

## Chapter 5: Mines in the Southern Highlands

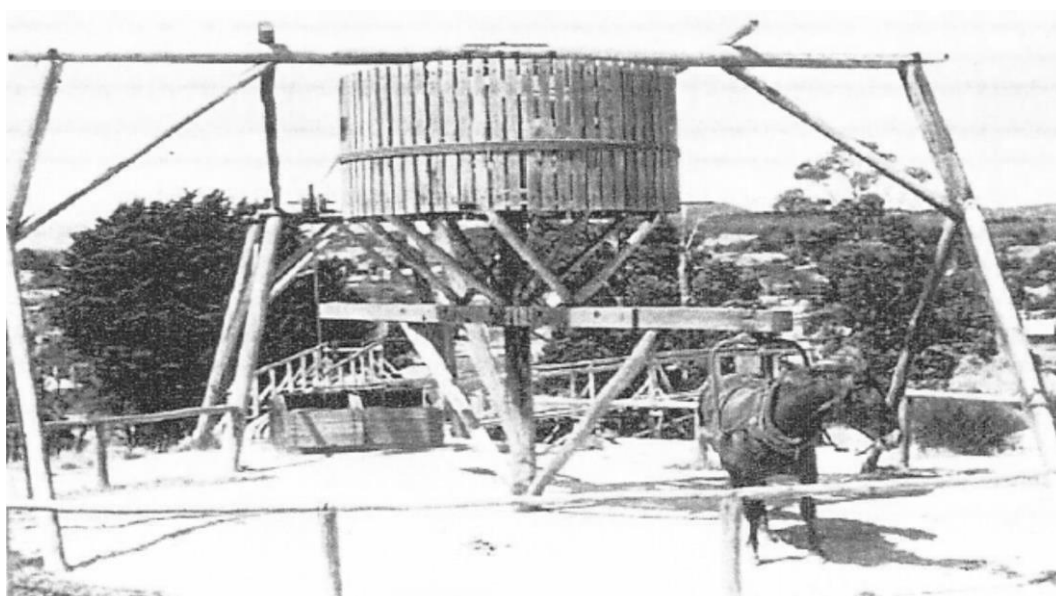
The extent of coal deposits in the Southern Highlands, and their commercial viability, was reported to the State government by mining surveyor Mr William Keene, in 1853. The area to the south of Berrima, near Black Bob's Creek and Medway Rivulet, was identified as being the most promising, for the mining of good quality coal. Most of the collieries in the Southern Highlands mined the Wongawilli coal seam, the third seam in the Illawarra Coal Measures.

### The Medway Collieries

The Medway peninsular is formed by the Wingecarribee River and its tributary the Medway Rivulet. This peninsular, was the site of early attempts at the commercial mining of coal.

Outcrops of the coal seams were exposed in the steep cliff faces of the river system, and although mining from the outcrop, made initial access easy to commence mining, the transport of coal from these rugged terrain locations was difficult. The early small collieries commenced mining by using a hoist, powered by a horse driven whim, to raise the coal vertically from the cliff face to the plateau above. Larger collieries usually progressed to using systems such as an aerial ropeway, often called a flying fox, or an inclined tramway, to raise the skips of coal mined from the seam to the plateau above.

Although early sales were made to the Fitzroy Iron Works, the main market for the coal was steaming coal for government railways. The Companies competed with each other for these contracts, and losing a railway contract caused financial difficulties, for many collieries.



**Whim with a Swivel on the Drive Bar for the Horse to Walk in either Direction<sup>487</sup>**  
**Cataract Mine**

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<sup>487</sup> J. Galloway "The Story of Early Medway in the Southern Highlands NSW", p. 9.

The first colliery to open in the Southern Highlands was the Cataract Mine, owned by Messrs A. J. Huntley and J. L. G. Brereton. The adit (entrance) to this mine was close to the cataracts formed by a waterfall on the Medway Rivulet, and is assumed to have given the colliery its name.



**Rope Hoist (at left) used to hoist Coal from the Adit to the Platform at Cliff Top<sup>488</sup>**

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<sup>488</sup> Australian Town & Country Journal NSW, 25<sup>th</sup> March 1876, p. 500 and The Illustrated Sydney News, 15<sup>th</sup> April 1869, p.168.

A horse operated whim (hoist) was used to raise the coal, by rope, from the adit to the cliff top. To lower the rope, the horse was turned around and walked in the opposite direction.

The Cataract Mine was opened in 1867 to supply the Fitzroy Iron Works at Mittagong, with the owners of this mine being significant shareholders and Directors of that venture. The mine closed temporarily in 1870, and reopened again in 1874, to produce 1,000 tonnes of coal. The colliery remained open for several years before finally closing in 1877, the same year in which the Fitzroy Ironworks Blast Furnace was shut down.

### **Fitzroy Iron Works**

A naturally occurring deposit of “boghead iron” was discovered at Mittagong in 1833, during the construction of the Hume Highway.

In 1884 Australia’s first iron ore smelting works was established at the Mittagong, when Messrs John Thomas Neale, Thomas Holmes, Thomas Tipple Smith and William Tipple Smith acquired land at Nattai, and commenced smelting the iron ore in a primitive Catalan forge. A cupola was used for making iron castings, using a fuel that was charcoal, created from the incomplete combustion of timber, taken from trees nearby.

In September 1851 the Fitzroy Iron Works Company was established. The Directors of the Fitzroy Iron Works considered that a source of cheap coking coal was needed for the Ironworks to be successful, commercially.<sup>489</sup>



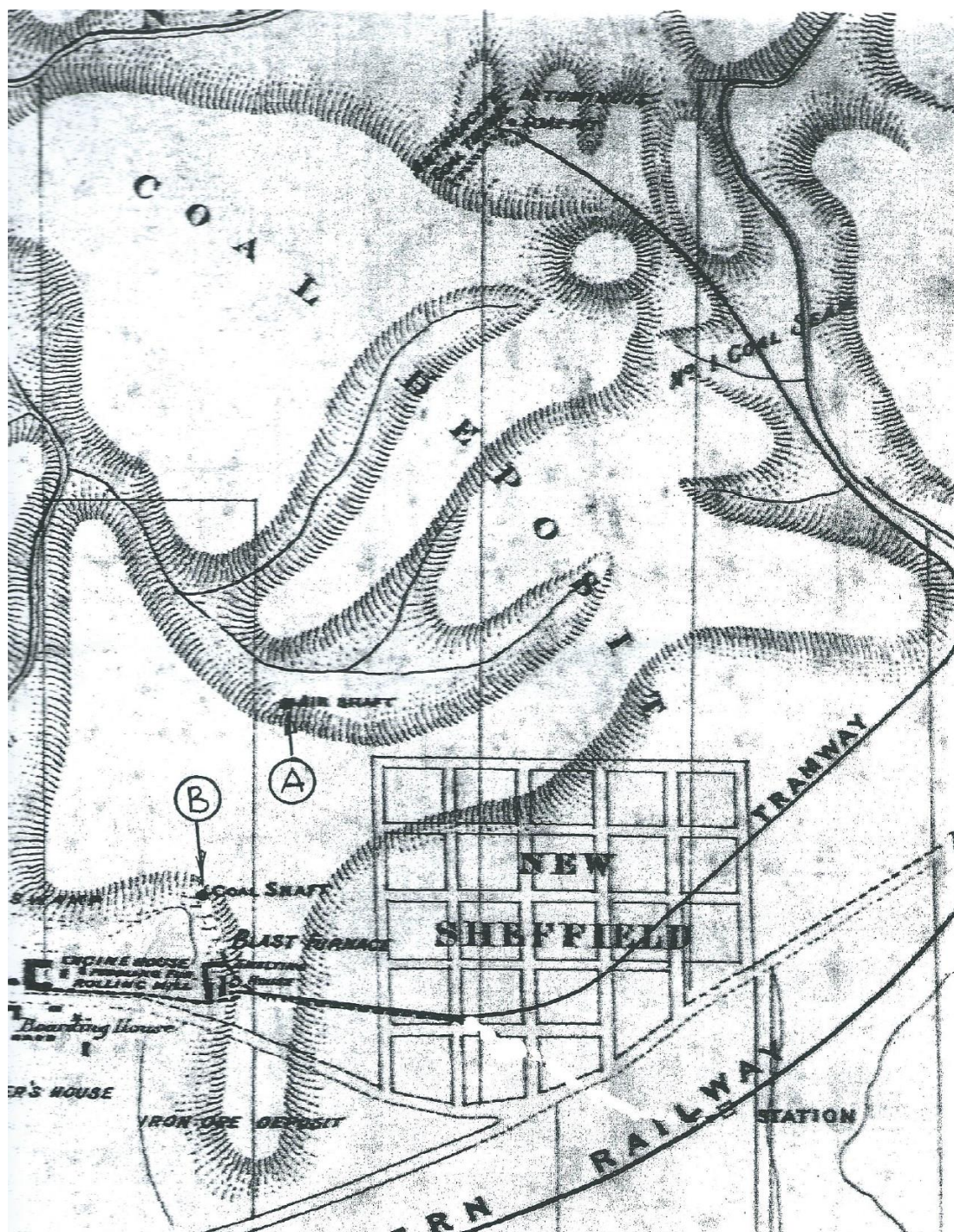
**The Fitzroy Iron Works Blast Furnace<sup>490</sup>**

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<sup>489</sup> Fitzroy Iron Works Company Minute Book, Volume 2. p. 230, 232, 242, 260 and 275.

<sup>490</sup> J. W. Thompson, The Old Blast Furnace at Mittagong NSW, BHP Review April 1939.





Fitzroy Iron Works Plan showing the (A) Air Shaft and (B) Coal Shaft and Tramway<sup>491</sup>

The plan of the early Fitzroy Iron Works shows the location of the (A) Air ventilation and (B) Coal Shafts, and the original horse drawn tramway to adits, where coal was mined. The main Southern Railway line and Mittagong station are shown at the bottom of this plan, in the Company's Prospectus.

Such was their need for coal, the Directors of the Company commenced the sinking of a coal Shaft and an air Shaft for the coal mine, on their own site in 1856, when they were starting to

<sup>491</sup> Fitzroy Iron Works Company's Prospectus.

build the rolling mills. The very expensive work involved in sinking Shafts was undertaken without first drilling a borehole to prove the depth and thickness of the coal seam. The sinking of both Shafts continued for twelve years before a borehole was drilled.<sup>492</sup>

The 3.6 m diameter Coal Shaft reached a depth of 68 m before the decision<sup>493</sup> was taken in 1867, to drill a borehole from the bottom of the Shaft to determine the depth and thickness of the coal seam below. The borehole located the coal seam at a depth of 105 m from the surface, having a seam height was 1.48 m. The second Shaft, required for the ventilation of the mine, had been sunk to a depth of 49 m, before a borehole was drilled. After 31 m of drilling the borehole struck basalt rock, presumed to have been an igneous intrusion, called a basalt sill. The result of that boreholes findings, ended all thoughts of operating a Colliery at the Ironworks site.

In 1870 the original Fitzroy Iron Works Company went into liquidation. The Companies assets were auctioned, and were purchased by John Frazer. A new Company, the Fitzroy Bessemer Steel, Hematite, Iron and Steel Company Ltd. was formed in London, and took over the property from John Frazer, in 1873.

There were no serious attempts made to mine coal for the Fitzroy Iron Works, after the Blast Furnace was shut down in 1877, never to operate again.<sup>494</sup>

All activities associated with the Fitzroy Iron Works ended about 1884, and attempts by others to carry on with a Mittagong Iron industry, all came to an end in about 1896.

During its operations, the Fitzroy Iron Works trialed coal from other small collieries in the area. Coal from Black Bob's Colliery was suitable, however, the 30 km transport distance proved unduly expensive. Coal from Cataract Mine was suitable, however, that colliery was located at Medway, did not have a railway line access, and transport costs would be expensive.

Coal mined from nearby Mount Alexandra was anthracitic coal, not a bituminous coal, and would not produce a coke product, suitable for iron making in a Blast Furnace. This situation was most unfortunate as it is rare to find, anthracitic coal in Australia. The bituminous coal in the Wongawilli coal seam had been converted to anthracite by the heat of a localised igneous intrusion, overlying the coal seam, described by Geologists as a syenite sill.<sup>495</sup> It is a localised anomaly.

There were some small trials of coal delivered by road from Bulli and Lithgow, however, the transport costs were far too expensive. The Fitzroy Iron Works Blast furnace, shut down in 1877 was finally demolished in 1927.<sup>496</sup>

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<sup>492</sup> Fitzroy Iron Works Company Minute Book, Board meeting 2<sup>nd</sup> March 1868. In his second report to the Board, manager Thomas Levick stated that the air Shaft had been sunk 12 years previously, so commenced in 1856.

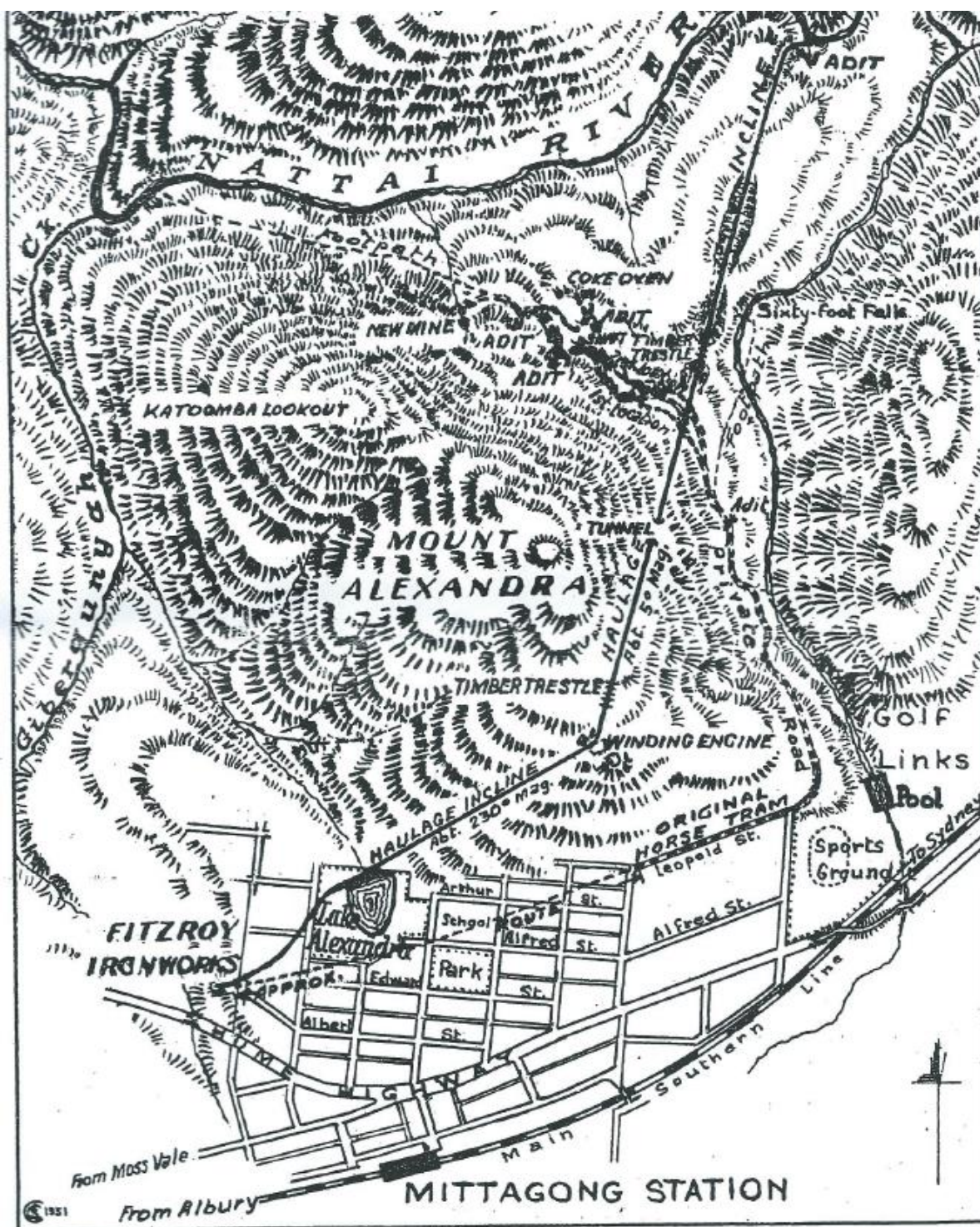
<sup>493</sup> Fitzroy Iron Works Company Minute Book, p. 255.

<sup>494</sup> R. Else-Mitchell "Early Industries in the Mittagong District", p.29.

<sup>495</sup> C. L. Adamson "The Geology of the Nattai Dome near Mittagong", NSW Mines Department Annual Report (MDAR) 1956, pp. 80-81.

<sup>496</sup> J. L. N. Southern and J. E. A. Platt "The History of Ironmaking in Australia 1848-1914", p. 27.

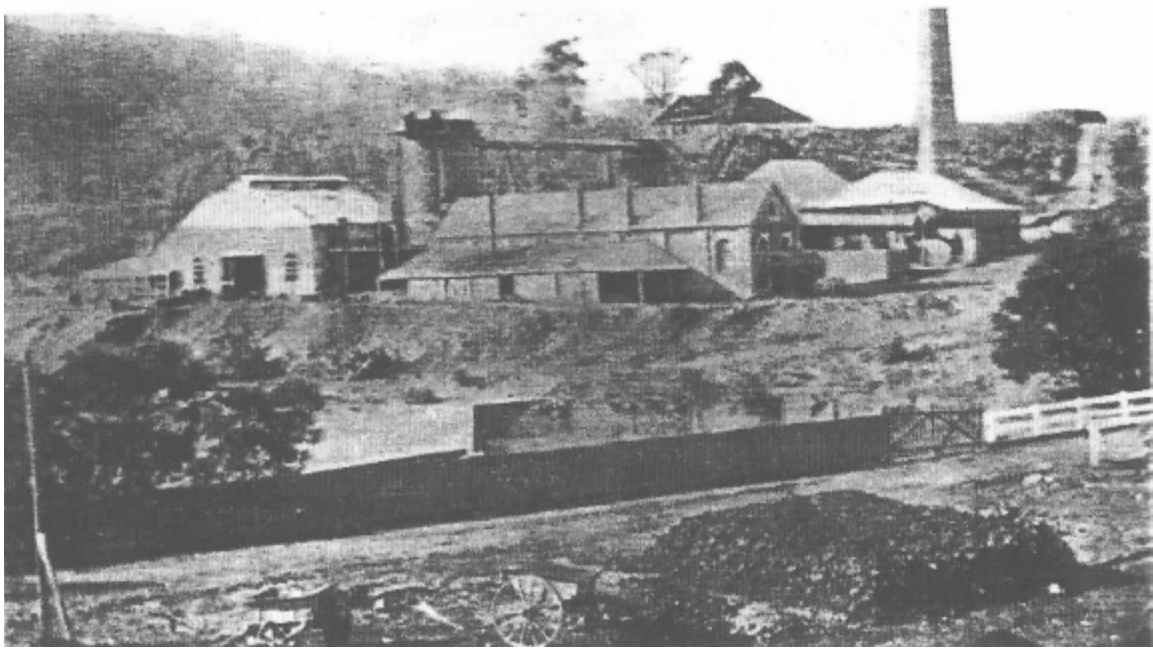




Depiction of Fitzroy Iron Works Tramways<sup>497</sup>

The adits (entrances) of tunnels on Mount Alexandra, where coal was mined for the Fitzroy Ironworks, are shown in upper section of the above depiction. A haulage winder was installed to move the skips of coal on the tramway built for this purpose. The empty skips were returned on the same tramway. The artificially constructed Lake Alexandra, formed when the tramway was installed, provided a reliable source of water for the Iron works.

<sup>497</sup> "Fitzroy Iron Works Tramways" Australian Railway Historical Society Bulletin No.178, August 1952.



**Fitzroy Iron Works and Blast Furnace at the Time of Greatest Production**<sup>498</sup>

Remnants of the Foundations of the Fitzroy Iron Works can be viewed at the underground Parking station of the present day, Woolworths Supermarket building in Mittagong.

### **Berrima Coal Mining and Railway Company**

Mr J. O. Atkinson, acting under the Company name of the Berrima Coal Mining and Railway Company Ltd, opened a colliery on the Medway Rivulet in 1881. That Company built a standard gauge private railway line to join the main southern railway line, north of Moss Vale.

Mr J. G. Swinney, who was the original manager of the Berrima Coal Mining and Railway Company Ltd, described the mine as Berrima Colliery, and became the first of two collieries, to bear that name.<sup>499</sup> By February 1882, the mine had a contract to supply 12,000 tonnes of coal to the NSW Government Railways, and a small contract to supply coal to Wodonga in Victoria. In 1883 Mr Ebenezer Vickery, a major shareholder and Chairman of the Fitzroy Iron Works Company, took over the mine. He closed the mine in about 1886 when he lost the contract to supply coal to Victorian, and in 1889, the Berrima Coal Mining and Railway Company went into liquidation.<sup>500</sup>

NSW Department of Mines records show the Great Southern Mining Company took control of the colliery in 1889, named it the Great Southern Colliery, and operated it until 1895.<sup>501</sup> The State Railway Archives records show that the last despatches over the private railway took place in 1896. After that the private railway lay derelict for many years.

<sup>498</sup> J. McColgan, *Southern Highlands Story*, 1995, p. 118.

<sup>499</sup> J. G. Swilley "The Collieries, Coalfields and Minerals of New South Wales, Australia", 1884, p.21 (Mitchell Library shelf no. 338.2/S).

<sup>500</sup> Australian Railway Historical Society Bulletin No.256, p. 23.

<sup>501</sup> B. J. Andrews "Coal Mines of NSW 2011, p.184.





### **First Locomotive used at a Colliery in the Berrima area<sup>502</sup>**

After the Berrima Coal Mining and Railway Company went into liquidation in 1889, the right-of-way for the above Companies private railway, became the property of Messrs. D. Thompson and J. Blackburn. By 1914, whilst the rails of the above railtrack had been pulled up, the wooden sleepers were still in place, and the right-of-way remained in force.

A large gap exists in the years 1896 to 1923 in the history of mining in this area. In 1923 mining recommenced, and several collieries were opened, in rapid succession.

### **Loch Catherine Colliery**

In 1923 Mr Wilfred Marsh obtained the coal leases of an extensive area of land on the Medway Peninsular and opened the Loch Catherine Colliery.<sup>503</sup>

The Prospectus for Loch Catherine Colliery stated that “On the south bank of Carrada Creek (Medway Rivulet) the driving of a tunnel has commenced, a small aerial ropeway has been installed on the north side of the gorge, and extending up the hill to the terminus of a temporary roadway, connecting with the main road to Moss vale.” The Company was unable to attract sufficient capital via its prospectus and it was never floated.

When it became evident the Loch Catherine venture was not going to materialise, Mr A. S. (Stan) Taylor negotiated the purchase of some of the leases from Mr Marsh. Stan Taylor also obtained other coal leases in the area, with the intention of opening his own colliery.

The Loch Catherine Colliery produced spasmodically from 1923 until 1930, and it is assumed that the mine was only worked when small orders for coal, were received.

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<sup>502</sup> Light Railway Research Society of Australia, “Light Railways” magazine No.74.

<sup>503</sup> J. Jervis “A History of the Berrima District”, 1962, p. 157.



NSW Mines Department records indicate that the colliery reopened in 1948, with little or no production recorded from the mine and it closed in 1959, reopened in 1964 and in 1990, the mine was amalgamated with Berrima Colliery.<sup>504</sup>

### **Belanglo Colliery and Belanglo Extended Colliery**

In 1923 the Southern Portland Cement Ltd was granted a lease and opened the Belanglo Colliery on the Medway Rivulet, to the west of Loch Catherine Colliery. A tortuous roadway was constructed to provide a means of transport up from the coal seam adit into the area now known as the Belanglo State Forest. The Belanglo Colliery closed in 1930.

NSW Mines Department records state that Belanglo Colliery was re-opened in 1945 and abandoned in the same year.<sup>505</sup>

Belanglo Extended was opened by Southern Coal Mining Pty Ltd in 1958, however, Mines Department records indicate it was abandoned in June of the same year due to water inflow.<sup>506</sup>

### **Medway Colliery**

Mr A. S. (Stan) Taylor, under the Company name of the Medway Colliery and Railway Company Ltd, opened the Medway Colliery in 1924 on the banks of the Wingecarribee River adjacent to Loch Catherine Colliery. In 1925, the Medway Colliery and Railway Company Ltd purchased the right-of-way for the private railway, originally created in 1881 by the Berrima Coal Mining and Railway Company.<sup>507</sup>

In 1926 the Southern Portland Cement Ltd Company purchased the Medway Colliery and Railway Company as a means of supplying coal to the cement works being constructed at New Berrima. Messrs Cecil and Sid Hoskins were Board members, and Mr Stan Taylor was the Chairman of the Company. The Company acquired the Medway Colliery and Railway Company Ltd for £30,000 fully paid, one pound shares, and paid £ 2,000 pounds for the coal rights to Stan Taylor's lease holding, called Loch Catherine No.1. Stan Taylor retained his lease holding of what was known, as the Loch Catherine No.2 holding.<sup>508</sup>

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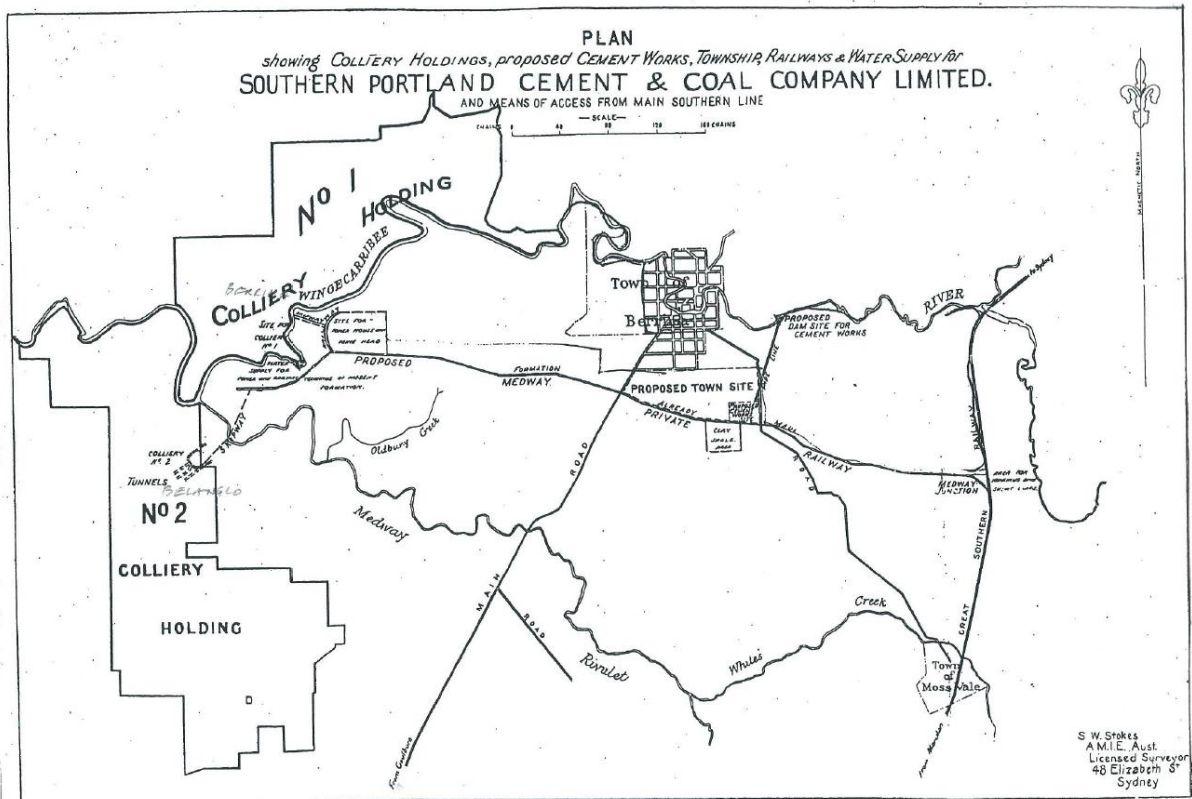
<sup>504</sup> B. J. Andrews "Coal Mines of NSW" 2011, p. 254.

<sup>505</sup> B. J. Andrews "Coal Mines of NSW" 2011, p. 42.

<sup>506</sup> B. J. Andrews "Coal Mines of NSW" 2011, p. 42.

<sup>507</sup> H. H. Matthews "The Railways of Berrima" and C C Singleton "The Southern Portland Cement Ltd Railway", both in Australian Railway Historical Society Bulletin No.256, February 1959.

<sup>508</sup> P. McKay "The History of the Cement Industry to 1939," 1977.



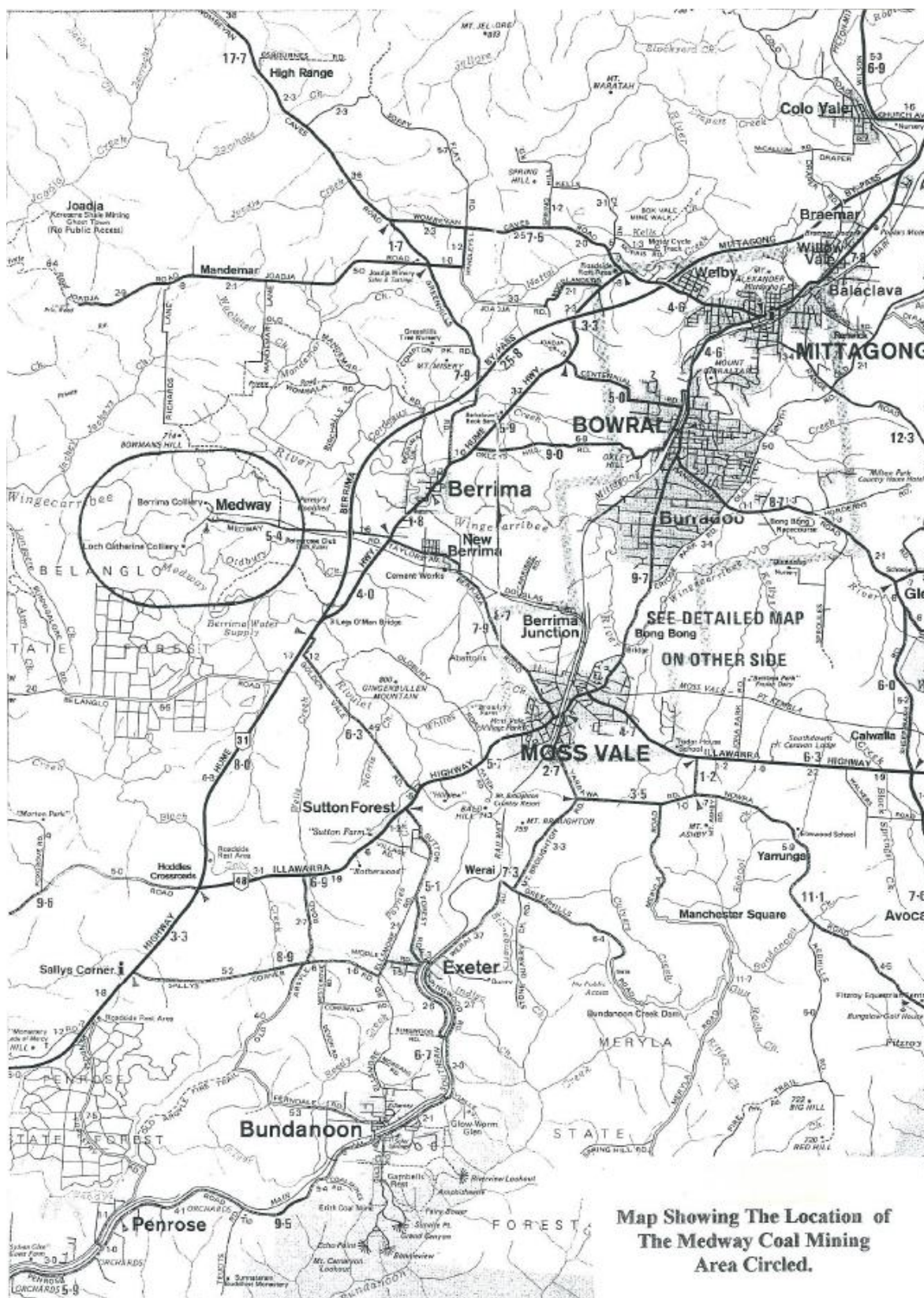
Plan from the Prospectus of the Southern Portland Cement and Coal Company Ltd<sup>509</sup>

The Prospectus of the Southern Portland Cement and Coal Company Ltd provided a map showing the colliery holdings and surrounding area.

Having obtained ownership of the private railway line, the Southern Portland Cement Company extended the railway to the Loch Catherine Colliery. The extended railway line was opened for business in February 1927 and, in October 1927, the Medway Colliery was renamed the Berrima Colliery.<sup>510</sup>

<sup>509</sup> B. Strode et al., "The Story of Cement at Berrima" 2004. p. 2.

<sup>510</sup> C. C. Singleton "The Southern Portland Cement Ltd Railway" in ARHS Bulletin No.256, February 1959.



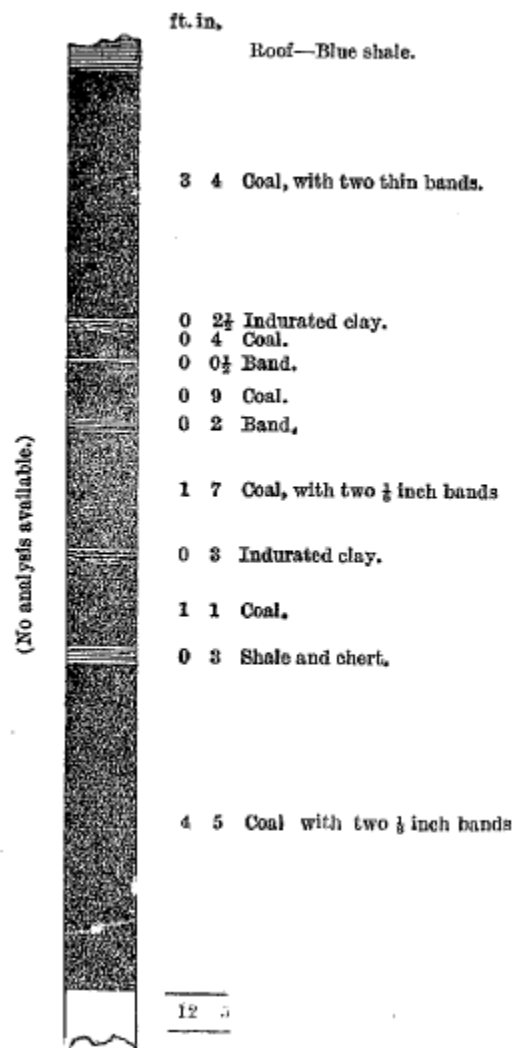
Location Map showing the Medway Coal Mining Area<sup>511</sup>

<sup>511</sup> Map source: D. K. Reynolds and G. R. Mould, unpublished notes.



The seam section shown below was taken from the 1924 NSW Mines Department Annual Report and shows the seam thickness at the Berrima Colliery, as being 3.6 metres (12 ft):

Section Berrima Coal Company Colliery, about 4 miles west of Berrima



Coal Seam Section at Berrima Colliery<sup>512</sup>

## Berrima Colliery

Berrima Colliery was located on the edge of the Wingecarribee River. The adit (entrance) to the mine was in a cliff face. An inclined bridge was built across the gorge of the Wingecarribee River to provide access to the adit. A double track endless rope inclined tramway transported the coal skips in and out of the mine workings via the adit, across the bridge, and up to the tippler, Screens and bins on the opposite side of the river gorge.

<sup>512</sup> NSW Mines Department Annual Report 1924, p. 96.



**Inclined Tramway at Berrima Colliery showing full skips of coal being raised on the left track and empty skips being lowered on the right track<sup>513</sup>**



**Coal Screening at Berrima Colliery<sup>514</sup>**

The Berrima Colliery employed over one hundred men, until the Contract system of mining was replaced in the 1960s by the mechanised system of mining, and the workforce was reduced. Pit ponies that had previously been used to haul skips of coal from the working faces to the mine adit (entrance), were retired in 1968. The mechanised mining system included the use of conveyor belts to transport coal from the coal production areas to the surface, and ended the use of pit ponies in coal mines.

<sup>513</sup> J. Galloway "The Story of Early Medway in the Southern Highlands of NSW", p. 11.

<sup>514</sup> B. Chamberlain "The Medway Railway to Berrima Junction", p. 8 (from Blue Circle Southern Cement Company archives).



**Resting Paddock for the Berrima Colliery Pit Horses<sup>515</sup>**

Continuous miners and shuttle cars were introduced, as mining machinery for coal production. After developing each new production panel, most of the remaining coal in the panel was recovered by pillar extraction.

Coal mined from the Wongawilli Seam at Berrima Colliery proved to be ideal for the cement making process. The ash content of that coal was in the order of 30 per cent., much higher than the 19 to 22 per cent. ash found in thermal coal, and ideal for making Cement. The use of a low ash coal, would have required the addition of sand to increase the ash content for use in the Plant.

It was this nexus between Berrima Colliery and the Berrima Cement Works that provided longevity to the Berrima Colliery. In contrast, other collieries in the area had closed, for reasons that included an inconsistent market demand, for the coal being offered.

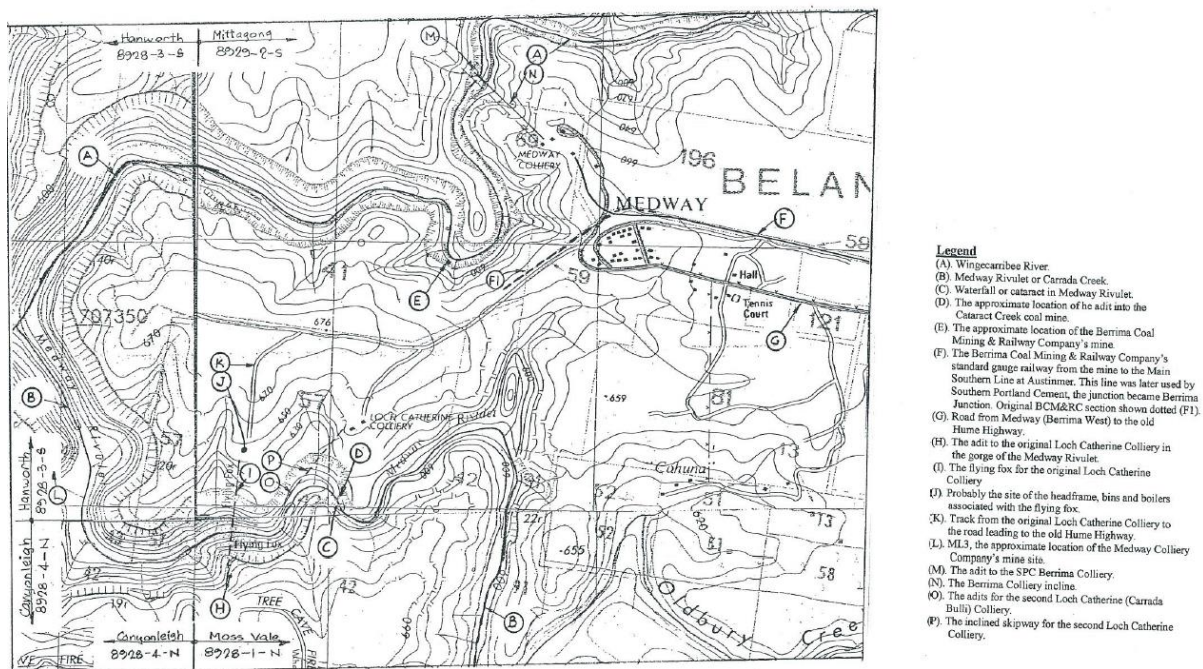
The volume of coal utilised by the Berrima Cement Works depended on the market demand for cement and in recent decades, the Plant has required between 180,000 and 220,000 tonnes of coal per annum, and the Colliery was able to adjust its production output, to suit that demand.

The Berrima Colliery supplied the Cement Works with coal until it reached the end of its economic life, and closed in November 2013, having operated for 89 years. This milestone, made it the longest, and only operating colliery in the area in recent years, and the last to close in the Southern Highlands.

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<sup>515</sup> J. Galloway "The Story of Early Medway in the Southern Highlands of NSW," p. 12.

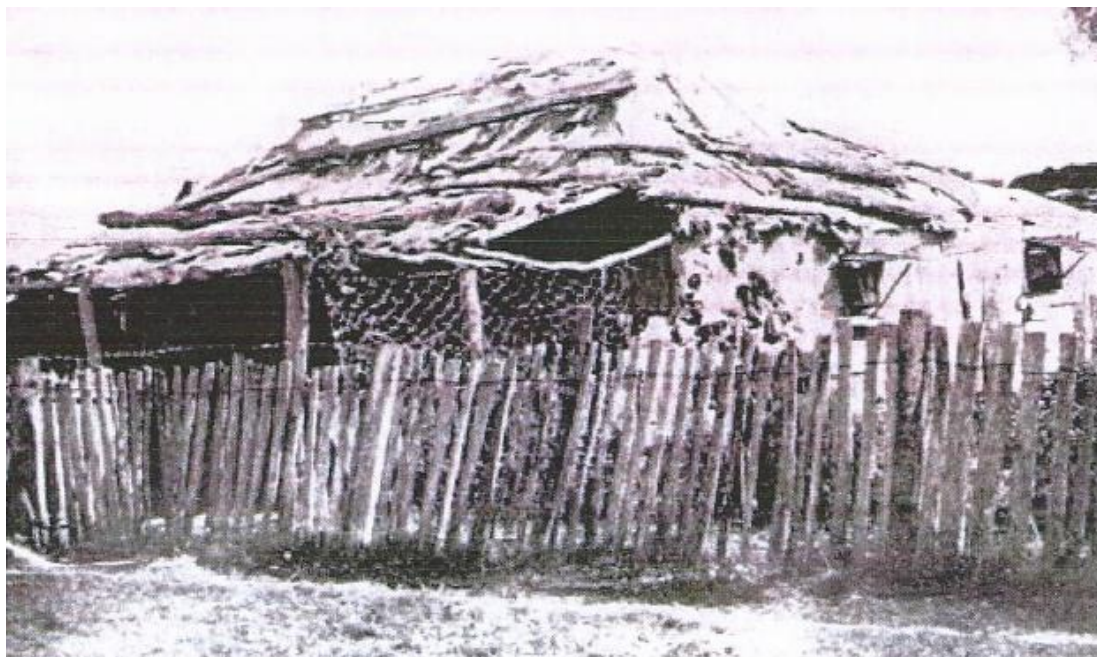




Composite topographic map showing Loch Catherine Colliery and Medway Colliery<sup>516</sup>

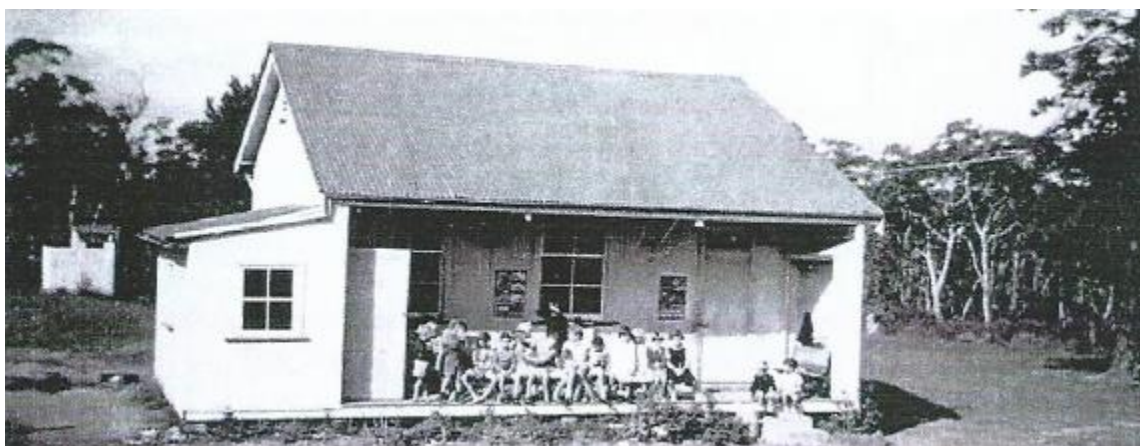
### Medway Colliery and Village

Following the opening of the Colliery in 1924, a cluster of roughly built miner's shacks developed at Medway, as coalminers family homes. A new village was later constructed at Medway, with good quality bungalow housing, with electric power connected to the village in 1946, and a village Hall erected in 1950. The Medway village still exists, at this point in time.



Coal miners lived in roughly built houses in the early days<sup>517</sup>

<sup>516</sup> Source: D. K. Reynolds and G. R. Mould, unpublished notes.



**Medway School House**<sup>518</sup>

### **Carrada Bulli Colliery**

The Metropolitan Portland Cement Ltd was formed in 1948 by Mr Stan Taylor, who had retained the coal lease area, he called Loch Catherine No.2 Colliery Holding. Ownership of this coal lease allowed a new colliery to be opened.

In 1949, the Company established its new colliery on the Medway Peninsular, adjacent to the old Cataract mine. The NSW Mines Department would not allow the Company to name the new colliery, the Loch Catherine Colliery, as it could cause confusion with the original colliery of that name. The colliery was given the name “Carrada Bulli Colliery”.

An electrically driven coal cutter was installed to cut a slot (a “kerf”) in the coalface, to support the effective shotfiring of the face and a battery powered shuttle car was used to transport the coal from the working face to a storage bin on the surface. The surface Plant included an electrical substation, a battery charger for the shuttle car batteries and a mine ventilation fan, driven by an electric motor. The coal from the surface storage bin was hauled by road to the Maldon Cement works.

The colliery adits were on the opposite bank of the Medway Rivulet (aka Carrada Rivulet) to those of the earlier Cataract Mine, the first colliery opened in the Southern Highlands. The mine was located in an idyllic location, with the waterfall in the Medway Rivulet clearly visible from the Colliery.

In 1952 the Metropolitan Portland Cement Ltd Company found itself in financial difficulties, and the Carrada Bulli Colliery was closed.

### **Blue Circle Southern Cement**

Many of the leases of coal bearing land mentioned in the Medway peninsular, became the property of Southern Portland Cement, and its later successor the Blue Circle Southern Cement Company. These leases are currently owned by an international Company, Boral Ltd, who continue to operate both the Berrima Cement and the Maldon Cement Works.

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<sup>517</sup> J. Galloway “The Story of Early Medway in the Southern Highlands of NSW,” p. 33.

<sup>518</sup> J. Galloway “The Story of Early Medway in the Southern Highlands of NSW”, p. 30