLOUGHBY NSW 2068

Attn: Dr John H. Bryan

REPORT NO: SL 3017.....CLIENT REF. NO:.....

DATE SAMPLES IN: 2/05/85.....DATE REPORT OUT: 13/05/85.....

SAMPLED IN ACCORDANCE WITH:.....

.....

.....

REPORT TITLE: ANALYSIS OF SAMPLES MARKED "CC 25 PLY 1" AND "CC 25 PLY 2"

The tests contained in this report have been carried out in accordance with the Australian Standards or other NATA approved methods listed below:

DETERMINED BY THIS LABORATORY NATA Reg. 1062

AS 1038 Pt. 1	Total Moisture
AS 1038 Pt. 3	Proximate Analysis
AS 1038 Pt. 5	Specific Energy
AS 1038 Pt. 6	Ultimate Analysis
AS 1038 Pt. 8	Chlorine (high temp)
AS 1038 Pt 9	Phosphorus
AS 1038 Pt. 11	Forms of Sulphur
AS 1038 Pt. 12.1	Crucible Swelling Number
AS 1038 Pt. 12.2	Gray King Coke Type
AS 1038 Pt. 14.1	Ash Analysis
AS 1038 Pt. 15	Fusibility of Ash
AS 1038 Pt. 20	Hardgrove Grindability Index
AS 1038 Pt. 21	Relative Density (density bottle)
AS 2137	Gieseler Plastometer automatic continuous stirring method
AS 2486	Reflectance of Vitrinite
AS 2515	Maceral Analysis
ISO 349	Audibert Arnu Dilatometer
ISO 335	Roga Index
ISO 1018	Moisture Holding Capacity
BS 1016 Pt. 17	Size Analysis
LECO Method	Total Sulphur

SAMPLES SUPPLIED BY CLIENT.

ANALYTICAL DATA ON AIR DRIED BASIS.

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3017

CC25 PLY 1

RAW COAL

Mass Received	3.592	kg
Moisture	4.5	%
Ash	29.9	%
Volatile Matter	21.8	%
Fixed Carbon	43.8	%
Relative Density	1.61	

	Mass %	Ash %	
- 20 + 0.5mm	96.1	30.8	(calculated)
- 0.5mm + 0	3.9	42.5	
	100.0	31.3	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

Relative Density		Fractional (%) Mass	Fractional (%) Ash	Cumulative (%) Mass	Cumulative (%) Ash
Floats	1.60	74.2	17.0	74.2	17.0
S/ 1.60 - F	1.70	4.5	37.8	78.7	18.2
Sinks	1.70	21.3	77.4	100.0	30.8

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	6.2	6.2
Ash	%	17.0	18.2
Volatile Matter	%	24.2	23.9
Fixed Carbon	%	52.6	51.7
Sulphur	%	0.41	0.42
Specific Energy (MJ/kg)		25.34	24.96
Relative Density		1.50	1.51

Bruce Lonnon
Manager.Sydney Laboratory.

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3017

cc 25 PLY 2

RAW COAL

Mass Received	kg	4.646
Moisture	%	3.5
Ash	%	46.9
Volatile Matter	%	17.0
Fixed Carbon	%	32.6
Relative Density		1.85

	Mass %	Ash %	
- 20 + 0.5mm	97.2	47.6	(calculated)
- 0.5mm + 0	2.8	43.8	
	100.0	47.5	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

		Fractional (%)		Cumulative (%)	
Relative Density		Mass	Ash	Mass	Ash
Floats	1.60	27.7	23.1	27.7	23.1
S 1.60 - F 1.70		17.5	35.6	45.2	27.9
Sinks	1.70	54.8	63.8	100.0	47.6

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	5.2	5.1
Ash	%	23.1	28.0
Volatile Matter	%	20.6	19.7
Fixed Carbon	%	51.1	47.2
Sulphur	%	0.26	0.25
Specific Energy (MJ/kg)		22.84	21.12
Relative Density		1.58	1.63

Bruce Lonnon
Manager - Sydney Laboratory

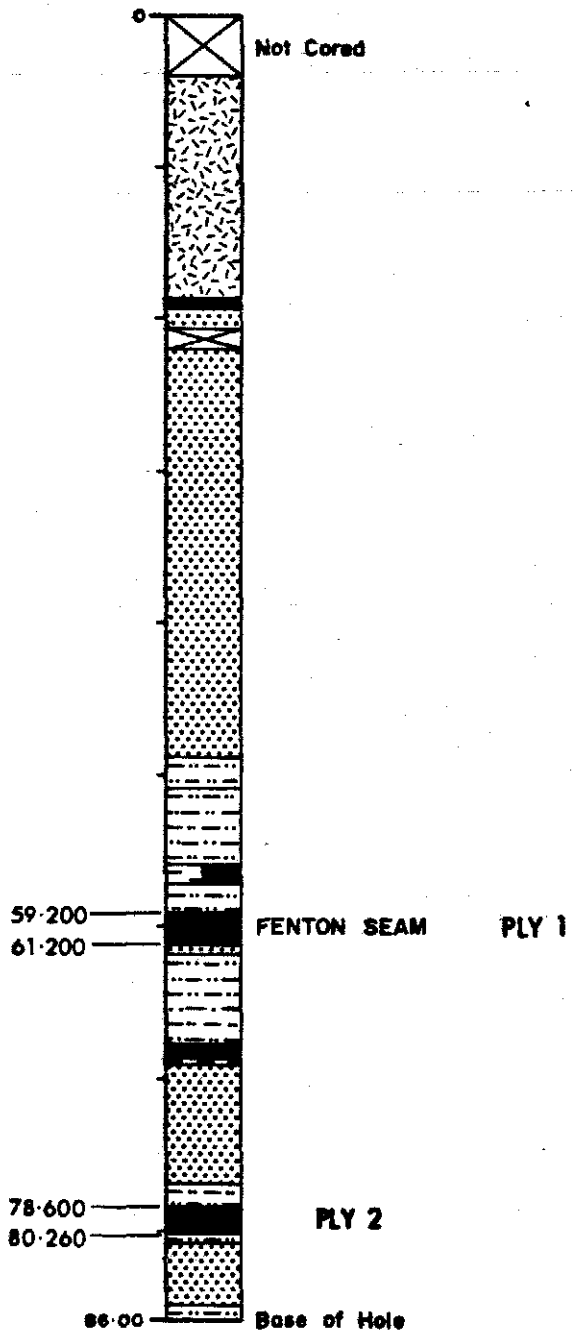
044

139045

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 26



5 cm

SCALE 1:20 DRAWN C.G.L. DATE MAY, 1985. PAGE 1 OF 1

045

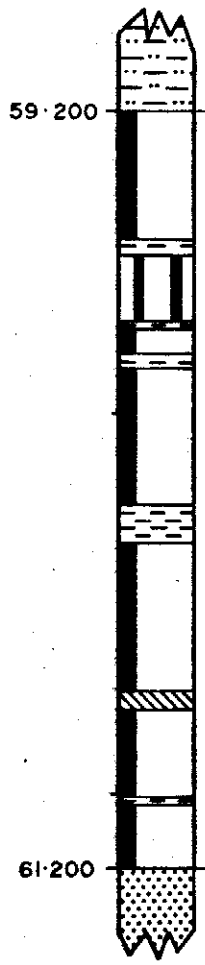
139046

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 26

Fenton Seam



PLY 1 2·000 m

5 cm

SCALE 1:20 DRAWN C.G.L. DATE MAY, 1985 PAGE 1 OF 1

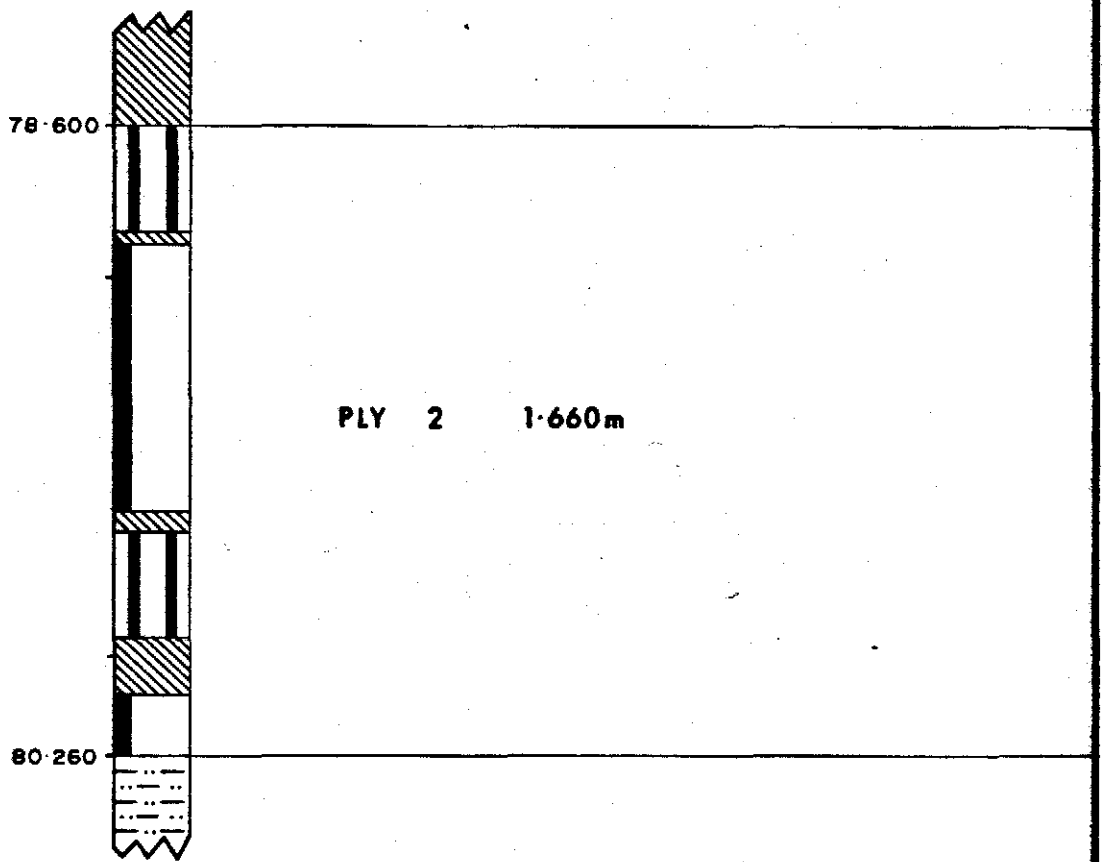
046

139047

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 26



5 cm

SCALE 1:20 DRAWN C.G.L. DATE MAY, 1985 PAGE 1 OF 1

Cornwall Coal Mt Nicholas

DDH 26
Ply 1 59.200 - 61.200

Cornwall Coal Mt Nicholas

DDH 26
Ply 2 78.600 - 80.260

048

139049

CORNWALL COAL MT NICHOLAS D.D.H. 26

Location: 300m East of Blackwood Colliery
AMG Co-ordinates: E 594 307.7
N 5398 638.0
Collar R.L.: 432.3
Total Depth: 86.00m

Logged by: J.H. Bryan
Drilled by: Stacpoole Drilling
Commenced: 2.5.85
Completed: 7.5.85

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
SOIL (non core to 4.20m) and DOLERITE SCREE (HQ Core to 18.00m)	18.67	18.67	
COAL, dull	0.50	19.17	
MUDSTONE, grey/brown, grading to sandstone below	0.29	19.46	
SANDSTONE, grey, lithic, fine grained at top but becoming coarser at 21.0m medium grained	1.34	20.80	
CORE LOSS	1.10	21.90	
SANDSTONE, as above, massive with several mudstone bands towards base (some siderite in claystone/mudstone bands)	27.02	48.92	
MUDSTONE, grey to black, coaly in part with some minor sandstone	1.97	50.89	
MUDSTONE, grey, soft with some sandy phases	4.91	55.80	

CORNWALL COAL MT NICHOLAS D.D.H. 26

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
COAL, dull to stony	0.27	56.07	
CLAYSTONE, black, hard with sandstone lenses	0.08	56.15	
CLAYSTONE, dark brown to black	0.37	56.52	
COAL, dull	0.23	56.75	
CLAYSTONE, mid brown, hard	0.030	56.78	
CLAYSTONE, black, coaly	0.150	56.93	
COAL, dull	0.180	57.11	
CLAYSTONE, brown	0.015	57.125	
CLAYSTONE, black, coaly	0.040	57.165	
MUDSTONE, grey, laminated in part, minor carbonaceous phases	2.035	59.200	
COAL, dull	0.34	59.54	)
CLAYSTONE, mid brown, fissile	0.05	59.59	) FENTON SEAM
COAL, stony	0.17	59.76	) Thickness: 2.000m
CLAYSTONE, grey, hard	0.010	59.77	) PLY 1
COAL, dull	0.070	59.84	)

CORNWALL COAL MT NICHOLAS D.D.H. 26

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
CLAYSTONE, grey, hard	0.040	59.88	
COAL, dull	0.360	60.24	
CLAYSTONE, white	0.100	60.34	
COAL, dull	0.390	60.73	FENTON SEAM PLY 1
CLAYSTONE, black, carbonaceous	0.050	60.78	
COAL, dull	0.230	61.01	
CLAYSTONE, brown	0.020	61.03	
COAL, dull with minor bright bands	0.170	61.20	
SANDSTONE, grey, lithic, fine grained	0.64	61.84	
MUDSTONE, grey, laminated in part (occasional coaly bands) interbedded with fine grained grey sandstone (60:40)	6.06	67.90	
COAL, dull	0.300	68.20	
CLAYSTONE, brown to black	0.050	68.25	
COAL, dull to stony	0.450	68.70	
CLAYSTONE, grey to black, grading to sandy claystone	0.220	68.92	

CORNWALL COAL MT NICHOLAS D.D.H. 26

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
SANDSTONE, grey, lithic, fine to medium grained with minor mudstone bands (massive sandstone unit)	8.08	77.00	
MUDSTONE, black to brown, coaly in part, carbonaceous throughout, minor sandy phases	1.60	78.60	
COAL, dull to stony	0.28	78.88	PLY 2 Thickness: 1.66m
CLAYSTONE, black, carbonaceous	0.030	78.91	
COAL, dull	0.710	79.62	
CLAYSTONE, black, coaly	0.050	79.67	
COAL, dull to stony	0.280	79.95	
CLAYSTONE, black, carbonaceous	0.150	80.10	
COAL, dull	0.160	80.26	
MUDSTONE, grey/brown, black, coaly in part	0.100	80.36	
MUDSTONE, brown to grey brown, grading to sandstone	0.46	80.82	
SANDSTONE, grey, lithic, fine grained, hard	4.19	85.01	

CORNWALL COAL MT NICHOLAS D.D.H. 26

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
MUDSTONE, grey/green	0.250	85.26	
MUDSTONE, brown (Marker bed)	0.74	86.00	

BASE OF HOLE

053

139054

SGS Australia Pty Ltd
(incorporated in NSW)
74 McEvoy Street
Alexandria NSW 2015
Telephone (02) 699 7625
Telex 22395

McElroy Bryan & Associates Pty Ltd
P. O. Box 34
Willoughby N.S.W. 2068
Attn: Dr. J. H. Bryan

REPORT NO: SL 3043 CLIENT REF. NO: Letter J.H.B.:vg 24/05/85
DATE SAMPLES IN: 24/05/85 DATE REPORT OUT: 5/06/85
SAMPLED IN ACCORDANCE WITH:

SAMPLE SUPPLIED BY CLIENT.

REPORT TITLE: ANALYSES OF SAMPLES MARKED CC26 PLIES 1-2, CC27 PLIES 1-2, AND CC28 PLIES 1-3.

The tests contained in this report have been carried out in accordance with the Australian Standards or other NATA approved methods listed below:

DETERMINED BY THIS LABORATORY NATA Reg. 1062

AS 1038 Pt. 1	Total Moisture
AS 1038 Pt. 3	Proximate Analysis
AS 1038 Pt. 5	Specific Energy
AS 1038 Pt. 6	Ultimate Analysis
AS 1038 Pt. 8	Chlorine (high temp)
AS 1038 Pt 9	Phosphorus
AS 1038 Pt. 11	Forms of Sulphur
AS 1038 Pt. 12.1	Crucible Swelling Number
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AS 1038 Pt. 20	Hardgrove Grindability Index
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AS 2515	Maceral Analysis
ISO 349	Audibert Arnu Dilatometer
ISO 335	Roga Index
ISO 1018	Moisture Holding Capacity
BS 1016 Pt. 17	Size Analysis
LECO Method	Total Sulphur

ANALYTICAL RESULTS ON AIR DRIED BASIS

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3043

DDH CC26 PLY 1

RAW COAL

Mass Received	kg	5.024
Moisture	%	5.5
Ash	%	37.3
Volatile Matter	%	23.0
Fixed Carbon	%	34.2
Relative Density		1.70

	Mass %	Ash %	
- 20 + 0.5mm	95.3	35.9	(calculated)
- 0.5mm + 0	4.7	42.5	
	100.0	36.2	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

		Fractional (%)		Cumulative (%)	
Relative Density		Mass	Ash	Mass	Ash
Floats	1.60	54.2	15.5	54.2	15.5
S 1.60 - F	1.70	8.3	37.1	62.5	18.4
Sinks	1.70	37.5	65.2	100.0	35.9

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	5.8	5.4
Ash	%	15.5	18.4
Volatile Matter	%	26.3	25.4
Fixed Carbon	%	52.4	50.8
Sulphur	%	0.36	0.35
Specific Energy (MJ/kg)		26.10	25.16
Relative Density		1.44	1.49

B. LONNON
MANAGER - SYDNEY LABORATORY

.055

139056

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3043

DDH CC26 PLY 2

RAW COAL

Mass Received	kg	4.672
Moisture	%	4.7
Ash	%	48.5
Volatile Matter	%	17.3
Fixed Carbon	%	29.5
Relative Density		1.91

	Mass %	Ash %	
- 20 + 0.5mm	96.9	49.6	(calculated)
- 0.5mm + 0	3.1	44.1	
	100.0	49.4	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

	Fractional (%)		Cumulative (%)	
Relative Density	Mass	Ash	Mass	Ash
Floats 1.60	26.6	21.8	26.6	21.8
S 1.60 - F 1.70	8.0	34.7	34.6	24.8
Sinks 1.70	65.4	62.7	100.0	49.6

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	5.4	5.1
Ash	%	21.8	24.7
Volatile Matter	%	23.5	22.5
Fixed Carbon	%	49.3	47.7
Sulphur	%	0.30	0.28
Specific Energy (MJ/kg)		23.76	22.66
Relative Density		1.53	1.57

B. LONNON
MANAGER - SYDNEY LABORATORY

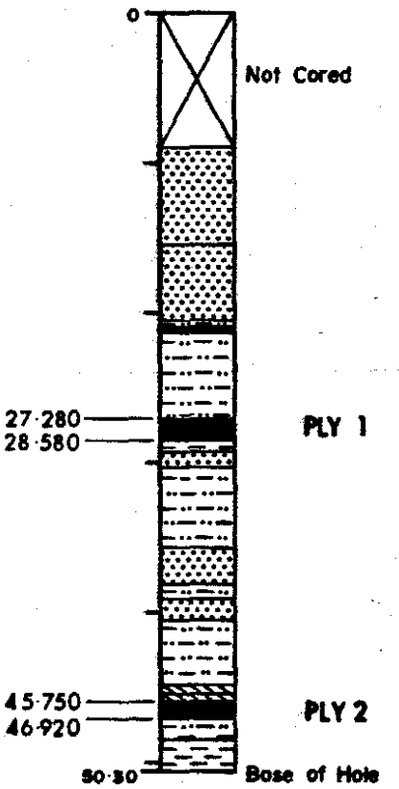
056

139057

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 27



5 cm

SCALE 1:500 DRAWN C.G.L. DATE MAY, 1985. PAGE 1 OF 1

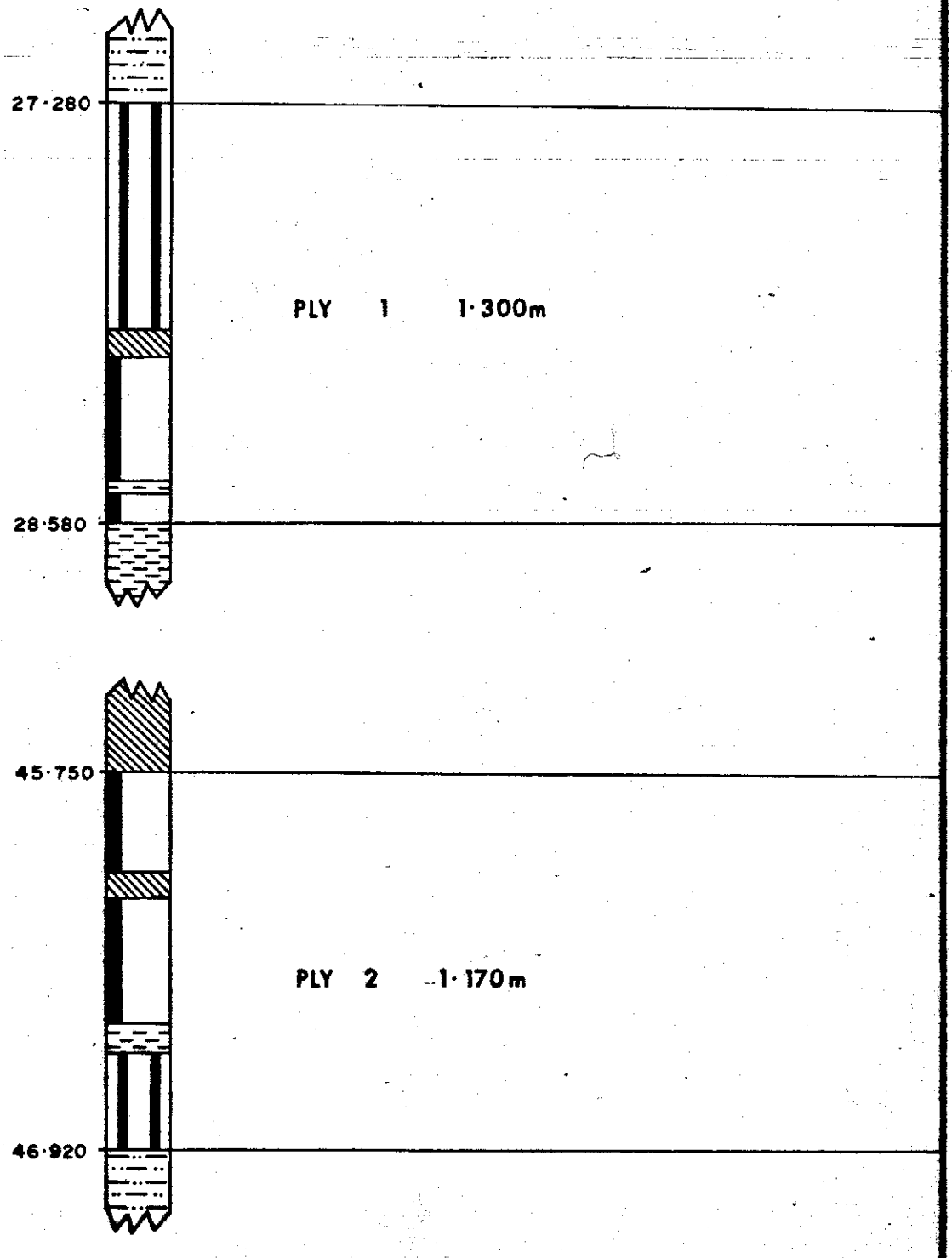
057

139058

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 27



SCALE 1:20 DRAWN C.G.L. DATE MAY, 1985 PAGE 1 OF 1

058

139059

Cornwall Coal Mt Nicholas

DDH 27
Ply 1 27.280 - 28.580

059

139060

CORNWALL COAL MT NICHOLAS D.D.H. 27

Location: 500m West of Jubilee Mine
AMG Co-ordinates: E
N
Collar R.L.:
Total Depth: 50.30m

Logged by: J.H. Bryan
Drilled by: Stacpoole Drilling
Commenced: 6.5.85
Completed: 8.5.85

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remark.
SCREE - non core (tricone roller bit)	9.0	9.00	
SANDSTONE, grey, lithic, medium grained with numerous mudstone interbeds (50:50)	6.50	15.50	
SANDSTONE, grey, lithic, medium grained	5.98	21.48	
MUDSTONE, black, carbonaceous to coaly	0.56	22.04	
COAL, dull to stony	0.34	22.38	
CLAYSTONE, brown, soft	0.045	22.425	
COAL, dull	0.010	22.435	
MUDSTONE, light grey, soft with minor sandy phases and occasional carbonaceous bands (includes 0.31m core loss)	4.845	27.28	

139061

CORNWALL COAL MT NICHOLAS D.D.H. 27

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
COAL, dull to stony	0.700	27.98	)
CLAYSTONE, black, coaly, soft	0.090	28.07	) PLY 1
COAL, dull	0.380	28.45	) Thickness 1.30m
CLAYSTONE, brown, soft	0.040	28.49	)
COAL, dull	0.090	28.58	)
CLAYSTONE, grey, hard	0.130	28.71	
COAL, dull	0.230	28.94	
CLAYSTONE, brown, soft	0.025	28.965	
COAL, soft, weathered	0.060	29.025	
CORE LOSS	0.245	29.270	
SANDSTONE, grey, fine grained grading to mudstone	0.820	30.090	
MUDSTONE, grey to grey/green with occasional carbonaceous bands	5.60	35.69	
SANDSTONE, grey, fine grained with numerous siltstone phases	2.370	38.06	
MUDSTONE, dark brown/black, sandy in part, carbonaceous throughout	0.950	39.01	

CORNWALL COAL MT NICHOLAS D.D.H. 27

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remark
SANDSTONE, grey with numerous thin carbonaceous bands	1.640	40.65	
MUDSTONE, black to grey/brown, carbonaceous throughout	2.730	43.38	
MUDSTONE, grey to grey/green	1.410	44.79	
MUDSTONE, black, carbonaceous	0.380	45.17	
MUDSTONE, grey	0.330	45.50	
CLAYSTONE, black to dark brown, carbonaceous	0.250	45.75	
COAL, dull	0.310	46.06	)
CLAYSTONE, black, coaly	0.080	46.14	) PLY 2
COAL, dull, friable, ?slightly weathered	0.390	46.53	) Thicknes 1.17m
CLAYSTONE, dark brown/black, coaly	0.090	46.62	)
COAL, dull to stony	0.300	46.92	)
MUDSTONE, grey to grey/brown, grading to brown unit below	1.38	48.30	
CLAYSTONE, brown, hard (distinctive unit at base of lowest coal seam) .	2.00	50.30	

BASE OF HOLE

062

139063

CORNWALL COAL COMPANY N.L.
OUTCROP SECTION
OLD OPEN CUT
50m north of DDH 27

1·645

1·232

1·05

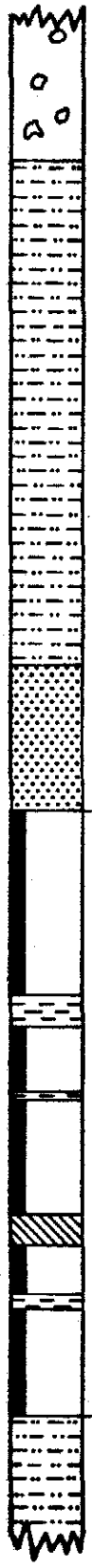
5 cm

SCALE 1:500 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

063

139064

CORNWALL COAL COMPANY N.L.
OUTCROP SECTION
OLD OPEN CUT
50m north of DDH 27



DOLERITE SCREE

TOP SEAM 1.645m

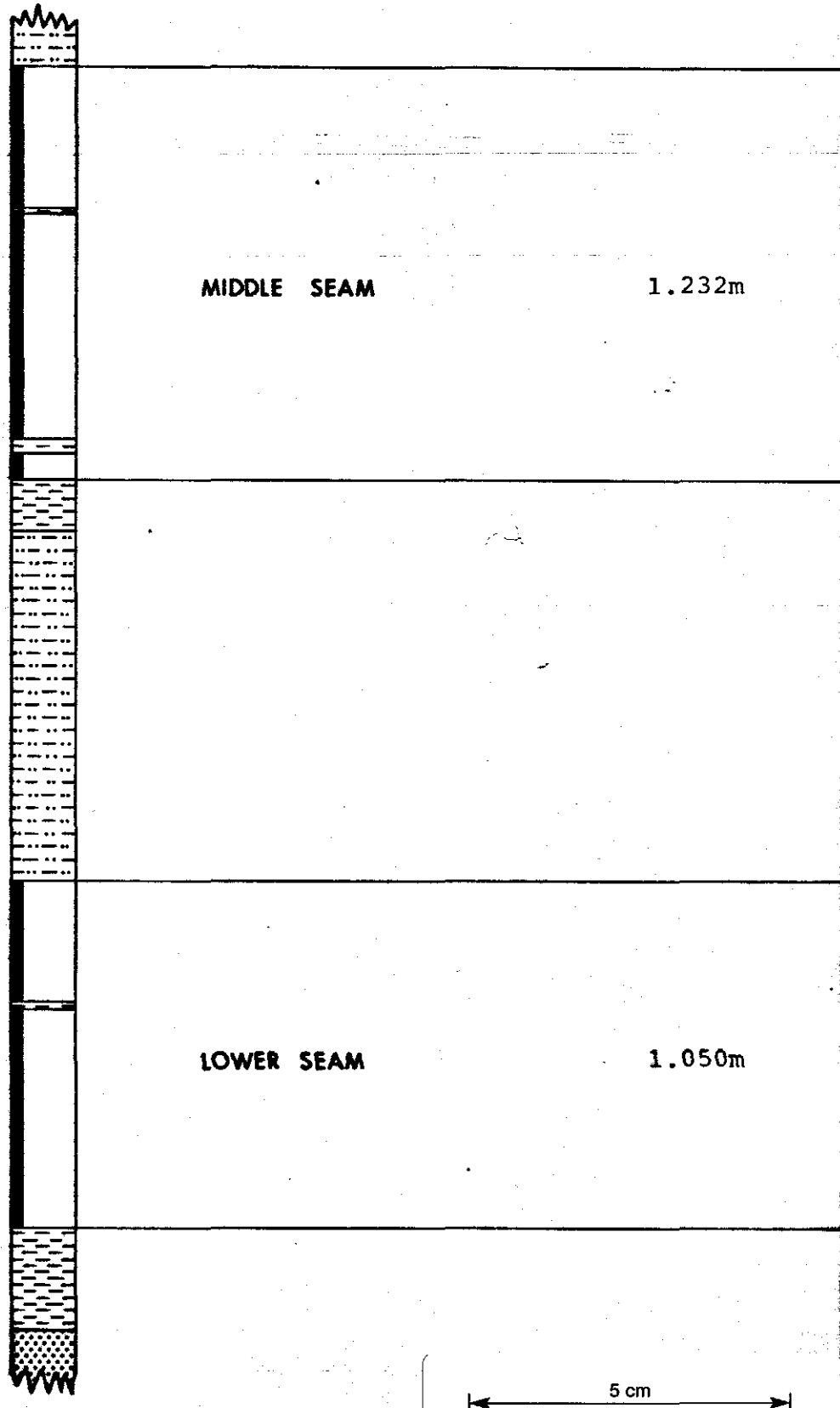
5 cm

SCALE 1:20 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

064

139065

CORNWALL COAL COMPANY N.L.
OUTCROP SECTION
OLD OPEN CUT
50m north of DDH 27



SCALE 1:20 DRAWN J.H.B. DATE June, 1985 PAGE 1 OF 1

CORNWALL COAL COMPANY

Outcrop Section measured in old open-cut
50 metres north of DDH 27

	Top of Section	
DOLERITE SCREE	1 to 4 m	
MUDSTONE, grey, soft, laminated	1.400	
SANDSTONE, grey, lithic, medium grained, slightly carbonaceous	0.400	
MUDSTONE, grey, soft, laminated	0.280	
COAL, dull, laminated	0.500)	
CLAYSTONE, dark grey, carbonaceous	0.095)	
COAL, dull	0.170)	
CLAYSTONE, grey/brown, cherty in part	0.020)	TOP SEAM
COAL, dull	0.315)	
CLAYSTONE, dark grey/black, coaly	0.090)	
COAL, dull	0.130)	
CLAYSTONE, mid brown, cherty	0.045)	
COAL, dull with minor bright bands	0.280)	
MUDSTONE, grey, soft	3.600	

(R.L. 493.6m approx. 2m)
(from top of mudstone unit)

	Top of Section	
COAL, dull	0.440	
CLAYSTONE, grey/brown, fissile	0.010	
		MIDDLE SEAM
COAL, dull	0.700	
CLAYSTONE, brown, ?tuffaceous	0.030	
COAL, dull	0.055	
CLAYSTONE, mid grey to dark grey, carbonaceous or coaly in part	0.170	
MUDSTONE, grey, soft	1.090	
COAL, dull	0.360	
CLAYSTONE, grey/brown	0.020	LOWER SEAM
COAL, dull	0.670	
CLAYSTONE, grey, soft - dark brown/grey at top where carbonaceous	0.300	
SANDSTONE, grey, lithic, medium grained	2.000	

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3043

DDH CC27 PLY 1

RAW COAL

Mass Received	kg	4.192
Moisture	%	8.6
Ash	%	44.9
Volatile Matter	%	17.0
Fixed Carbon	%	29.5
Relative Density		1.78

	Mass %	Ash %	
- 20 + 0.5mm	94.6	44.0	(calculated)
- 0.5mm + 0	5.4	46.0	
	100.0	44.1	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

	Fractional (%)		Cumulative (%)	
Relative Density	Mass	Ash	Mass	Ash
Floats 1.60	41.5	24.9	41.5	24.9
S 1.60 - F 1.70	19.0	38.9	60.5	29.3
Sinks 1.70	39.5	66.4	100.0	44.0

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	7.9	8.0
Ash	%	24.9	29.2
Volatile Matter	%	22.9	21.1
Fixed Carbon	%	44.3	41.7
Sulphur	%	0.40	0.37
Specific Energy (MJ/kg)		21.78	20.14
Relative Density		1.54	1.60

B. LONNON
MANAGER - SYDNEY LABORATORY

068

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3043

DDH CC27 PLY 2

RAW COAL

Mass Received	kg	3.446
Moisture	%	5.6
Ash	%	48.7
Volatile Matter	%	16.3
Fixed Carbon	%	29.4
Relative Density		1.92

	Mass %	Ash %	
- 20 + 0.5mm	90.7	49.0	(calculated)
- 0.5mm + 0	9.3	43.0	
	100.0	48.4	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

	Fractional (%)		Cumulative (%)	
Relative Density	Mass	Ash	Mass	Ash
Floats 1.60	11.6	21.9	11.6	21.9
S 1.60 - F 1.70	16.4	33.2	28.0	28.5
Sinks 1.70	72.0	57.0	100.0	49.0

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	5.6	5.5
Ash	%	21.9	28.3
Volatile Matter	%	21.0	19.4
Fixed Carbon	%	51.5	46.8
Sulphur	%	0.20	0.29
Specific Energy (MJ/kg)		22.88	20.50
Relative Density		1.57	1.65

B. LONNON
MANAGER - SYDNEY LABORATORY

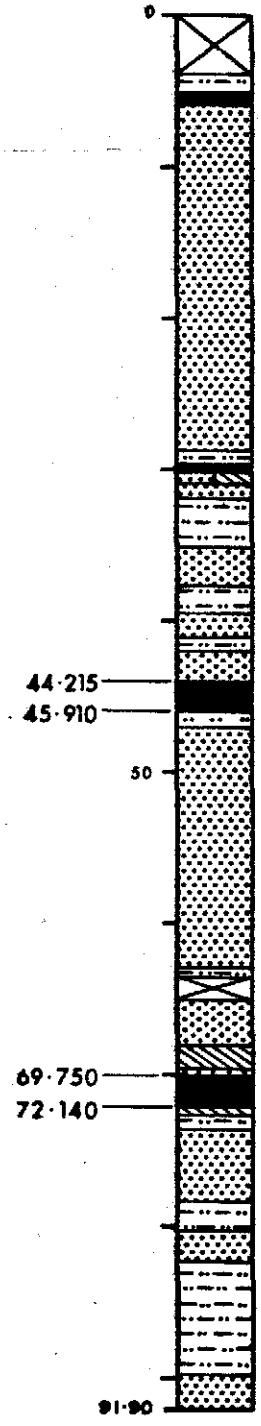
069

139070

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 28



5 cm

SCALE 1:500 DRAWN C.G.L. DATE MAY, 1985. PAGE 1 OF 1

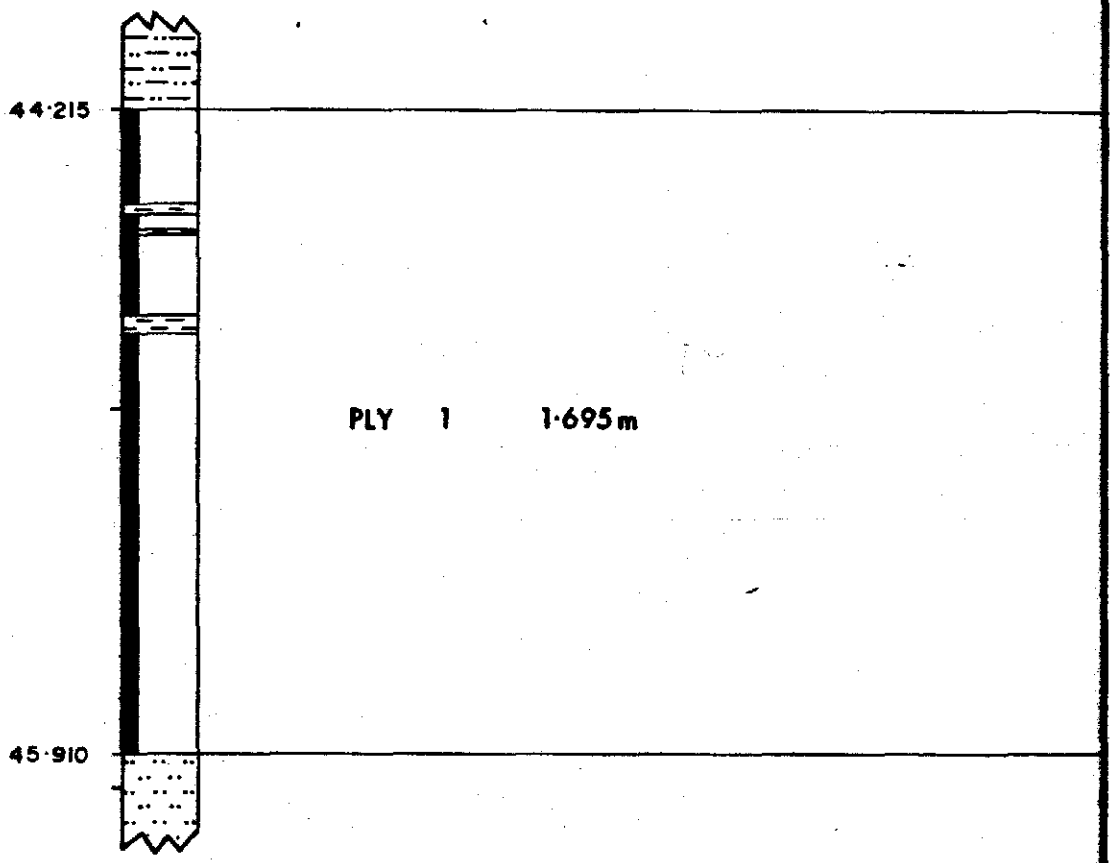
070

139071

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 28



5 cm

SCALE 1:20 DRAWN C.G.L. DATE MAY, 1985 PAGE 1 OF 1

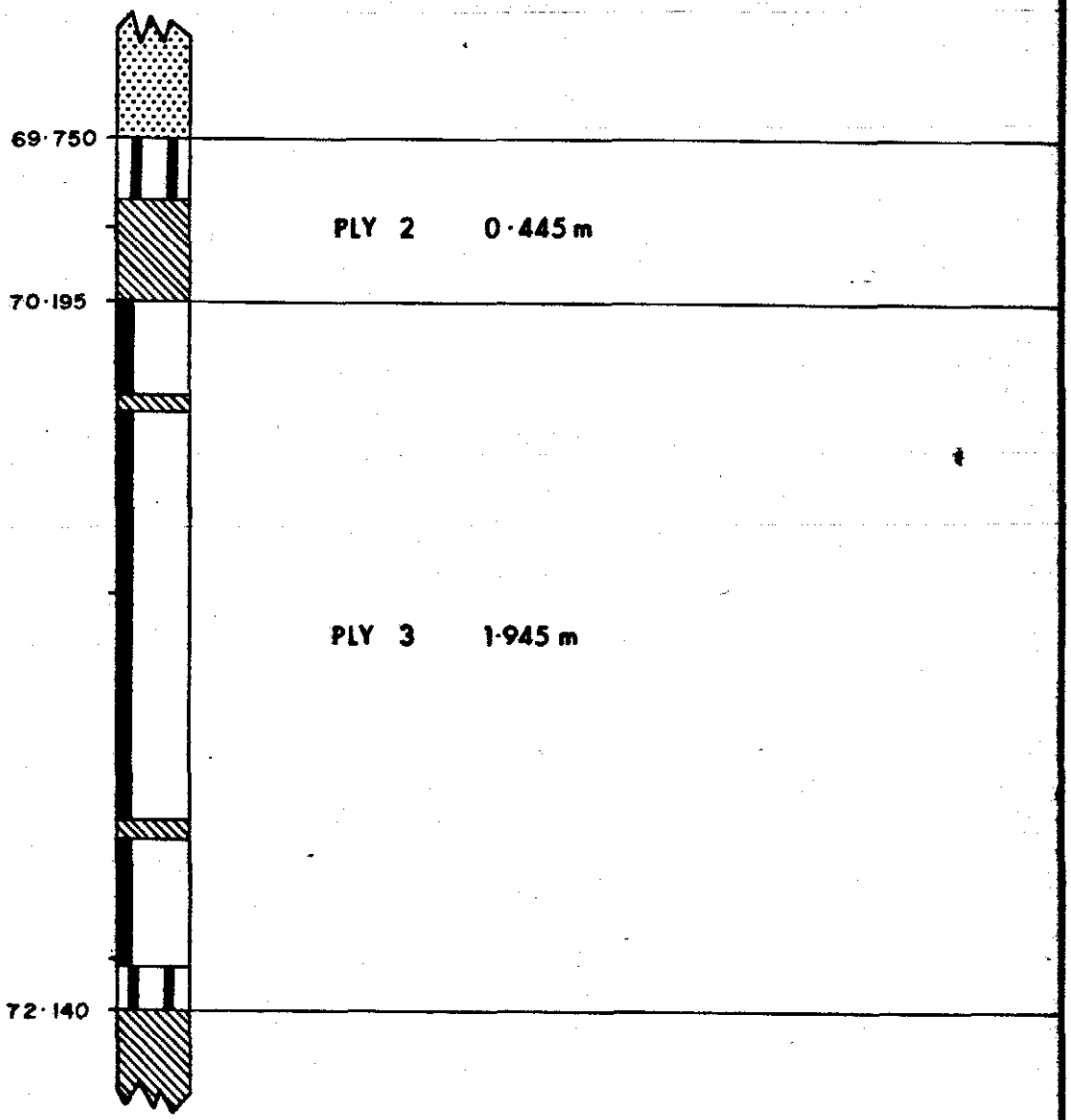
071

139072

CORNWALL COAL COMPANY N.L.

Mt. Nicholas

DDH 28



5 cm

SCALE 1:20 DRAWN C.G.L. DATE MAY, 1985 PAGE 1 OF 1

072

139073

Cornwall Coal Mt Nicholas

DDH 28
Ply 1 44.215 - 45.910

Cornwall Coal Mt Nicholas

DDH 28
Ply 2 69.750 - 72.140

073

139074

CORNWALL COAL MT NICHOLAS D.D.H. 28

Location: 800m north of DDH 4
AMG Co-ordinates: E
N
Collar R.L.:
Total Depth: 91.90m

Logged by: J.H. Bryan
Drilled by: Stacpoole Drilling
Commenced: 8.5.85
Completed: 14.5.85

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remar
SCREE (non core)	4.00	4.00	
MUDSTONE, grey/brown, slightly weathered (core loss 0.56)	1.24	5.24	
COAL, dull, slightly weathered	0.25	5.49	)
CLAYSTONE, brown, soft	0.020	5.51	) Cullenswood) Coal Member
COAL, dull to stony	0.230	5.74	)
CLAYSTONE, brown, soft	0.020	5.76	)
COAL, dull, laminated, slightly weathered	0.200	5.96	)
SANDSTONE, grey to grey brown, slightly weathered	22.82	28.78	
MUDSTONE, grey, hard at top but generally weak strata	1.06	29.84	
COAL, dull to stony	0.23	30.07	

CORNWALL COAL MT NICHOLAS D.D.H. 28

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
CLAYSTONE, grey/brown to black	0.26	30.33	
SANDSTONE, grey, lithic, hard, fine grained, massive	0.46	30.79	
MUDSTONE, black	0.23	31.02	
SANDSTONE, grey/brown, carbonaceous with black mudstone interbeds	1.03	32.05	
MUDSTONE, grey/green with numerous sandy phases	3.08	35.13	
SANDSTONE, grey/green, lithic, fine grained with minor mudstone interbeds	2.54	37.67	
MUDSTONE, grey/green with minor sandy phases	1.98	39.65	
SANDSTONE, grey, medium grained, lithic	1.54	41.19	
MUDSTONE, dark grey to black	0.340	41.53	
MUDSTONE, grey/green	0.380	41.91	
SANDSTONE, fine to medium grained with minor mudstone interbeds	2.03	43.94	
MUDSTONE, grey/green (weak strata)	0.275	44.215	

CORNWALL COAL MT NICHOLAS D.D.H. 28

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remark
COAL, dull to stony	0.25	44.465	
CLAYSTONE, brown, waxy	0.03	44.495	
COAL, dull	0.035	44.530	PLY 1
CLAYSTONE, brown	0.005	44.535	Thicknes 1.695m
COAL, dull	0.220	44.755	
CLAYSTONE, dark grey to brown	0.045	44.800	
COAL, dull	1.110	45.910	
SILTSTONE, grey brown to grey, hard	1.170	47.08	
SANDSTONE, fine grained at top becoming medium grained, grey, lithic, coaly wisps and lenses towards base	15.73	62.81	
CLAYSTONE, brown, soft	0.05	62.86	
SANDSTONE, grey, lithic	0.04	62.90	
MUDSTONE, black to grey with numerous slickensides, core broken at end of run before core loss	0.52	63.42	
CORE LOSS	1.48	64.90	

CORNWALL COAL MT NICHOLAS D.D.H. 28

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
SANDSTONE, grey, carbonaceous at top, hard	3.045	67.945	
MUDSTONE, black, carbonaceous	1.52	69.465	
SANDSTONE, grey, lithic with numerous carbonaceous bands	0.285	69.750	
COAL, dull to stony	0.165	69.915	PLY 2 Thickness 0.445m
MUDSTONE, black, carbonaceous	0.280	70.195	
COAL, dull	0.255	70.450	PLY 3 Thickness 1.945m
CLAYSTONE, black, coaly	0.040	70.49	
COAL, dull	1.120	71.61	
CLAYSTONE, black, coaly	0.060	71.67	
COAL, dull	0.340	72.01	
COAL, stony	0.130	72.14	
CLAYSTONE, black to dark brown, carbonaceous to coaly	0.440	72.58	
MUDSTONE, grey, laminated	0.910	73.49	
SANDSTONE, grey, medium, lithic	3.870	77.36	

CORNWALL COAL MT NICHOLAS D.D.H. 28

	Estimated Thickness (m)	Estimated Depth to Base of Stratum (m)	Remarks
MUDSTONE, grey to dark grey or black, carbonaceous to coaly throughout, becoming sandy towards base (mid brown claystone pellets towards base) (marker horizon)	2.780	80.14	
SANDSTONE, grey/white/brown, gradational change from unit above - fine grained to very coarse quartzose phases	1.99	82.13	
MUDSTONE, grey to green/grey or black with minor sandy phases	7.57	89.7	
SANDSTONE, grey, quartz lithic, hard	2.20	91.90	

BASE OF HOLE

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3043

DDH CC28 PLY 1

RAW COAL

Mass Received	kg	3.846
Moisture	%	6.9
Ash	%	34.3
Volatile Matter	%	22.2
Fixed Carbon	%	36.6
Relative Density		1.66

	Mass %	Ash %	
- 20 + 0.5mm	96.5	31.6	(calculated)
- 0.5mm + 0	3.5	35.4	
	100.0	31.7	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

	Fractional (%)		Cumulative (%)	
Relative Density	Mass	Ash	Mass	Ash
Floats 1.60	64.4	14.2	64.4	14.2
S 1.60 - F 1.70	6.2	37.0	70.6	16.2
Sinks 1.70	29.4	68.6	100.0	31.6

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	7.2	7.0
Ash	%	14.2	15.7
Volatile Matter	%	27.8	27.4
Fixed Carbon	%	50.8	49.9
Sulphur	%	0.43	0.43
Specific Energy (MJ/kg)		26.30	25.50
Relative Density		1.44	1.46

B. LONNON
MANAGER - SYDNEY LABORATORY

.079.

SGS Australia Pty. Ltd.

REPORT No: SL 3043
CORNWALL COAL CO. NL
DDH CC28 PLY 2 RAW COAL

Analysis \ Sample Ref.							
Total Moisture %							
Moisture %		5.2					
Ash %		75.3					
Volatile Matter %		11.6					
Fixed Carbon %		7.9					
Crucible Swelling No.							
Total Sulphur %							
Specific Energy Mj/kg							
Relative Density		2.2					
Mass Received kg		1.494					

Analysis \ Sample Ref.							
Total Moisture %							
Moisture %							
Ash %							
Volatile Matter %							
Fixed Carbon %							
Crucible Swelling No.							
Total Sulphur %							
Specific Energy Mj/kg							

BASIS RESULTS REPORTED ON AIR DRIED

B. LONNON
MANAGER - SYDNEY LABORATORY

SGS Australia Pty. Ltd.

CORNWALL COAL CO. NL

Report No : SL 3043

DDH CC28 PLY 3

RAW COAL

Mass Received	kg	4.724
Moisture	%	6.0
Ash	%	34.5
Volatile Matter	%	18.7
Fixed Carbon	%	40.8
Relative Density		1.70

	Mass %	Ash %	
- 20 + 0.5mm	95.2	34.9	(calculated)
- 0.5mm + 0	4.8	31.2	
	100.0	34.7	(calculated)

Float / Sink Separation of - 20 + 0.5mm MATERIAL

		Fractional (%)		Cumulative (%)	
Relative Density		Mass	Ash	Mass	Ash
Floats	1.60	49.7	19.4	49.7	19.4
S 1.60 - F	1.70	14.0	34.8	63.7	22.7
Sinks	1.70	36.3	56.1	100.0	34.9

		-20 + 0.5mm Floats 1.60 MATERIAL	-20 + 0.5mm Cumulative Floats 1.70 MATERIAL
Moisture	%	5.8	5.8
Ash	%	19.4	22.5
Volatile Matter	%	22.5	21.7
Fixed Carbon	%	52.3	50.0
Sulphur	%	0.27	0.26
Specific Energy (MJ/kg)		24.52	23.08
Relative Density		1.53	1.55

B. LONNON
MANAGER - SYDNEY LABORATORY