COMMONWEALTH OF AUSTRALIA.

Copy 3

DEPARTMENT OF SUPPLY AND DEVELOPMENT.

BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

RECORDS ~~REPORT~~ No. 1952/24

REPORT + SUPPLEMENT

RESULTS OF DRILLING IN THE SWANSEA AREA NSW.

RESULTS OF DRILLING IN THE SWANSEA AREA, N.S.W.

by

W.J. Perry

RECORDS 1952/24

CONTENTS

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SUMMARY

In the Swansea area 'test and define' core drilling by the Bureau has indicated coal reserves of approximately 302,000 tons within the physical limits required for open cut exploitation. This total is made up of more than 87,000 tons in the "Open Cut Block" and 215,000 tons in the "West Block".

Proving is recommended for the open cut Block and for the West Block, except that in the latter area the obstruction which will be offered to open cutting by the presence of the P.M.G. cable should be considered before proving is undertaken.

INTRODUCTION.

This statement sets out the results of drilling by the Bureau within Swansea Sub-area N.S.W. (J.C.B. plan BG-4). The area investigated comprises approximately 115 acres, about 2 miles south of the township of Swansea in the parish of Wallarah, County Northumberland. Here pebbly sandstones of probably Triassic age rest conformably on the youngest strata of the Newcastle beds of the Upper Coal Measures. The drilling target, the top split of the Wallarah Seam, was intersected in each of the eight holes drilled. The sub-area is divided by the Pacific Highway into two parts, an eastern and western block which correspond roughly to the open cut Block and Swansea West Block respectively of J.C.B. Plan BG. 4, and are shown as such on the accompanying plan N14-43, and a plane table survey of the area made (Plan N14-43). Bore sites were determined by field officers of the Geological Section of the Bureau, under the supervision of C. Bursill and G.M. Burton.

The Drilling was carried out by two Sullivan type drills owned and operated by the Petroleum Technology Section of the Bureau of Mineral Resources.

Proximate analyses and calorific value determinations of coal cores and samples were carried out by the N.S.W. Mines Department laboratory in Sydney. Coal cores were forwarded from the field to the laboratory where the analysts selected samples by rejecting shale and sandstone bands which had a thickness of $\frac{1}{2}$ inch or more. Inferior coal or carbonaceous shale with specific gravity exceeding 1.6 was also excluded from the samples submitted to analysis. Consequently the analyses quoted indicate a composition roughly equivalent to that which might be expected for cleaned or hand-picked coal from this area. Where the bores intersected coal of workable thickness bands are few and therefore analyses of such cores gives a reliable estimate of quality; however poor core recovery detracts from the value of these analyses. Details of bands excluded from analysis are shown in Tables 1 and 2.

DEFINITION OF SUITABLE COAL

Coal intersected has been included in the computation of reserves when it conforms to the following conditions which are regarded as suitable for open cut mining.

Depth of floor of seam feet	Thickness of coal not less than feet	inches
80 or less	5	-
90	5	7
100	6	3
110	6	10
120	7	6
130	8	2
140	8	9
150	9	5
160	10	-
170	10	7

Calorific value: not less than 10,000 B.Th.U's per pound.

DRILLING RESULTS.

Of eight holes drilled, four, S.7, S.6, S.13, & S.12 intersected coal which conforms to the above definition. Two holes, S.4 and S.11 were abandoned because of drilling difficulty and poor recovery and re-drilled near the original sites as S.6 and S.12. Recovery in S.13 is poor and this hole was redrilled as S.14, but owing to the broken nature of the coal no improvement in results was obtained. The total footage drilled including repeated holes was more than 780 feet.

Twenty feet of overburden was considered the minimum cover necessary to protect coal from weathering, and the area used for the computation of reserves is based on this assumption. Principal details of the four successful bores are shown in summarized form below.

Bore No.	Altitude of surface a.s.l. ft.	Depth and thickness of Coal Seam INcluding bands from ft.	ins.	to ft.	ins.	thickness ft.	ins.	Core recovery INcluding bands ft.	ins.	%
6	267.1	58	10	67	0	8	2	7.	3	89
7	193.5	23	11½	32	0	8	0½	8	0½	100
13	305.1	39	2	45	9	6	7	2	5	37
8	308.8	53	2	60	4½	7	2½	3	5	47

INDICATED COAL RESERVES

(a) Western Block.

On plan 14/43 the area underlain by economic coal is divided into two parts, A and B. The average thickness of the upper split of the Wallarah Seam in area A, 9.4 acres, is 8 feet;

the indicated reserves in area A are therefore 120,300 tons, using a factor of 1600 tons per acre foot. No information is available about the coal in the old workings bordering area B and a bore will be sunk in the area; meanwhile coal present is assumed to be of the same quality and thickness as that in Area A. The total area of parts A and B is 16.8 acres and thus the indicated coal reserves for the Western Block are 215,000 long tons.

(b) Open Cut Block.

The area underlain by coal conforming to the definition is labelled C on plan N14/43. The two successful bores are S.8 and S.13. The average thickness of coal in the upper split of the Wallarah Seam has been estimated at 3 ft. 6 ins. throughout an area of 8.43 acres; indicated reserves are 87,600 tons.

Coal core recoveries in both S.8 and S.13 are poor, and confirmation of these results by proving will be necessary.

In bore S.8 the lower split of the Wallarah Seam is 5 ft. 2 ins. thick and is beneath 74 feet of cover. There is therefore a small area about S.8 in which the lower split conforms to the definition of suitable coal; how far this area extends north-westward from S.8 however, is uncertain from available data, and it has been assumed to extend no further in that direction than it does to the south and east. This assumption restricts the area of economic coal to less than half an acre, and the usable coal to approximately 4,000 tons. This figure has not been included in reserves.

OVERBURDEN.

Overburden in both the West and Open Cut Blocks consists dominantly of pebbly sandstone and conglomerate. Average overburden ratio for the West Block is 5.5/1 and that for the Open Cut Block 7/1; other details are given in Table I. A P.M.G. cable traverses the whole of the West Block, and part of area B is crossed by an electric power line.

RECOMMENDATION.

Indicated reserves in the Open Cut Block are small, but proving is recommended so that if the results of testing and defining are confirmed the area can be exploited as an extension of the existing McCarthy's open cut.

Reserves in the West Block are sufficient to warrant exploitation by open cutting; however, other factors beyond the scope of this report, such as the necessity for the removal of the P.M.G. cable prior to open cutting, require consideration before a proving campaign is undertaken.

TABLE I.

INDICATED COAL RESERVES

Bore No. B.M.R.	Thickness of Coal EXcluding bands more than ½ in. thick. Assumed from log ft.	(a) ins.	Recovered and analysed ft.	ins.	% coal recovered	Overburden thickness feet	Composition of Coal, bands EXcluded Moist. %	V.M. %	F.C. %	Ash. %	B.Th.U's per lb.	Approx B.Th.U's per lb. bands INcluded (b)	Bands excluded from analysis inches
7	8	0½	8	0½	100	24	3.0	27.1	54.5	15.4	11,760	11,760	
6	8	2	7	2½	88	59	2.4	27.1	54.8	15.7	11,787	11,700	½
13	6	7	2	5	37	39	5.8	24.9	53.1	16.2	10,190	10,190	
8	7	2½	3	5	47	53	3.1	27.3	57.4	12.2	12,170	12,170	

	Area A	Total Western Block (A & B)	Open Cut Block
Tonnage:	Av. thickness 8 ft. over 9.4 acres 8 x9.4 x 1600 = 120,300 tons	Av. thickness 8 ft. over 16.8 acres 8 x16.8 x 1600 = 215,000 tons	Av. thickness 6ft 6 ins. over 8.43 acres 6.5x8.43 x 1600 = 87,600 tons
Overburden thickness:	Range 20 ft. to 72 ft; average 36.9 ft.	Range 20 ft. to 80 ft; average 43.7 ft.	Range 20 ft. to 74 ft; average 44 ft.
Overburden ratio:	Range 2.5/1 to 9/1 Average 4.6/1	Range 2.5/1 to 10/1 average 5.5/1	Range 3/1 to 11.4/1 average 7/1.
Overburden volume	547,500 cub. yds.	1,183,900 cub. yds.	598,400 cub. yds.

Notes: (a) Lostcore from within the coal seam and for which there is no information is regarded as coal of the same composition as that recovered and analysed.

(b) It is assumed that bands have no calorific value.

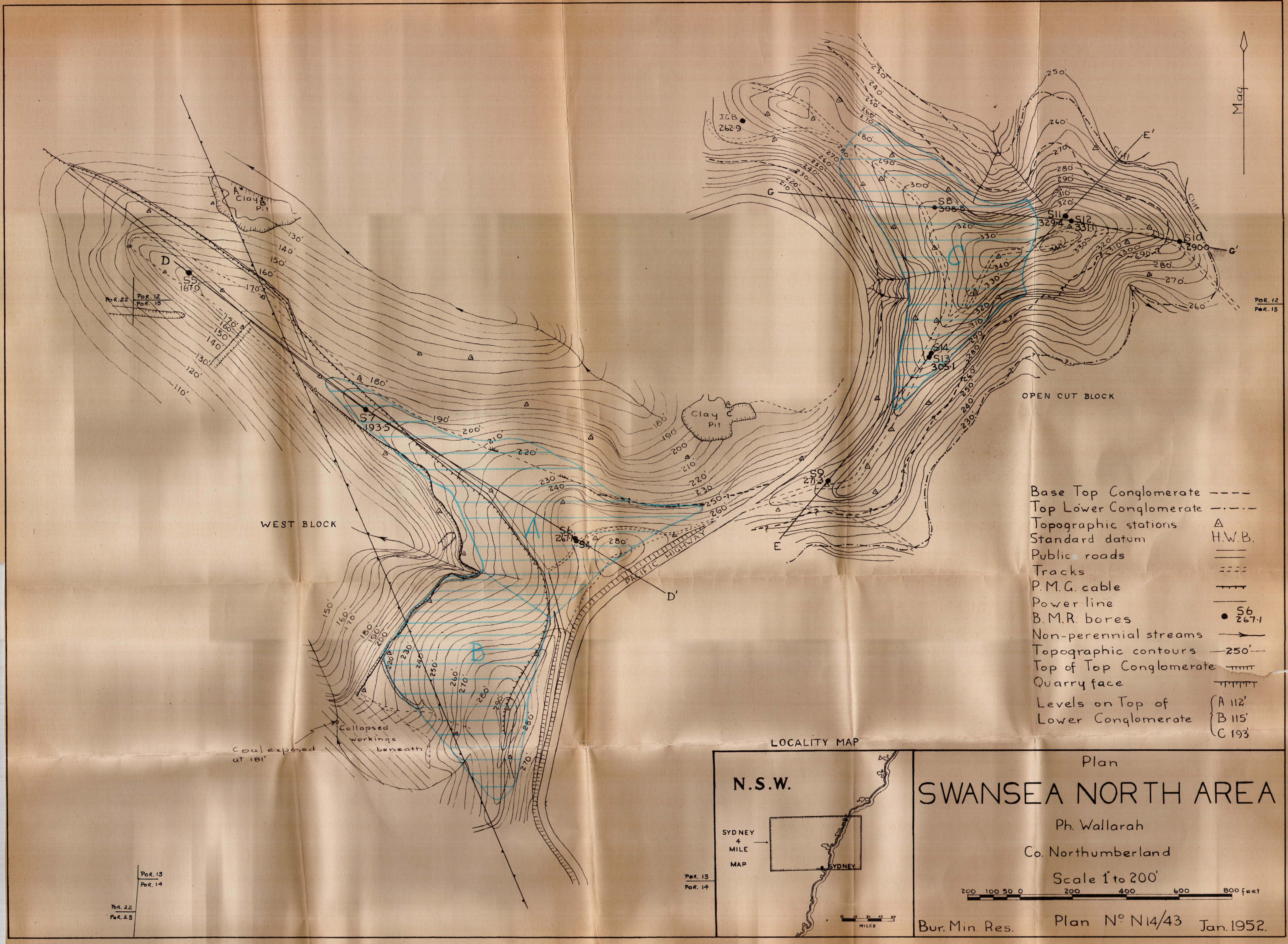
TABLE 2.

Details of bores in coal not included in reserves. (Lower split of Wallarah Seam)

Bore No. B.M.R.	Thickness of Coal EXcluding bands more than ½" thick: Assumed from log ft.	ins. (a)	Recovered and analysed ft.	ins.	% Coal recovered	Overburden thickness Feet	Composition of Coal, bands EXcluded: Moist. %	V.M. %	F.C. %	Ash %	B.Th.U's per lb.	Approx. B.Th.U's per lb. bands INcluded (b)	Bands excluded from analysis inches
5	4	9½	3	4	69.5	51	3.0	26.5	52.9	17.6	11,385	10,700	2½
9	4	2	2	8½	65	47	3.2	25.3	48.3	23.2	10,545	10,545	
12	4	3½	3	3¼	76	78	3.1	26.0	49.7	21.2	10,845	10,200	1½
10	2	7½	1	10½	71	21	8.4	25.0	48.7	17.9	9,160	9,160	
8	5	2	3	11	76	74.5	2.8	24.2	51.8	21.2	10,925	10,925	
13	4	2½	3	6½	89.5	69	3.1	25.6	50.6	20.7	10,920	10,920	
6	2	7	2	6	97	95	2.5	24.0	51.9	21.6	11,000	11,000	
7	5	3	4	6	86	56.5	2.8	25.4	50.5	21.3	10,945	9,850	6

Notes (a) Lost core from within the coal seam and for which there is no information is regarded as coal of the same composition as that recovered and analysed.

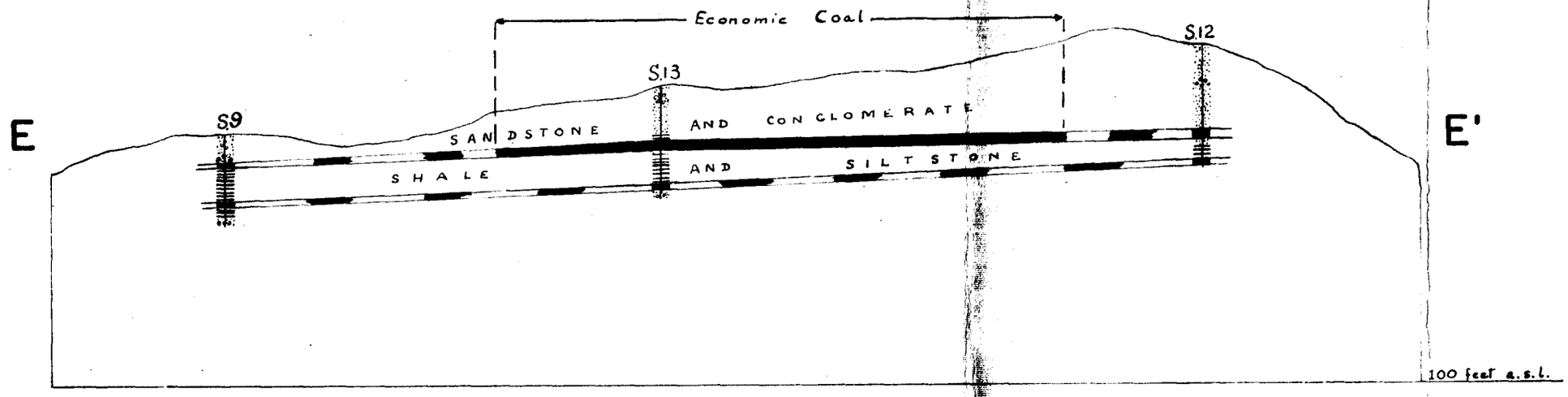
(b) It is assumed that bands have no calorific value.

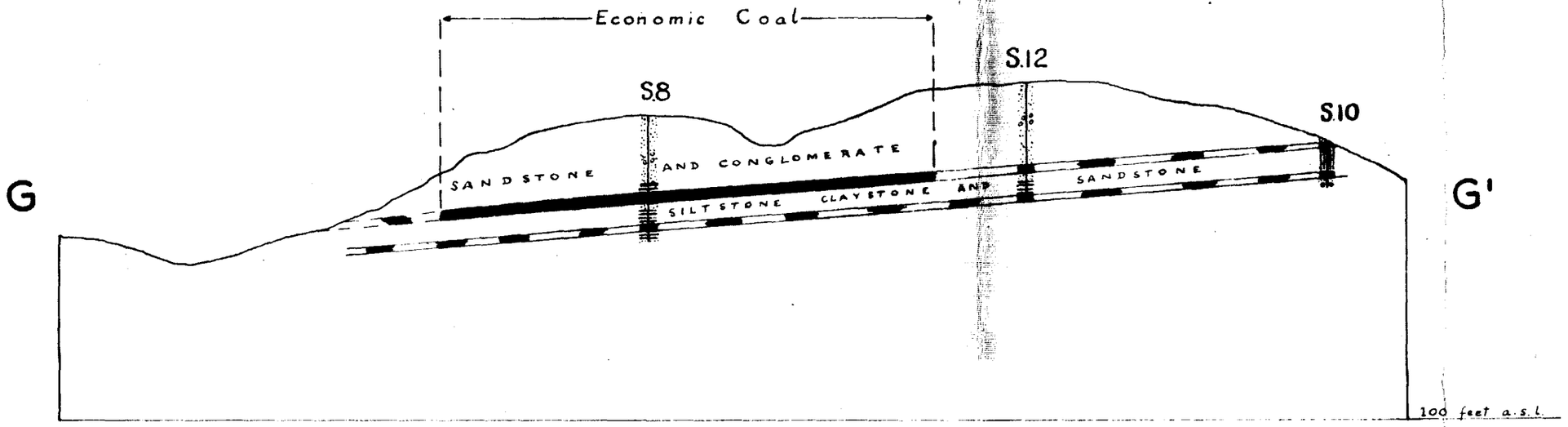


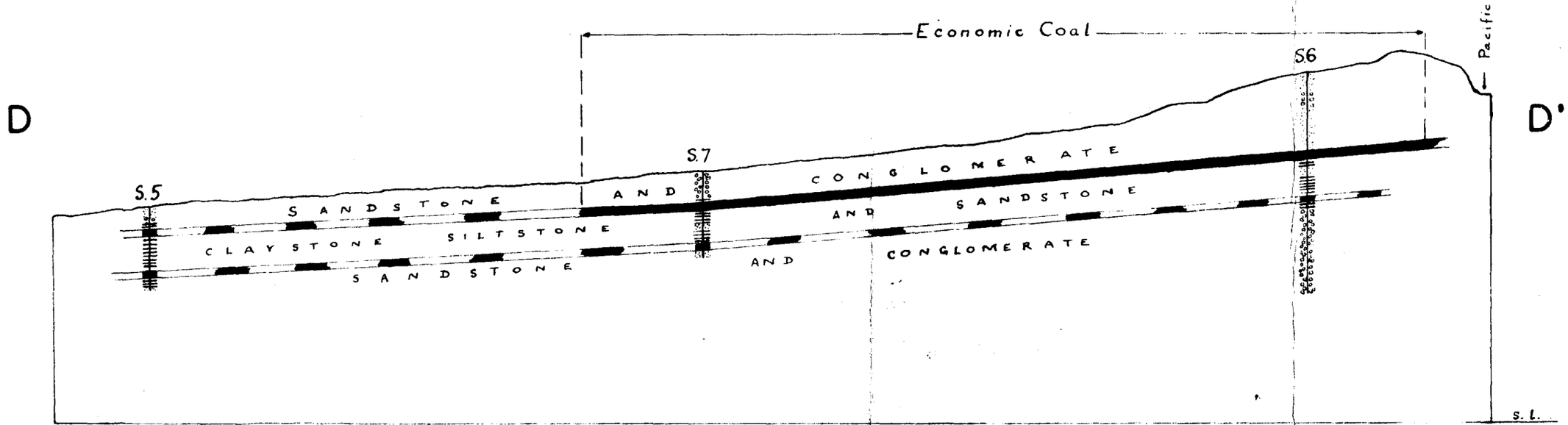
WEST BLOCK
OPEN CUT BLOCK
Clay Pit
PACIFIC HIGHWAY
Cliff
Mag.
Coal exposed at 181'
Collapsed workings beneath
Base Top Conglomerate
Top Lower Conglomerate
Topographic stations
Standard datum H.W.B.
Public roads
Tracks
P.M.G. cable
Power line
B.M.R. bores S6 267·1
Non-perennial streams
Topographic contours 250'
Top of Top Conglomerate
Quarry face
Levels on Top of Lower Conglomerate A 112' B 115' C 193'
LOCALITY MAP
N.S.W.
SYDNEY 4 MILE MAP
SYDNEY
MILES
Plan
SWANSEA NORTH AREA
Ph. Wallarah
Co. Northumberland
Scale 1" to 200'
200 100 50 0 200 400 600 800 feet
Bur. Min. Res.
Plan No N14/43
Jan. 1952.

SECTIONS SWANSEA SUB-AREA

PARISH WALLARAH , COUNTY NORTHUMBERLAND







VERTICAL SCALE

100 75 50 25 0 100 200 300

FEET

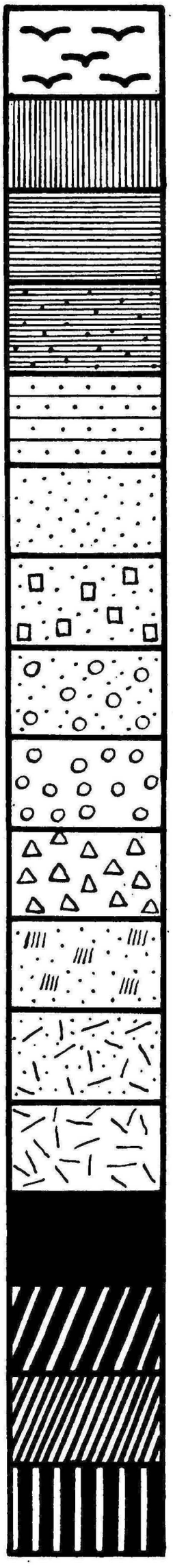
HORIZONTAL SCALE

200 150 100 50 0 200 400 600

FEET

N 14-72

REFERENCE



Alluvium

Clay

Shale

Sandy Shale

Siltstone

Sandstone

Greywacke

Sandy Conglomerate

Conglomerate

Breccia

Chert

Tuff

Igneous Rock

Coal (Under 20% Ash)

Shaly Coal (20-30% Ash)

Carb. Shale (Over 30% Ash)

Carb. Shale or Coal composition unknown

N14-70

BORE LOG: SWANSEA AREA, BORE NO. S 5., PARISH OF WALLARAH, COUNTY OF NORTHUMBERLAND, N. S. W.

R. L. 167 DATUM H.W.B. DEPTH 64′

Depth	Section	Ash	B.Th.U. per lb.	Bands excl. from Analysis	Depth	Section	Ash	B.Th.U. per lb.	Band excl. from Analysis
10									
20									
30									
40									
50′7½″		17·8	11,360						
53′9″									
55′7½″		17·5	11,410						
60									
70									

N14-61 E

BORE LOG: SWANSEA AREA, BORE NO. S 6., PARISH OF WALLARAH, COUNTY OF NORTHUMBERLAND, N. S. W.

R. L. 267·1 DATUM H.W.B. DEPTH 136′

Depth	Section	Ash	B.Th.U. per lb.	Bands excl. from Analysis
10				
20				
30				
40				
50				
58′10″				
60′7″		22·1	10·830	
61′1″		9·8	12,700	
63′2″				
63′5		15·2	11,830	
6′10″				
70				
80				
90				
94′10½″		21·6	11,000	
97′5½″				

Depth	Section	Ash	B.Th.U. per lb.	Band excl. from Analysis
110				
120				
130				
140				

N14-61 F

BORE LOG: SWANSEA AREA, BORE NO. S 7., PARISH OF WALLARAH, COUNTY OF NORTHUMBERLAND, N. S. W.

R. L. 193·5 DATUM H.W.B. DEPTH 66′

Depth	Section	Ash	B.Th.U. per lb.	Bands excl. from Analysis	Depth	Section	Ash	B.Th.U. per lb.	Band excl. from Analysis
10									
20									
23′11½″		20·8	10,900						
26′		9·0	12,700						
27′8″		16·9	11,510						
29′		15·0	11,910						
32′									
40									
50									
57′		19·6	11,140						
58′9½″									
60′		22·9	10·750						
62′3″									
70									

N14-61G

BORE LOG: SWANSEA AREA, BORE NO. S 8., PARISH OF WALLARAH, COUNTY OF NORTHUMBERLAND, N. S. W.

R. L. 308·8 DATUM H.W.B. DEPTH 86′

Depth	Section	Ash	B.Th.U. per lb.	Bands excl. from Analysis	Depth	Section	Ash	B.Th.U. per lb.	Band excl. from Analysis
10									
20									
30									
40									
50									
53′2″ – 54′10″		12·2	12,160						
55′10 – 60′4½″		12·2	12,180						
70									
74′6 – 75′8″		23·0	10,690						
76′7 – 79′4″		19·3	11,160						
80									

N14-61 H

Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SWANSEA
Hole No. S 9
Map Ref: N14/43

R.L. 271.3' Datum: H.W.B.
Driller: B.M.R. Logger: M. KONECNI
Started: 10/11/51 Completed: 13/11/51
Drill Type: SULLIVAN D.D. Total Depth of hole 60'1"
Inclination of hole: VERTICAL

Depth	Section	Description	% Core Recovered
	Sandstone and Conglom.		
10	Sandstone and Conglom.		
20			0
			40
			53
30			100
			93
			97
			71
40			91
			89
		← Chert	92
46'7"			
47'7" – 49'0"		21.9% ash 10,750 B.Th.U/lb.	65
		24.4% ash 10,340 B.Th.U/lb.	
50'9"			85
			60
			37
			88
			100
60			

N14-611

Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SWANSEA

Hole No. S10

Map Ref: N14/13

R.L. 290·0' Datum: H.W.B

Driller: B.M.B. Logger: M.KONECKI

Started: 12/11/51 Completed: 15/11/51

Drill Type: SULLIVAN D.D. Total Depth of hole 36'4"

Inclination of hole: VERTICAL

Depth	Section	Description	Core Recovered
	Sandstone with Clay and Coal.		
10			
	Clay with Sandstone		
	Clay with Sandstone		
20			0
21' 0"		17·9% ash 9,160 B.Th.U.	71
23' 7"			26
			50
			100
30			
			100
			0
			40

N14-61J

Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SWANSEA
Hole No. S 12
Map Ref: N14/4.3

R.L. 331.1' Datum: H.W.B.
Driller: B.M.R. Logger: M. KONECNY
Started: 20/III/51 Completed: 23/III/51
Drill Type: Sullivan D.D. Total Depth of hole: 85'1"
Inclination of hole: Vertical

Depth	Section	Description	% Core Recovered
10			
20			
30			
40			
50			
	Coal		
60			25
			64
			100
			58
			90
70			33
			61
			21
			225
77'8"			79
79'10"		18·7% ash 11,220 B.Th.U/lb.	
80'2"			90
80'5"		23·6% " 10,470 "	
82'1"			71.
			79
90			

N14-61K

Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SWANSEA
Hole No: S 13
Map Ref: N14/43

R.L. 305·1' Datum: H.W.B.
Driller: B.M.R. Logger: M.C. KONIECZNY
Started 26/11/51 Completed 29/11/51
Drill Type: Sullivan D.D. Total Depth of hole: 80'
Inclination of hole: VERTICAL

Depth	Section	Description	% Core Recovered
		Sandstone and Conglom.	
10			
20			
30			
39' 2"			
41' 3"		15·2% ash 9,980 B.Th.U.	33
			13
43' 0"		17·1% ash 10,400 B.Th.U.	35
45' 9"			27
50			78
			62
			88
60			
			91
			94
			89
68' 4½"			87
70		20·7 ash 10,920 B.Th.U.	83
72' 7"			50
			100
			98

N14-61L

COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF SUPPLY AND DEVELOPMENT.

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS.

RECORDS ~~REPORT~~ No. 1952/24

[redacted] SUPPLEMENT

RESULTS OF DRILLING IN THE SWANSEA AREA.

NSW.

RESULTS OF DRILLING IN THE SWANSEA AREA.

An additional hole, BMR18 Swansea (West Block), has been drilled to test the seam quality and overburden in part B of the West Block and thus reach the "testing and defining" objective of the Bureau in the Swansea North Area. The results of this hole have been embodied in this statement which supplements Records 1952/24 "Results of Drilling in the Swansea Area N.S.W." by W.J. Perry.

BMR18 indicated that part B contains 92,000 long tons (on the basis of 1600 tons/acre-foot) of good quality coal in the upper split of the Wallarah Seam and is covered by a maximum overburden of approximately 82 feet composed almost entirely of fine to medium conglomerate. Only an area of 1800 square yards of the part has an overburden ratio exceeding 10/1 and in no place does the ratio exceed 11/1. Total quantity of overburden for the whole of the Western Block has not been reassessed.

The quality of the coal sampled from this hole which is near the area of maximum overburden probably gives a slightly more optimistic view of the area because much of it is under a far thinner cover of overburden. The mean obtained by weighting the samples, with bands of more than ½" excluded, shows the seam to have an ash content of 13.3% and calorific value of 12,130 BThUs/lb. If bands are included and considered to be 100% ash and to have no heating value the seam weighted mean drops to 15.1% ash and 11,870 BThUs/lb. A more detailed statement is contained in Table 1.

The lower split was below the required open cut standard. Thickness was estimated at only 3 feet 11 inches and was separated from the upper split by 22 feet 1 inch of sediments which were almost entirely sandstone. No sample of the coal core from this split was analysed. Maximum overburden to the roof of the lower split would be approximately 112 feet.

Conclusions: Total open-cutable reserves for the whole of the Western Block are assessed now as 212,000 long tons. The original recommendation to proceed with proving in the block is endorsed fully.

G.M. Burton

G.M. BURTON.

TABLE 1.

ANALYSES OF SEAM SAMPLES

BMR Sample No.	Mines Dept. analysis 1952/	Section Depths.	Estimated Coal Core Recovery%	M.M.	Vol.	F.C.	Ash	Coke Nature	Ash Colour	BThUs/ lb	Bands Excluded
1/BMR18	957	73'6" to 74'4½"	76	3.2	27.7	54.8	14.3	Nc	Cream	11,970	1½" from 73'10½"
2/BMR18	958	74'4½" to 76'5"	84	3.2	26.7	57.4	12.7	Nc	Cream	12,210	⅝" from 74' 3⅝"
3/BMR18	959	76'5" to 77'6½"	100	3.1	30.3	56.5	10.1	Aw	Cream	12,570	
4/BMR18	960	77'6½" to 79'11")	89	3.4	24.5	58.9	13.2	Nc	Cream	12,140	
5/BMR18	961	79'11" to 81'5")		3.0	29.7	51.3	16.0	Af	Pink	11,740	

Coal sampled by W.A. McKinnon in the Bureau Field Laboratory and samples analysed by N.S.W. Dept. of Mines Laboratory, Sydney

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BUREAU OF MINERAL RESOURCES

COUNTY Northumberland PARISH Wallarah PORTION 13 BORE NAMES, TYPE AND NUMBERS BMR 18 Swansea (West Block)

BORE LOCATION S.W. Corner of Port 13 60° 1530 ft. DATE COMMENCED 15.4.1952 COMPLETED 17.4.1952 COLLAR R.L. 281.1 ft. A.S.L. CORE PERC APPRO SURVE

REFERENCE MAP N14-99 (BMR) (Swansea North) REFERENCE FILE OR INFORMATION SOURCE BMR Records 1952/24 & Supplement SUNK BY BMR's Failing 750 S/N262 FOR Joint Coal Board DATUM H.W.B.

LENGTH CASED Nil TOTAL DEPTH 124'6 LOGGED BY M.C. Koneski STANDING WATER LEVEL DISTRICT Newcastle D.M.E.

GEOLOGICAL DESCRIPTION OF STRATA	CORE MEASURED FT.	CORE MEASURED INS.	ESTIMATED THICKNESS FT.	ESTIMATED THICKNESS INS.	ESTIMATED DEPTH FT.	ESTIMATED DEPTH INS.	FOOTAGE RECOVERED FT. INS.	FOOTAGE CORED FT. INS.	SAMPLE No.	REMARKS
Sandstone, l.br. c. to v.c. gr.			6	6	6	6				
Conglomerate, l.br. f. to m.			36		42	6				
" gy. to l.gy. f. to m.			31		73	6				
COAL				2	73	8	1/BMR 18			
COAL, bright & dull bdd.		2½		2½	75	10½	Both bds. exclud			
Sandstone, brish. v.f.gr. highly mic.		1½		1½	73	11½				
COAL, dull & bright bdd. pyrf.		4		4	74	3½				
Siltstone, brish. mic		½		½	74	4				
COAL, dull & bright bdd. pyrf.	1	1½	1	1½	75	6	2/BMR 18			
COAL, bright & dull frequently bdd. spotted w. pyrites		8		11	76	5				
COAL, mostly bright w. R. thin dull bds. pyrf.	1	1	1	1	77	6	3/BMR 18			
Silstone, brish. -gy. highly mic. thin bds.		½		½	77	6½	Slst. bd. includ			
COAL, bright & dull frequently bdd. pryf.	1	9	1	9	79	3½	4/BMR 18			
COAL " " " " w. thin fusinitic bds. pyrf.(last 3¼" almost purely finely bdd.bright coal)	1	3½	1	8½	81		(77'6½" - 79'11"			
COAL, bright & dull bdd. w. thin fusinite bds.		5		5	81	5	5/BMR 18			
Siltstone to v.f.gr. sandstone mic. & carb.banding hd.sil	1		1	1	82	6	(79'11" - 81'5"			
Claystone, siltstone, hd. passing into slst. at bottom mic.	1	11	2		84	6				
Sandstone, f.gr. w. carb. bds.			5		89	6				
" br. to dk.br. f. to m.gr. v.hd. sil. w.occasional thin bds. of the off-wh. clst. & cht.bds.	1		1		90	6				
Sandstone as before			5		95	6				
" gy. f. to m.gr.			8		103	6				
COAL			1	11	105	5				
COAL, dull w. thin & R. br. siltstone bds.	1	6	1	6	106	11				
COAL, dull w. frequent slst. bds. br.		4		6	107	5				
Clayshale, brish. -bk. w. bright coal bds.	1	1	1	1	108	6				
Clayshale, gy.		7		11	109	5				
Sandstone, gy. f. to m.gr. fri.	1	10	2	1	111	6				
" " w. wh. bds. m.gr.			5		116	6				
" " f. to m.gr.			5		121	6				
Siltstone. gy.			3		124	6				Completed.

SAMPLE No.	M	V	FC	Ash	BThU/lb
	3.2	27.7	54.8	14.3	11,970
	3.2	28.7	57.4	12.7	12,210
	3.1	32.3	55.5	12.1	12,370
	3.4	24.5	58.9	13.2	12,140
	3.0	29.7	51.3	16.0	11,740

USE ONLY MULTILITH TYPEWRITER RIBBON AND ERASER

*STRIKE OUT ONE

COMMONWEALTH OF AUSTRALIA

Bureau of Mineral Resources, Geology and Geophysics

Area: Swansea (West Block) Hole No. BMR 18 Elevation: 281.1' ASL.

Reference: BMR Records 1952/24 and Supplement Datum: H.W.B.

Begun: 15.4.1952. Finished: 17.4.1952. Depth: 124'6"

STRATIGRAPHIC LOG (1"-10')

Sandstone	6' 6"	6' 6"
Conglomerate	67' 0"	73' 6"
Coal with sandstone and siltstone bands. (see detail)	7' 11"	81' 5"
Siltstone	1' 1"	82' 6"
Claystone	2' 0"	84' 6"
Sandstone	19' 0"	103' 6"
(see detail)	3' 11"	107' 5"
Clayey shale	2' 0"	109' 5"
Sandstone	12' 1"	121' 6"
Siltstone	3' 0"	124' 6"

COAL DETAIL (1"-2')

Ash%	BThU/lb		
14.3	11,970	73' 6" – 74' 3⅜"	9¾"
12.7	12,210	74' 3⅜" – 76' 5"	2' 0½"
10.1	12,570	76' 5" – 77' 6½"	1' 1"
13.2	12,140	77' 6½" – 79'11"	2' 4½"
16.0	11,740	79'11" – 81' 5"	1' 6"

Coal, dull with frequent siltstone bands. 103' 6" – 107' 5" 3'11"

N 14-61 J(2)

SWANSEA NORTH AREA

PARISH OF WALLARAH

COUNTY OF NORTHUMBERLAND

200 0 200 400 600 FEET

POR. 22 | POR. 12
POR. 13

M N

Reference

- Base of Top Conglomerate
- Top of Lower Conglomerate
- Public road
- Tracks
- P.M.G. - cable
- Power line
- S7 193'5" — BMR bores
- Seasonal streams
- 250 — Contours
- Quarry face.
- Topographic stations.
- Section line.

Clay Pit

S7 1935

S6 267'1"

S4

S18 281'

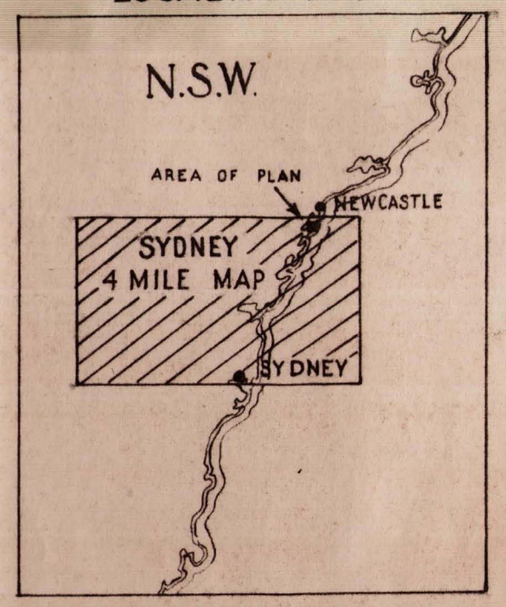
D

D1

B

Collapsed workings beneath.

LOCALITY MAP



POR. 13
POR. 14
POR. 22
POR. 23

N 14-99