

COMMONWEALTH OF AUSTRALIA.

MINISTRY OF NATIONAL DEVELOPMENT.
BUREAU OF MINERAL RESOURCES,
GEOLOGY AND GEOPHYSICS.

RECORDS.

1953/46.



M I T C H E L L ' S F L A T A R E A

DRILLING RESULTS

By T.H. Rodger

Bureau of Mineral Resources, Geology and Geophysics
OPEN CUT COAL INVESTIGATIONS IN NEW SOUTH WALES
CESSNOCK MUSWELLBROOK REGION

M I T C H E L L ' S F L A T A R E A .

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C O N T E N T S .

Text; Bore Logs; Map N14-109

The area investigated, of approximately 16 square miles, is 10 miles east of Singleton in the Parishes of Sedgfield and Marwood, County of Durham and in the Parish of Belford, County of Northumberland.

This area is shown on New South Wales Geological Survey Plans as a basin of Upper Coal Measures, divided from the Carboniferous on the east by the Hunter Thrust Fault which is dipping at 20 to 30 degrees to the east, and from the Upper Marine Series on the west by another fault which also dips east at 76 degrees. The sediments within the basin have been tilted and in places have undergone subsidiary faulting. The outcrops of the Upper Coal Measures along West Brook dip to the east at angles from 70 to 85 degrees; 17 coal seams are exposed giving a total of 132 ft. of coal in 423 ft. of sediment. Directly to the north of "Glenbourne" coal is exposed in the bend of Glendon Brook. The dip of these outcrops varies from 15 to 20 degrees to the north-east and some faulting is visible. There are other outcrops of conglomerate and sandstone in the basin, particularly just to the north of the Hunter River, but little information can be gained from these.

Drilling was carried out by the Joint Coal Board and by private contractors in the area surrounding the coal outcrops in Glendon Brook prior to and during 1949. The positions and the graphic logs of these bores are shown in the Joint Coal Board Plan BC 16. Private investigators sunk one shaft (still open), and 6 bores in this area, all of which encountered coal. Coal was reported to be in seams up to 33 ft. thick in some of the Joint Coal Board bores and in one bore a total of 120 ft. of coal was logged between the surface and a depth of 208 ft.

The Bureau of Mineral Resources drilled 5 rotary cored bores, as shown on BMR Map N14/109, to 150 ft., 301 ft., 167 ft. 1 in., 202 ft. 8 in. and 131 ft. respectively. The thickest unbanded seam of coal in the 5 bores was 1 ft. 11½ in. The result of drilling was total absence of coal. This may be seen in the attached logs. The sediments were typical of the Upper Coal Measures and in BMR 1 were extremely contorted. It is possible that they were disturbed by the neighbouring Hunter Thrust Fault.

It is evident that the coal thickness encountered by the Joint Coal Board bores was due to either repetition of the beds by faulting, or the bores were drilled through single coal seams which were dipping very steeply. The prospects of finding coal within open cut limits are remote. Coal, unaffected by faults, may be present in the centre of the basin, but only at depths suitable for underground mining. The analyses from the Joint Coal Board bores, however, indicate that the coal is not of a sufficiently high quality to be worked economically by underground methods.

SKETCH MAP OF BORE LOCATIONS
MITCHELL'S FLAT AREA
PARISH OF SEDGEFIELD COUNTY OF DURHAM, N.S.W.

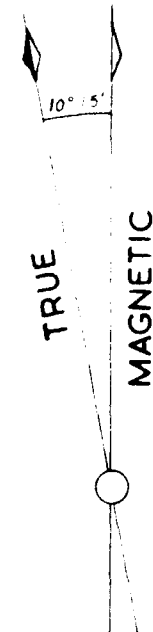
BMR 5
●
206.7'

BMR 4
●
160.6'

BMR 3
●
165.8'

BMR 2
●
180.4'

BMR 1
●
196.1'



GLENDON
BROOK



PORTION 1143
PORTION 1144

FROM
SINGLETON

TO GLENDON BROOK

FROM BRANXTON

POINT OF ORIGIN.

[illegible]

Estimated Depth		Estimated Thickness		GEOLOGICAL DESCRIPTION OF STRATA	Core Measured		Coal Sample No.	Min. Bands Included		Min. Bands Excluded		PROXIMATE ANALYSIS				
Ft.	Ins.	Ft.	Ins.		Ft.	Ins.		Ft.	Ins.	Ft.	Ins.	H.M.	V.	F.C.	ASH	B. TH. U/LB
104	11		5	COAL dull and bright banded		1½										
106	10½	1	11½	Shale with intercolated bands siltstone, greywacke and COAL.	1	11½										
108	3	1	4½	Shale and COAL in up to 2 inch bands - very fractured and stained with limonite	1	1½										
115	6	7	3	Shale dark grey, carbonaceous with inter-lensing bands of claystone and greywacke	7	3										
115	8		2	COAL, dull and bright banded with ½ band shale		2										
119	9¼	4	1¼	Shale, dark grey, carbonaceous with bands siltstone.	2	9¾										
125	0¾	5	3½	Greywacke intercolated with shale, siltstone and some very fine COAL bands, all highly contorted.	5	3½										
132	11	7	10¼	Shale, greywacke, and siltstone, all showing carbonaceous markings and limonite staining, and all contorted.	7	10¼										
133	0½		1½	COAL, with white mineral on joint planes		1½										
138	1½	5	1	Greywacke, siltstone and shale interbedded dark grey	4	9										
138	5½		4	COAL with calcite in bedding and vertical joint planes.		1										
140	6½	2	1	Greywacke l. gy. fine to medium grained	1	11½										
140	8		1½	COAL dull and bright banded pyrites		1½										
150		9	4	Greywacke, fine to medium grained contorted with carbonaceous material and some thin bands dark grey shale.	7	7										
Hole completed.																
9.6.1953.																

Estimated Depth		Estimated Thickness		GEOLOGICAL DESCRIPTION OF STRATA	Core Measured		Coal Sample No.	Min. Bands Included		Min. Bands Excluded		PROXIMATE ANALYSIS				
Ft.	Ins.	Ft.	Ins.		Ft.	Ins.		Ft.	Ins.	Ft.	Ins.	H.M.	V.	F.C.	ASH	B. TH. U/LB
144	4		1	COAL bright and dull bands		1										
144	6		2	Siltstone carbonaceous		2										
144	7		1	COAL bright and dull bands		1										
146	11½	2	4½	Siltstone with bands of shale darkgrey carbonaceous	2	4½										
147	5½		6	COAL bands (lost)												
147	9½		4	Greywacke grey, coarse to very coarse grained.		4										
149	2	1	4½	COAL and shale mostly lost		3½										
154	4	5	2	Greywacke with bands siltstone and one of shale.	5	2										
154	5		1	COAL bright		1										
168		13	7	Greywacke with bands claystone, siltstone and sandstone. Plant detritus abundant.	12	1¾										
216	1	48	1	Greywacke conglomerate (pebble)	47	2½										
218	11½	2	10½	Greywacke light grey, finely grained	2	10½										
219	1¾		2¼	COAL and SPLINT		2¼										
223	7	4	5¼	Greywacke, fine to coarse grained, light grey.	4	5¼										
301		77	5	Greywacke conglomerate (pebble) with white soft powdery material (Kaolin) filling occasionally spaces between pebbles.	64	10½										
Hole completed.																
9.6.1953.																

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R. 3 MITCHELLS FLAT.

DISTRICT Cessnock COUNTY Durham PARISH Sedgefield PORTION 143 APPROX. From Point of Origin LOCATION 303°00' / 5210'

Surveyed by N. Gorbunow Survey Method Theod. Traverse Elevation 165.8' Ref. Map B. M. R. Map N14/100

Logged by M. C. Konecki Cased 19'6" Datum Standard Ref. Report BMR Records 52/46

Sunk by Drill Corp. (Aust.) Pty. Ltd. Type of Drill Mindrill E 1000 Depth 167' 1" Date Begun/Finished 26/6/52-17/7/52

[illegible]

Estimated Depth		Estimated Thickness		GEOLOGICAL DESCRIPTION OF STRATA	Core Measured		Coal Sample No.	Min. Bands Included		Min. Bands Excluded		PROXIMATE ANALYSIS				
Ft.	Ins.	Ft.	Ins.		Ft.	Ins.		Ft.	Ins.	Ft.	Ins.	H.M.	V.	F.C.	ASH	B. TH. U/LB
60	6 $\frac{1}{2}$		1	COAL bright with dull bands		1										
61	1 $\frac{1}{2}$		7	Greywacke dark grey coarse grained with carbonaceous siltstone band.		7										
61	2		$\frac{1}{2}$	COAL bright		$\frac{1}{2}$										
66		4	10	Siltstone grey with clayshale and grey- wecke band.	3	3 $\frac{1}{2}$										
66	1 $\frac{1}{2}$		1 $\frac{1}{2}$	COAL mostly bright		1 $\frac{1}{2}$										
67	4 $\frac{1}{2}$	1	3	Siltstone w. irregular carbonaceous bands	1	3										
67	10		5 $\frac{1}{2}$	COAL bright		$\frac{1}{2}$										
74	0 $\frac{1}{2}$	6	2 $\frac{1}{2}$	Greywacke light grey fine grained with siltstone bands.	4	11 $\frac{1}{2}$										
74	4 $\frac{1}{2}$		4	COAL bright		1										
79	4 $\frac{1}{2}$	5		Greywacke medium grained grey with bands siltstone and some carbonaceous material.	4	9										
95		15	7 $\frac{1}{2}$	Greywacke conglomerate (pebble)	15	2										
96	2	1	2	Greywacke grey, finegrained with clayshale and siltstone bands.	1	1										
118	4	22	2	Greywacke conglomerate (pebble) with lenses of coarse grained greywacke.	21	1 $\frac{1}{2}$										
120	8	2	4	Greywacke with siltstone bands	2	3										
121			4	COAL bright		2										
125	1 $\frac{1}{2}$	4	1 $\frac{1}{2}$	Siltstone carbonaceous sandy with some greywacke fine-medium grained.	3	7 $\frac{1}{2}$										
127	7 $\frac{1}{2}$	2	6	Greywacke light grey fine to coarse grained	2	6										
144		16	4 $\frac{1}{2}$	Greywacke conglomerate (pebble)	15	2										
144	9		9	Siderite (?) sandy brownish grey medium to coarse grained with rare pebbles of various rocks.		9										
150	3	5	6	Greywacke with some interlensing carbon- aceous siltstone bands.	3	6										
167	1	16	10	Greywacke conglomerate medium to coarse grained, finally pebble.	16	2										

Hole completed.9.6.1953.

Estimated Depth		Estimated Thickness		GEOLOGICAL DESCRIPTION OF STRATA	Core Measured		Coal Sample No.	Min. Bands Included		Min. Bands Excluded		PROXIMATE ANALYSIS				
Ft.	Ins.	Ft.	Ins.		Ft.	Ins.		Ft.	Ins.	Ft.	Ins.	H.M.	V.	F.C.	ASH	B. TH. U/LB
196	11 $\frac{1}{2}$	3	6	Siltstone dark grey, carbonaceous with stringers of COAL, claystone and greywacke some tuffaceous material.	3	6										
197	2 $\frac{1}{2}$		3	COAL bright with thin bands of carbonaceous siltstone and fine veins of white material.		3										
198	2		11 $\frac{1}{2}$	Siltstone, dark grey carbonaceous with plant remains.		11 $\frac{1}{2}$										
200	3	2	1	Greywacke medium to coarse grained, grey with an 8" lense of carbonaceous siltstone in the middle.	2	1										
203	8	2	5	Carbonaceous siltstone, dark grey, with plant detritus.	1	4										
Hole completed.																
													9.6.1953.			

