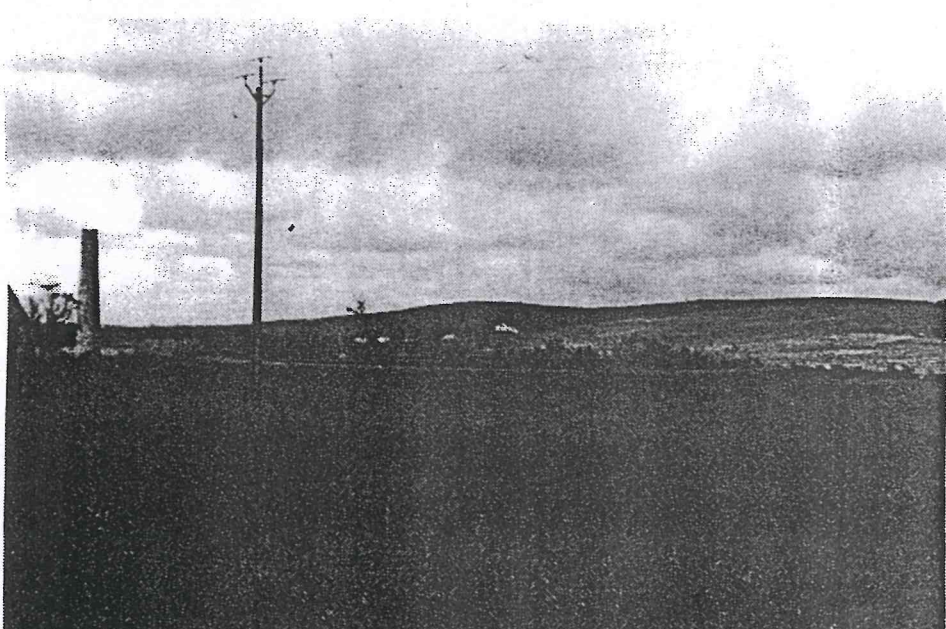
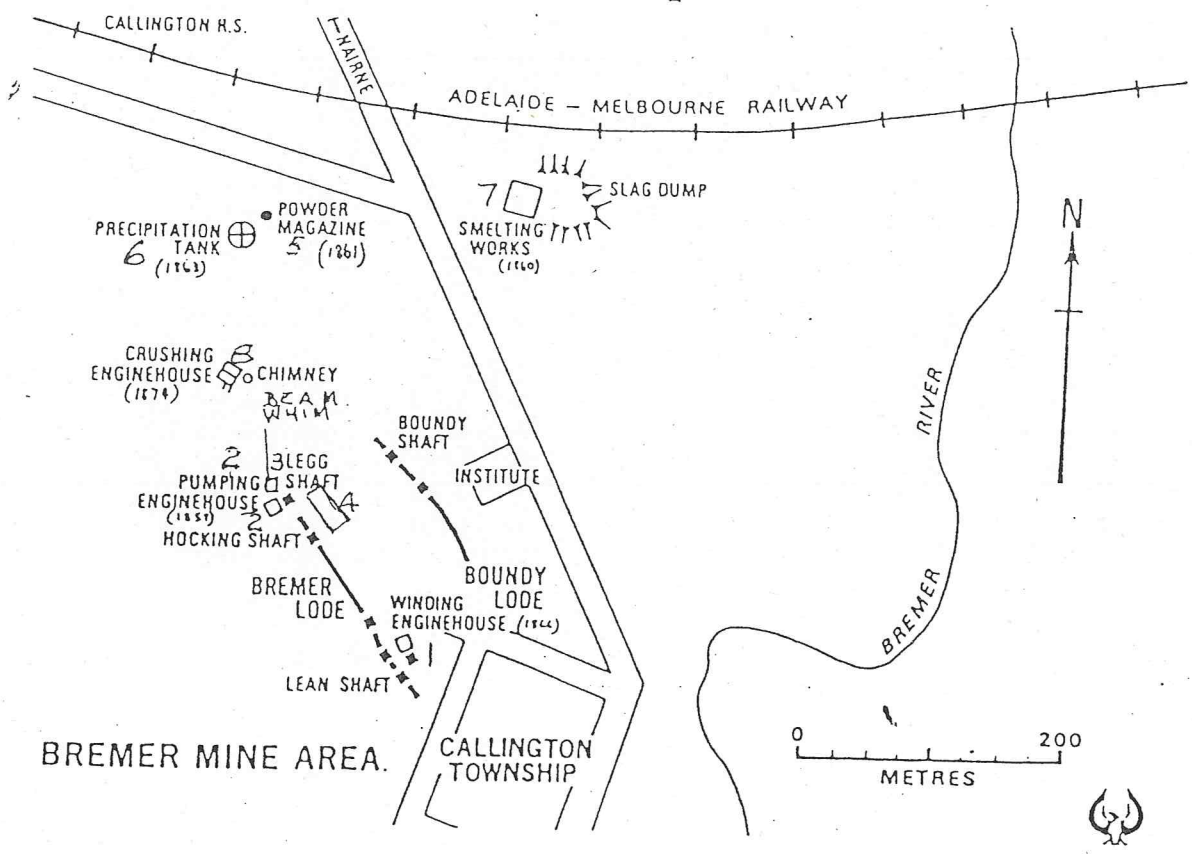


South Australian Heritage Act 1978-80	MOUNT BARKER DISTRICT HERITAGE SURVEY (STAGE ONE) ITEM IDENTIFICATION SHEET ITEM NAME: SETTLING TANKS Former or other	PROJECT DATE 1848 Item Ref. No. 220 Office Use ITEM No. DOCKET No.
HERITAGE SIGNIFICANCE Historically and architecturally of interest to the Trust. Built 1848 as settling tanks for the mine at Callington. Made of stone, wheelshaped, condition dilapidated, but not in ruins. First owner and presumably builder, Paringa Mining Co. Used first by Paringa Mining and S.A. Company; probably by Bremer Mining Co. in 1851; then by Worthing Mining Co. when they bought out Paringa Mining in 1856. Made obsolete by new ore processing plant 1860-61. (See Mt. Barker District Diagram 2 for location).		LOCATION Address Bremer Mine Area. Town Callington. Postcode Section Pt. Sec. 2001 Hundred Kanmantoo & Mon- County arto. C.T. Vol. L.G.A. 4120. Fol. 922. S.H.P. Region A.M.G. Ref. 6627-10501 SUBJECT Economic History PERIOD 1837-1851 State Study Area
REFERENCES N.T. 434. H.Y.L. Brown, <u>Record of the Mines of S.A.</u> , 4th ed. 1908. J. K. Chilman, Department of Mines and Energies, <u>Silver and a Touch of Gold</u> . 1982. Verbal Archival photographs		TYPE OF ITEM LAND Natural feature <input type="checkbox"/> Historical site <input type="checkbox"/> Historical Gdn. <input type="checkbox"/> BUILDING <input checked="" type="checkbox"/> STRUCTURE <input type="checkbox"/> PHYSICAL CONDITION
PHOTOGRAPH Film No. Negative No. Direction of view 		STATUS Reg. of State Her. Items Reg. <input checked="" type="checkbox"/> Interim L <input type="checkbox"/> Nominated <input type="checkbox"/> National Estate Reg. <input type="checkbox"/> Proposed L <input type="checkbox"/> National Trust CL <input checked="" type="checkbox"/> RL <input type="checkbox"/> File <input type="checkbox"/> Other RECOMMENDATION (A) State <input type="checkbox"/> (B) Local <input type="checkbox"/> PREPARED BY





FLINDERS RANGES RESEARCH



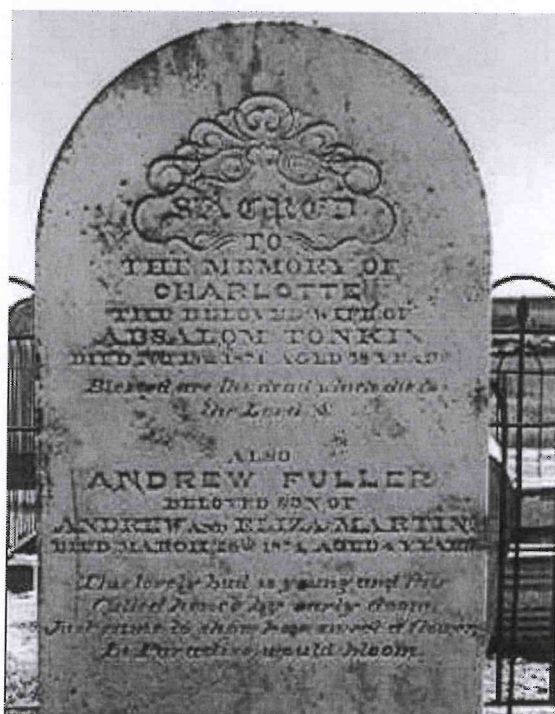
The Bremer Mine at Callington.



During the survey of Callington in 1848 John Kiernan noticed signs of copper when stone was crushed by a wheel of his dray. After further investigation a copper deposit was established which eventually gave rise to the Bremer mine. Initially the lode was worked by Thomas Lane on the Cornish tribute system for the Paringa Mining Company which operated in the area with W.S. Whittington as secretary. The first commercially successful copper smelter in Australia was completed by Charles and Mauris Thomas in 1848 on the banks of the Bremer river. Many years later they pioneered smelting works at Newcastle, Cobar and Peak Downs.

Map of Callington

Although surveyed, the town was not officially named for some time which is shown by the birth certificate of James Waters. Born on 14 July 1850, his place of birth was listed as Bremer. The Callington Inn opened for business in 1851 when T. Lean was granted his publican's licence. Very little work was done at the mine apart from some tributing and even that came to an end when the miners left for the Victorian gold fields. Some of the Callington miners who left were William and Josiah Odgers and Robert Peters. Before 1851 as many as seventeen mines worked on the Bremer Special Survey, including the Wheal Fortune.



Captain Absalom Tonkin also left and did not return until several years later in 1858 when he opened a store in Callington. At the Bremer mine the work was restarted by following the lode from the top down. However when the water level was reached it became impossible to continue in this way without the injection of major investment funds.

The mine was left idle until 1856 when it was bought by the Worthing Mining Company, which had abandoned its own Worthing mine at Hallett Cove. It too realised that the main problem to be solved was the enormous amount of underground water in the mine. In 1857 a forty inch steam engine was installed and started to dewater the mine at the rate of half a million litres per day.

Once again the Worthing company looked to Alfred Hallett to manage its mine. Once again it started with the expensive building of tall, solid stone buildings, engines, pumps, boilers and a chimney. With most of the miners at Callington and nearby Kanmantoo of Cornish heritage, miners still kept up most of their Cornish customs, including those of wrestling and Midsummer's Eve.

In 1859 the Bremer mine owners chose 24 June as the occasion for christening the arrival of the sixty inch Cornish engine from its old mine at Hallett Cove. This engine could pump at the rate of more than two million litres per day. The celebrations were continued at the Tavistock Hotel with a lavish dinner. In 1865, when the hotel was run by Charles Kingston and his wife, it nearly lost its licence when his wife admitted to having supplied the natives with liquor. Although she had only given the poor man half a glass of beer filled up with water, she was still fined \$2.

With the underground water problem solved mining was extended and during 1860-61 more than 150 men and boys were employed at the mine. Still more machinery was installed including an underground stone breaker. Because of Alfred Hallett's skill and management the Bremer mine produced between 250 and 300 tons of ore per month. This was smelted, which reduced the bulky and heavy copper ore to a much smaller and more valuable regulus, before transporting it to the English and Australian Copper Smelting Company at Port Adelaide or to England.

Hallett also bought the nearby Kanmantoo smelting works at Scotts Creek to refine copper regulus produced at the Bremer mine. During the second half of 1863 the total value of copper produced at the Bremer mine was \$15,000. The next year it increased to \$58,000 and in the next year it was \$48,000. Early in 1865 there was more than six hundred tons of ore waiting for the smelters. Work was progressing at the Hocking's shaft which had reached a depth of almost ninety metres. Tonkin's shaft was also extended and all stopes looked well.

With a steady production at the mine the town of Callington expanded and several new buildings were added in 1864, including the prominent Ising store. Production declined during the next years even though the main shaft had reached a depth of almost two hundred metres. While at work timbering one of the shafts, William Gafney lost his footing and fell to the bottom of the shaft on 24 June 1867. He died instantly. Continuous high inflow of water, low world copper prices and a steady increase in production cost forced the Bremer mine into liquidation in 1870 when it owed more than \$100,000. Alfred Hallett now became Chairman of the Board of Directors of the Murninnie Bismuth and Copper Mining and Smelting Company.

The Bremer mine once more was idle, this time until March 1872, when it was bought by the Bremer Mining Company from England. This company needed the remainder of that year just to dewater the mine. It was during this time that Captain Thomas Prisk had to report another fatal accident at the mine. While working underground in the main shaft, John Kavanaugh was struck by a rod of the engine shaft and died from his wounds on 2 November 1872. Another fatal accident happened a year later, on 21 August 1873, when a new bridge was under construction across the Bremer river. On their way to school at Salem, twelve year old Mathilda Gehricke and her friend Louisa Baum decided to walk over a plank to cross the river. Mathilda fell in and drowned.

When all work was completed and the mine dewatered the company sold copper ore to the English and Australian Copper Smelting Company between January 1874 and April 1876 to the value of \$40,000. Unfortunately not even Captain Prisk could make the mine pay its way. Although a man of great experience, Prisk could not produce copper when it just wasn't there.

As early as 1860 this Cornishman had been in charge of the Mount Rose mine in the Northern Flinders which he had called 'the most promising mining country in South Australia'. While in the isolated north he was able to travel to Adelaide to attend the wedding of his daughter Constance to John Wellington, smelter at the Strathalbyn mines on 11 August 1860. A few weeks later, on 21 September it was his own turn, when he married Mrs Elizabeth Sexton of Callington. Not long after his wedding he moved south and became Captain at the Wheal

Ellen mine at Strathalbyn and after that at Moonta and Wallaroo.

On 11 May 1874 the residents of Callington celebrated the connection by telegraph with Adelaide. The first message was sent by H. Jackson, JP., Captain T. Prisk of the Bremer mine, A. Tonkin, Dr. Weld and several other influential people to the South Australian Government and Charles Todd to inform and congratulate them with the new connection.

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Bremer Smelting Works

— Australia's first copper smelter

Greg Drew (Senior Geologist, Publications and Displays Branch, PIRSA)

The first metal mine in Australia was opened near Glen Osmond in South Australia in 1841 to mine narrow veins of silver-lead ore. It was followed by the copper mines at Kapunda (1844), Burra (1845), and the Callington district east of Adelaide (1846). Initially, ore from these mines was handpicked to ~30% metal content and shipped to Wales for smelting. To improve profitability, smelting works were erected at 10 locations in South Australia between 1848 and 1850. A further 16 smelters were erected between 1857 and 1874 (Fig. 1). Most of these had closed by the late 1870s with the exception of the largest smelting works at Port Adelaide and Wallaroo, which closed in 1901 and 1926, respectively.

The first commercially successful copper smelter in Australia was erected near Callington on the banks of the Bremer River in 1848. Known as the Bremer Smelting Works, it was built by Cornishmen Mauris and John Thomas, who had smelting experience in Cornwall, Wales and Chile. A Welsh-style smelting furnace commenced smelting low-grade ore (12% Cu) from the nearby



From left to right, Pearce Bowman (WMC) and Dick Mills with Fred Thomas and Fred Ellis, descendants of the Thomas family, at the Bremer Smelter commemoration ceremony. (Photo 46342)

Kanmantoo Mine, using local timber as fuel, under contract to the South Australian company. The ore was reduced to regulus (50% Cu) in a single firing; three further firings produced up to 95% Cu. The smelter closed in 1852 when miners left for the Victorian goldfields.

This was an era when smelting was a craft rather than a science, learnt on the job by trial, error and experience. Mauris Thomas' sons Charles and Mauris learnt smelting skills here and, in 1860, built and operated a smelter for the nearby Bremer Mine. Later they pioneered the industry at Newcastle, then Mauris, separately, at Peak Downs and Cobar Mines.

A monument in the form of a scaled-down smelting chimney was erected in 1998 by the Thomas Smelter Jubilee 150 Monument committee to commemorate the 150th anniversary of the commencement of the Bremer Smelting Works. Members of the committee included local historian Dick Mills, Fred Ellis (a descendant of the Thomas'), and Greg Drew of PIRSA. The chimney, which is 3 m high on a 1 m² base, was built with the help of volunteers from local stone donated by the Kanmantoo Slate and Stone Quarry. It is located at the intersection of the old Princes Highway and the Bremer River ~1 km north of Callington on the site of the original smelter. The major sponsor for construction of the monument was Western Mining Corporation (WMC). Three vitreous enamel panels written, designed and produced by PIRSA have been fixed to the chimney.

A plaque to commemorate Australia's first copper smelter was unveiled by Pearce Bowman, Executive General Manager WMC Copper Uranium Division, on 10 October 1998.

For further information contact Greg Drew (ph. 08 8463 3270). ■

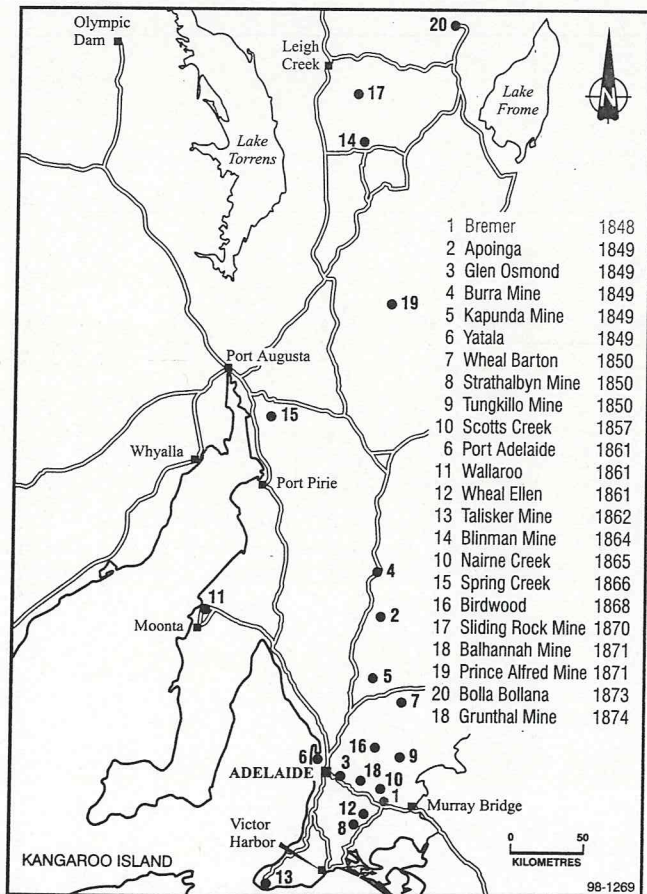


Fig. 1 Location of early smelting works in South Australia.

56/27/67

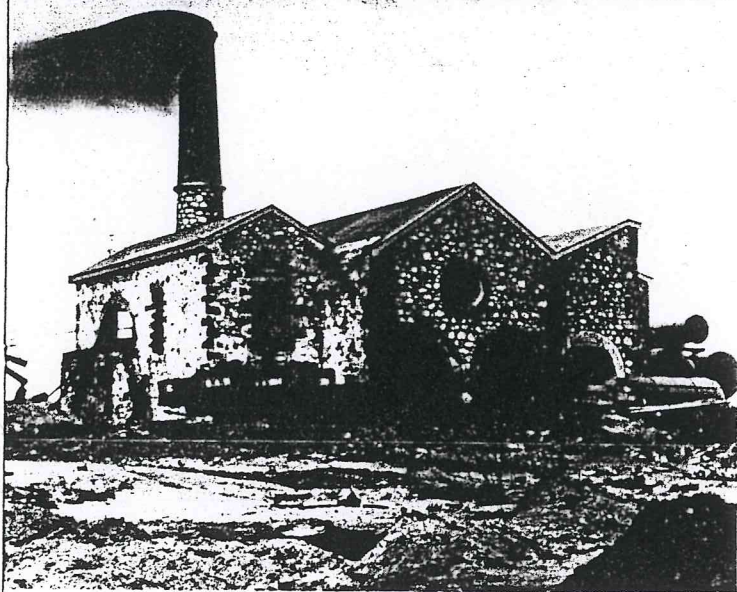
Collwell & Finch - 1973

EXPLOSIVES HUT, Callington

This quaint domed hut at Callington, just off the main highway to Murray Bridge, was owned by the Worthing Mining Company and is believed to have been used for storing explosives.

The following description of the mines appeared in Austin's *Mines of South Australia*, published in 1863: "The mine is the freehold property of the Worthing Mining Company and is sometimes called the Callington Mine. The present state of the workings may be thus described. The engine shaft is sunk to a depth of 53 fathoms and levels have been driven at the following depths, 12, 23, 33 and 43 fathoms. The total length of the drives is about 400 fathoms. 4,500 tons of ore have been recovered in 5 years."



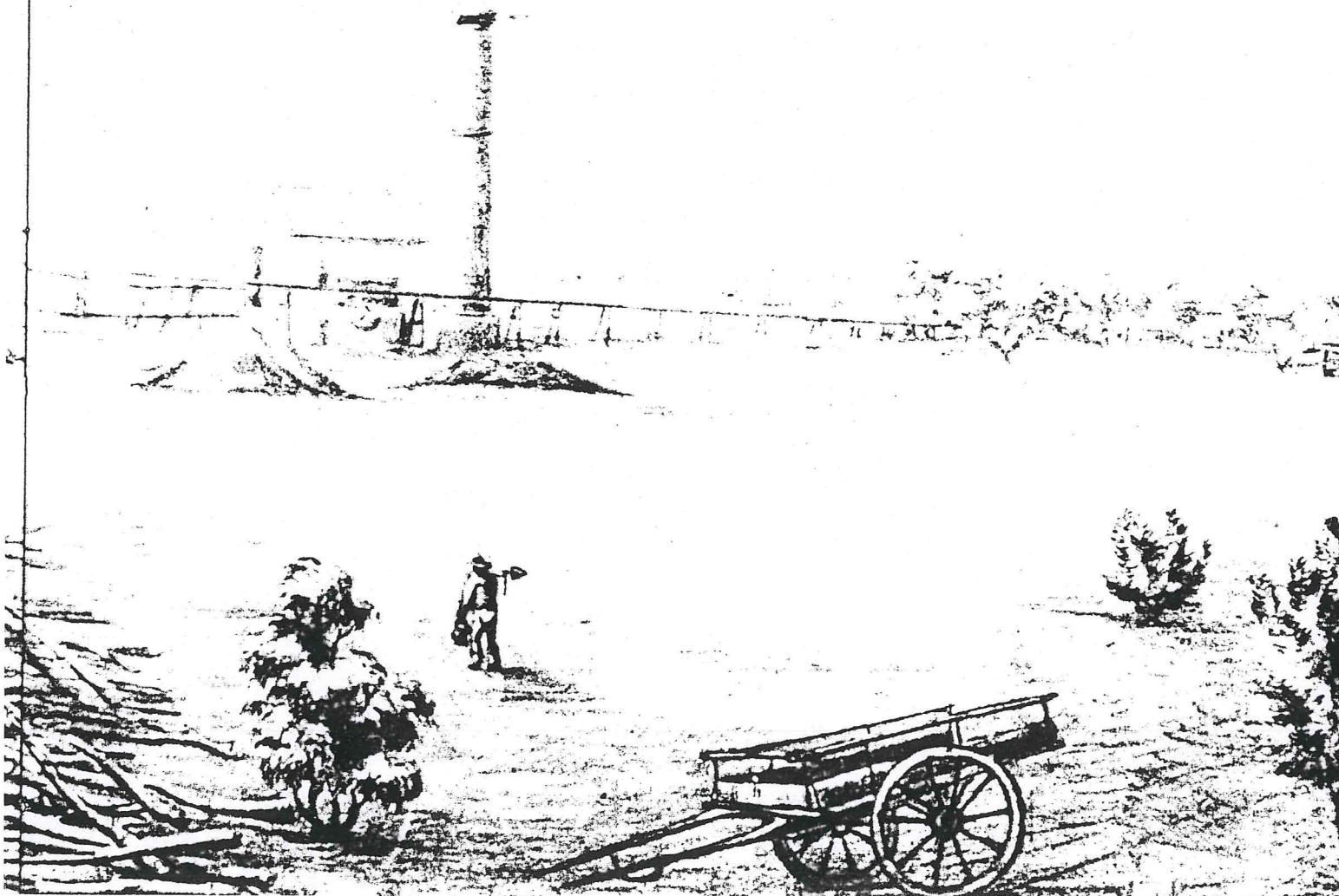


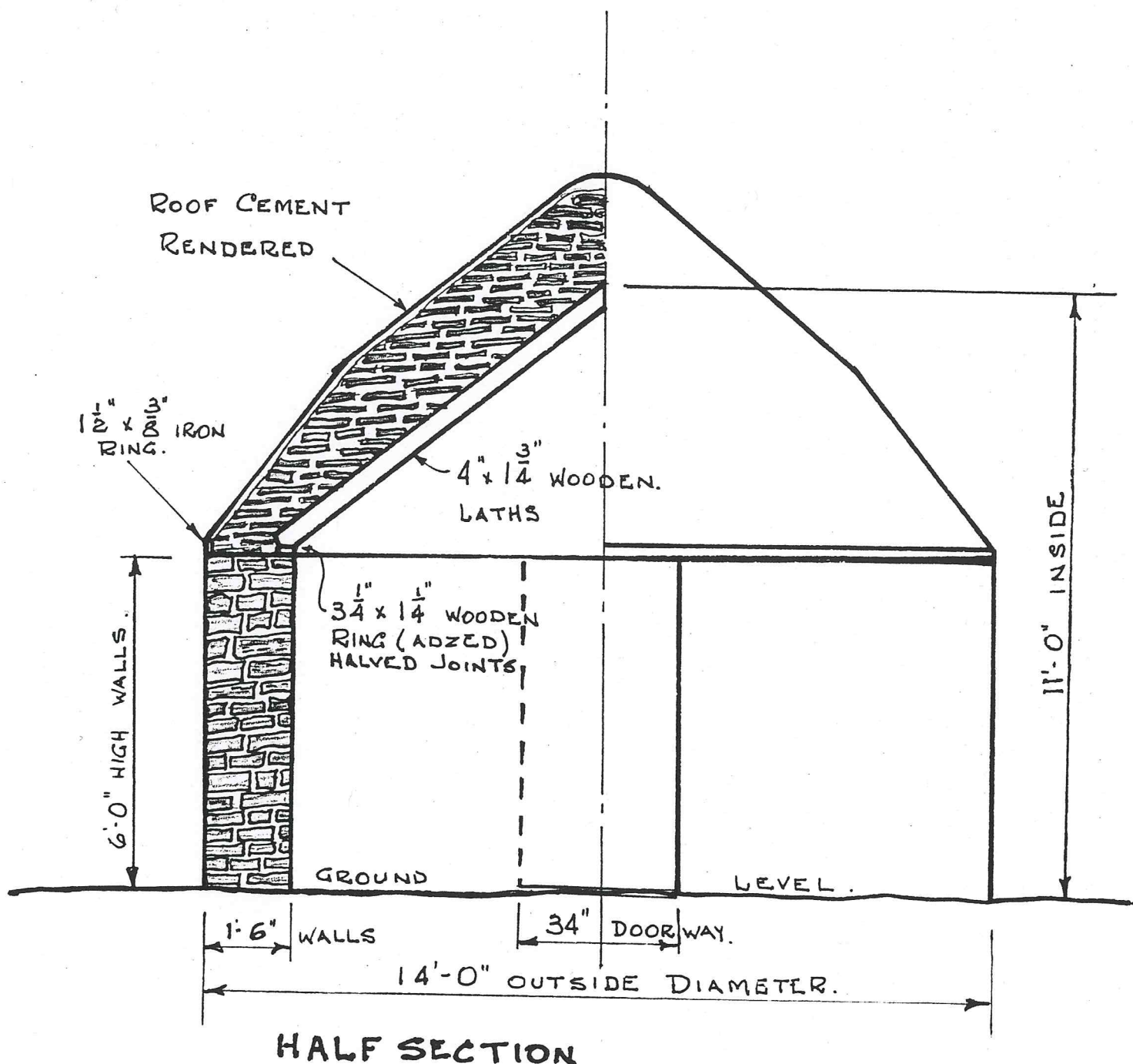
Above left: The Karkarilla Mine in 1906. Rich ore was discovered here in 1861, on the southern boundary of the Moonta leases, and a mine established. The engine and boiler houses were erected, but after a few years the property was abandoned. Later a new company acquired the mine and discovered a second lode situated a little farther west. The new western section was named the Hamley and operations concentrated there, the Karkarilla section soon being closed. In 1900 the Karkarilla was again opened, and the



combined Hamley property continued as an independent concern until its absorption into the Wallaroo and Moonta Mining and Smelting Co. during the first World War

Above right: The directors and employees of the Copper Hill Mining Co., near Kadina. Clearly the Copper Hill was not a particularly rich venture, for it is not immediately obvious who are the directors and who are the employees!





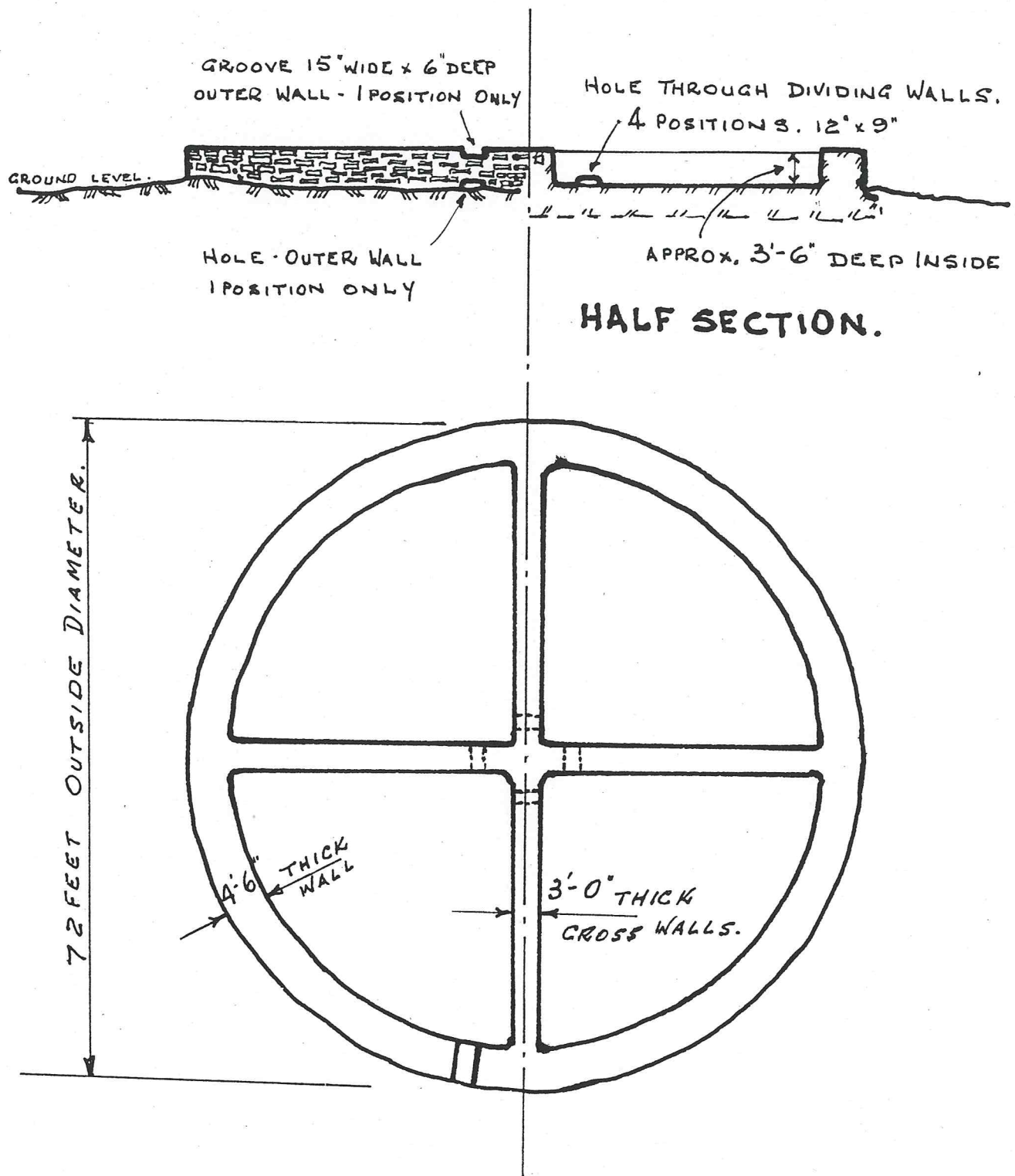
EXPLOSIVES MAGAZINE BREMER MINE

CALLINGTON SOUTH AUST.

MATERIAL STONE.

CONDITION NOV. 1982 STONEMWORK - VERY GOOD
WOOD IN CEILING - VERY GOOD. DOOR & FRAME MISSING

J.E. CONNELL



SETTLING TANK

BREMER MINE CALLINGTON STH. AUST.

MATERIAL OF CONSTRUCTION.

INNER LINING

OUTER SURFACE

FLOOR

SCHIST.

CEMENT RENDERED

UNDRESSED SCHIST

COVERED WITH DEBRIS

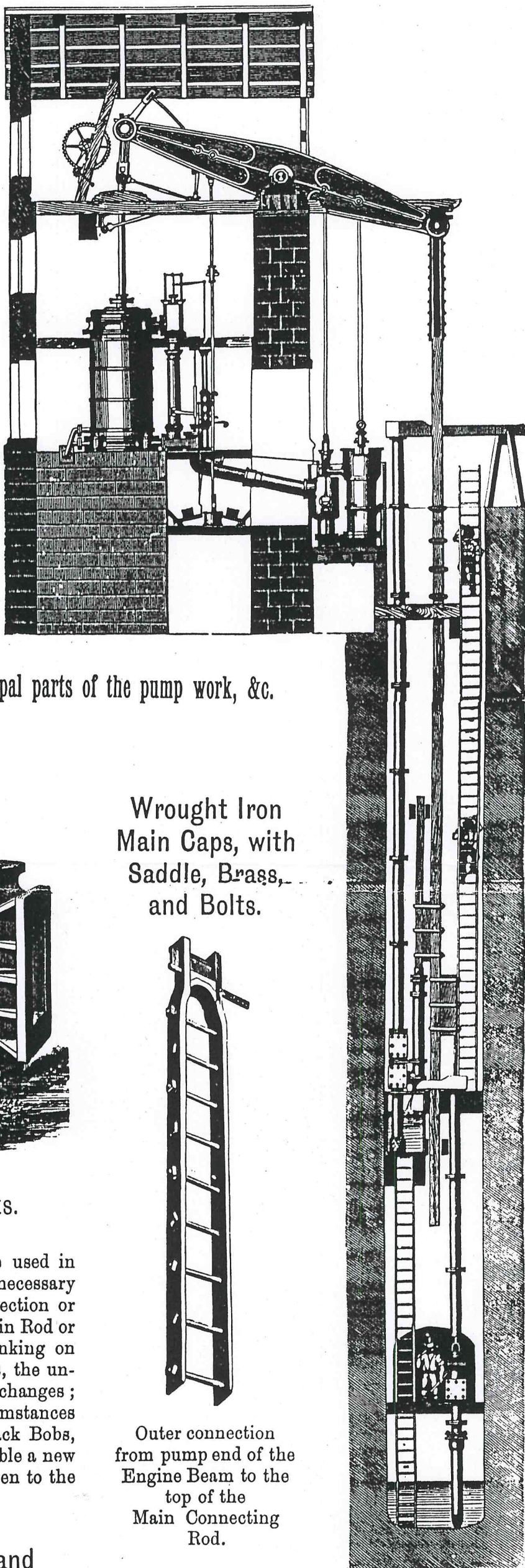
CONDITION. NOV 1982. ALMOST INTACT. FEW TOP STONES
DISPLACED- SOME INNER LINING SPALLED OFF.
SURFACE OF EXTERNAL WALLS WIND ERODED.

J.E. CONNELL.
10.11.82.

THE
Cornish Pumping Engine,

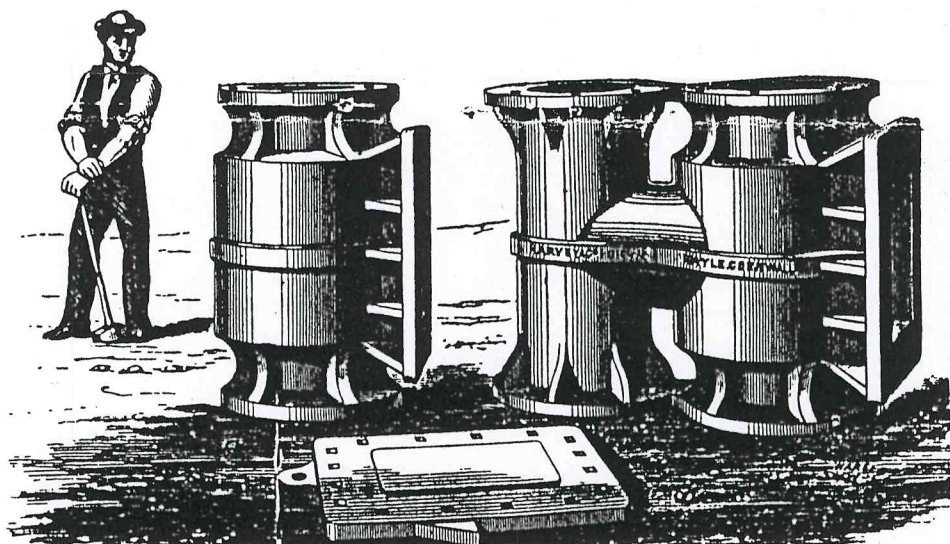
AS USED FOR DRAINING MINES.

THIS illustration shows the usual method adopted for the unwatering of deep mines. The pumps are arranged in lifts placed one above the other at distances varying from 30 to 50 fathoms or more. At the bottom is placed the drawing lift, by which the water is lifted a height of about 10 fathoms to the first plunger lift, from which point it is forced by a plunger up the rising main to the second lift, and so on, until it reaches the surface.

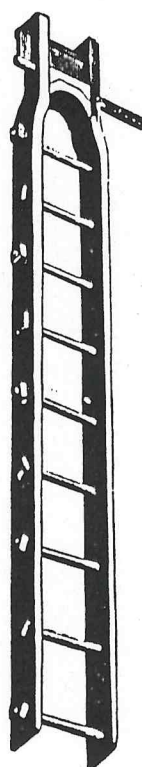


The accompanying Illustrations show some of the principal parts of the pump work, &c.

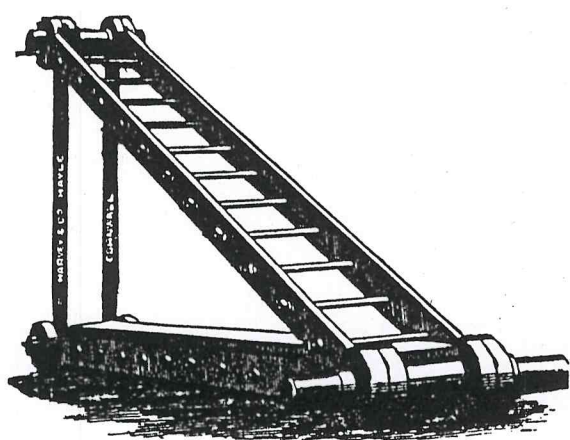
H Piece and Door Piece.



Wrought Iron
Main Caps, with
Saddle, Brass,
and Bolts.



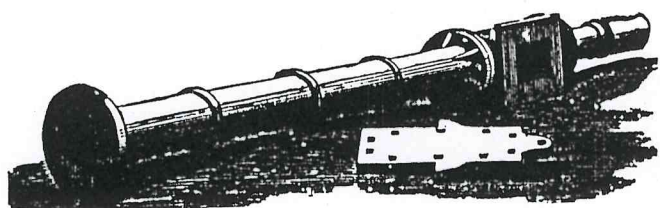
V Bobs for Flat Rods and Underlay Shafts.



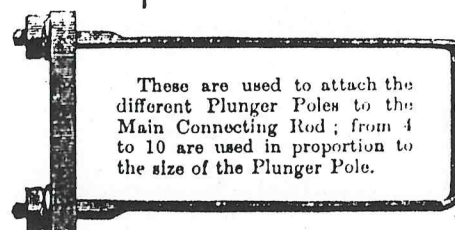
These V Bobs are used in places where it is necessary to change the direction or underlie of the Main Rod or Flat Rods. In sinking on metalliferous lodes, the underlie frequently changes; under such circumstances fend off, or holdback Bobs, are required to enable a new direction to be given to the Main Rod.

Outer connection
from pump end of the
Engine Beam to the
top of the
Main Connecting
Rod.

Working Barrel, Clack Door Piece, Door and
Wind Bore.



Staple and Gland.



These are used to attach the different Plunger Poles to the Main Connecting Rod; from 4 to 10 are used in proportion to the size of the Plunger Pole.