The Closure of The Burra Smelter

In 1861, because the Burra Mine lode was dwindling, the company erected a new smelting plant at Port Adelaide. This was the beginning of the end for the Burra Smelter and it became little more than an ancillary to this new plant, that took ore from all of its contracted mine sites particularly from the Wallaroo and Moonta Mines. After its closure in 1869, the major operational components were either sold off or used at the Company's Port Adelaide or Newcastle plants, leaving the buildings intact. However over the next twenty five years they were dismantled and their stone and timber was sold to recoup any costs

The Last Residues

The glassy slag waste that had accumulated in a huge mound over the years was sold off as road building material but much of it was still left, until in 1891 the Burra Slag Smelting Co. contracted to crush the slag and recover any copper residues. Although initial attempts failed, in 1900 with the aid of better crushers, a stamp battery and a small ore reduction plant over the next seven years, 450 tons of copper were extracted. These smelting operations were eventually wound-up in 1907.

Dismantling Operations

Most of the structures were dismantled in 1929 except for the 80-foot brick chimney and the stables, which still remain today. When it was deemed to be unsafe in 1956 the chimney was dynamited and its bricks salvaged for sale.

Preserving the Past

With the exception of the Smelts stables, which are privately owned, most of the site is now the property of the Goyder District Council, and is now a tourist site that reminds us of Burra's past.



References

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The Burra History Group Incorporated 2007

THE BURRA SMELTER

BURRA
SOUTH AUSTRALIA



A view of the ruins of the Burra Smelter in the 1890s

Compiled by Julian Ratcliffe
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2007

The Burra Smelter

World Copper Smelting

At the time of the emergence Burra Burra Mine, Swansea in Wales was the centre of world copper smelting, because it was rich in coal. About 4 tons of coal were required to produce 1 ton of copper, so it was more profitable to ship Cornish copper ore to the coal for smelting rather than the other way round. To begin with, South Australia's copper mines followed suit, its ore being treated at Schneider and Co.'s Spitty smelter at Llwchwr (now known as Loughor).

A Much Sought-after Ore

Burra's ore was greatly sought after by British smelters not only because of its high copper content but also because it contained no sulphides. Sulphurous ores required up to ten smelting stages to produce refined copper. By adding the Burra ore, which was composed of carbonates and oxides, the number of stages could be reduced to five.

The Promise of a Local Smelter

The Burra Mine's distance from Port Adelaide cut into potential profits as enormous amounts of money, an estimated £53,000 in 1848, were outlaid on carting the ore by bullock drays. Taking as long as three weeks for the round trip for a bullock dray to shift 2 tons of ore, the pressure was on to establish a local smelter. By 1848 three smelters had been constructed in South Australia each fuelled with charcoal produced from local timber rather than coal, but with limited success.

The First Furnaces

The foundation stone of the smelting works first furnace house was laid by the Patent Copper Co. in December 1848. Its first furnace was lit less than four months later. When completed in 1849 this furnace house held a row of eight furnaces each with its own chimney. These furnaces were coal-fuelled reverberatory furnaces that were supplied with imported coal and flux materials transported from Port Wakefield along the Gulf Road. From 1850 onwards, supplies of iron ore found locally, at Black Springs, were used as the flux material. Local timber was used to produce charcoal to supplement the coal reserves necessary for smelting. The refining house with its three furnaces was completed in 1850.

More Furnaces

A second furnace house with nine furnaces in two rows had underground flues that led to a single large red brick chimney was completed after delays due to shortages of labour and building materials, in 1853.

Also on the property were a crushing house, a sawmill as well as workers sheds, cottages, offices and a mechanics workshop.

Up to twenty one furnaces were constructed on the site, but there is no evidence that they were ever all operating at the same time.

The Agreement

In 1849, The Patent Copper Co. signed an agreement with the S.A. Mining Association that it would supply 10,000 tons of ore containing 15% to 35% copper during the first year and 30,000 tons over the next six years, giving them a virtual monopoly over the medium to low grade ore. In return, the smelter paid SAMA two-thirds of the smelted copper price. However it left SAMA to control its richest ore. This loophole allowed SAMA to send its richest ore to the Apoinga Smelter, which was a smaller but more successful operation, leading to a dispute between the parties.

In 1851 a new contract was draw up between SAMA and the English and Australian Copper Co. the new proprietors of the smelting site, a London-based company with Schneider and the Patent Copper Co.'s former directors still at the helm.

The Smelting Season

Smelting operations could only proceed during the summer months because during the winter the *Gulf Road, which was constructed and maintained by the company, was subject to flooding, bridges were damaged and the bullock drays often became bogged. Even in summer, flash floods or waterholes drying up hampered cartage operations. Another method of using mules imported from Chile to carry their loads in panniers on their backs was tried, with limited success and carts were designed for them so that they could move supplies in all seasons. In 1856 the company petitioned the government to extend the railway line to Burra. This did not happen until 1870, the year after the smelter closed.

The Changing Fortunes of the Smelter

The Victorian gold rush, in 1852, brought the Burra smelting operations to the brink of collapse. By 1855, with labour shortages overcome and the cartage of materials like coal from Newcastle solved by using mules, things improved and in 1860-61, the smelter saw its most prosperous year. From 10,373 tons of ore, 3,007 tons of copper was produced.

*a series of waterholes found at Gum creek, Kadlunga, Skillogalee Creek, near Clare, Hoyleton, and Dunn's Bridge at Balaklava for the bullock teams that hauled coal from Port Wakefield